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DISPARITIES IN FOOD SECURITY STATUS BETWEEN THE INDIGENOUS PEOPLE AND RESETTLERS: *A CASE FROM ASOSSA WOREDA, BENISHANGUL-GUMUZ REGION, ETHIOPIA*

BY
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Title

Disparities in Food Security Status between the Indigenous People and Resettlers. A case study from Asossa Woreda, Benishangul-Gumuz Region, Ethiopia

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Abstract

This study was conducted with the general objective to assess the disparities in household food security between the indigenous people and resettlers living in Asossa Woreda of Benishangul-Gumuz Region. For this study, two contiguous rural kebeles (Ura kebele inhabited by the indigenous people and Amba 1 kebele inhabited by resettlers) were purposively selected, and a total of 105 sample households proportionately 51 and 54 sample households were selected, respectively from Ura and Amba 1 using systematic random sampling technique. Primary data was generated through structured household survey questionnaire, FGDs, key informant interviews and direct observations. Household Food Insecurity Access Scale (HFIAS) developed by FANTA project was used a measurement tool for food security status. Both qualitative and quantitative data analysis techniques were used. For the quantitative data, descriptive statistics, such as frequency, mean, standard deviation and cross-tabulations were widely used. The study result revealed that 69.5 % of the total sample households were food insecure with different levels of severity (26.7 % mildly food insecure, 25.7 % moderately food insecure and 17.1 % severely food insecure). Only 30.5% of the households were found to be food secure. With this indicator, the percentage of food insecure households of the indigenous and resettlers were 66.7% and 72.7 % respectively, showing that sample households of resettlers were more likely to be food insecure than that of the indigenous people. Although there are disparities in food security status between the sample households of the indigenous and resettlers, the t-test didn't confirm the presence of statistically significant difference between the two groups of households in terms of food security status. Explanations for the causes of food insecurity and disparities were made form the perspectives of households' assets; activities and strategies; institutions, organization and social relations; and vulnerability context. The study findings suggest that in ensuring food security, strategies and interventions should focus on the general livelihoods of the households.

CHAPTER ONE

INTRODUCTION

1.1Background

Food is one of the necessary conditions for the well-being of a society. In order to lead a healthy and productive life, every individual should have access to sufficient food. People's inability to gain access to food to meet their dietary needs leads to food insecurity (Reutlinger, 1987; Saad, 1999; Markos, 2005). Nowadays, food insecurity has become one of the main global development issues.

The problem of food insecurity is particularly critical in developing countries, though it is a global issue too. Globally, more than one billion people live on less than one US dollar a day (World Bank, 2008), and according to the assessment made by FAO (2006), it was estimated that there were still 854 million undernourished people worldwide in 2001-03, of which 820 million live in developing countries. The highest incidence of undernourishment is found in Sub-Saharan Africa where one in every three persons suffers from chronic hunger (World Bank, 2008).

Although an international commitment has been made to halve the proportion of people living in extreme poverty and hunger by the year 2015 (the first Millennium Development Goal), the poverty rate is not reduced in developing countries as required (FAO, 2006). Food insecurity and hunger is high, and millions of people in the world suffer from shortage of food and absence of reliable access to food every year (Mesay, 2001).

Ethiopia is a country where food insecurity is widespread (FDRE, 2002; Workneh, 2006). Food insecurity is common in all regions of Ethiopia, though its nature, extent and causes may vary from place to place. Food insecurity is more prevalent in rural areas where the majority of the population live and the majority of them are heavily dependent upon agriculture as key element of their livelihoods.

The nature and extent of the food security situation is directly and indirectly related to the general livelihoods of the people (Yared, 2001; Degefa, 2005). Food security should not be seen as isolated from the people's livelihood (Baro and Deubel, 2006). It is, therefore, misleading to treat the issue of food security independently of the wider livelihood considerations.

Therefore, a wider assessment of livelihood is required to make a more in-depth analysis of food security so as to identify the underlying causes of food insecurity, and to analyze the disparities in food security.

1.2 Statement of the Problem

Ethiopia is one of the least developed countries where the majority of its population are living in poverty and facing persistent problems of food insecurity. The national poverty head count index is 38.7 % (39.3% for rural and 35.1 % for urban) (World Bank, 2007). The country has always suffered from food shortage because of sever environmental degradation, recurrent drought, high population growth and some other factors (Getachew, 1995; Markos, 1997; Degefa, 2005). Based on the CSA 2004 Welfare Monitoring Survey Report, over 30 % of the households in the country (34.2 % for rural % 14.8% for urban) reported to have difficulty in satisfying food need, i.e., they have suffered from food shortage. Ethiopia is still a recipient of food aid.

Even though the number of undernourished people in Ethiopia has declined from 38 million in 1993-95 to 32 million in 2001-03 (FAO, 2006), the problem is still severe, and food insecurity is widespread in the country. The prevalence of malnutrition of children under five years of age is significantly high with nearly 47 % of the children under five are stunted (short-for-age), 11 % are wasted (thin-for-height) and 38 % are underweight (CSA, 2006).

The prevalence and severity of food insecurity varies from place to place (spatial variation), from time to time (temporal variation) and even between different households (inter-household variation) and within in the members of a household (intra-household variation). The nature,

extent and causes of food insecurity are, therefore, complex. This means that different regions of Ethiopia are heterogeneous in their poverty and food insecurity situation due to several reasons.

Benishangul-Gumuz region is one of the poorest and most food insecure regions in the country (BGRS, 2004). The region has a high incidence of poverty of 54 percent (Degefa, 2005; World Bank, 2007). The 2005 Demographic and Health Survey (DHS) data also shows that malnutrition among children under five years of age is also significant in the region (CSA, 2006). There are also empirical evidences that indicate that the majority of the people of the region are food insecure. For instance, the sample result of a case study made by Yilma in Asossa woreda of the region revealed that only 20.7 % of the sample farmers were food secure and the rest 79.3 % are food insecure with different levels of hunger (Yilma, 2005).

Studying the prevalence of food insecurity by itself is one step towards finding solutions. But, there are many differences among the groups of people in terms of socio-cultural behaviors, economic practices, background experiences and the general livelihoods, which need to be investigated further in order to understand the disparities in food security so as to provide appropriate interventions directed to the people's specific needs and priorities. Despite the wide livelihood differences amongst the different groups of households, many research efforts made so far related to food security do not thoroughly consider such livelihood differences in an attempt to imply for appropriate interventions. To provide appropriate locally specific solutions/ interventions that help households ensure food security along successful pathways, it is crucial to understand the disparities between different livelihoods of the people. Swift and Hamilton (2001) stated that the reasons why some households are food insecure are related to their entire livelihood systems. Therefore, the diversity and complexity of livelihoods should be understood in order to analyze the underlying causes of food insecurity and thereby to design appropriate development interventions accordingly. And, there is no study made on the disparities in food security in Benishangul Gumuz region where many ethnic groups of households with different livelihoods and background economic experience are living. Particularly, the livelihood system of the indigenous people is different from that of non-indigenous people, such as resettlers living in the region because of historical and socio-economic background experiences which, in turn, may make possible for the disparities in their food security status.

Unless the disparities in food security/insecurity among and within the households and the underlying causes of these disparities are well known, it is practically difficult to design and implement appropriate interventions that help ensure food security. In addition, assessment of food security in a given area should be seen from the perspectives of livelihoods of the local people in a holistic manner and centering on the people to obtain the right picture of the situation of food security (Yared, 2001; Swift and Hamilton, 2001; Devereux *et al.*, 2004; Degefa, 2005). Understanding the disparities in food security and the factors underpinning it is essential to address poverty and vulnerability, and the ways in which some groups may be differently affected by development programs and policies (Gete *et al.*, 2006).

This study, therefore, focuses on the disparities in household food security status between the indigenous people and the resettlers living in Asossa *woreda* of Benishangul-Gumuz Region. This enables us to explore the possibility of further insights in an attempt to ensure food security through interventions of locally specific and appropriate rural development programs in an integrated and coordinated manner.

1.3 Objectives of the Study

The general objective of the study is to assess the disparities in household food security status between the indigenous people and resettlers living in Asossa *Woreda* from their livelihood context. More specifically, the objectives of the study were:

- To assess the disparities between the two groups of households (the indigenous people and resettlers) in terms of the prevalence and severity of food insecurity based on their actual experiences;
- To examine the livelihood contexts of the two groups of households and as to how the livelihood differences imply for the disparities in food security; and
- To explore the diverse coping strategies pursued by the households of each group of households in response to food shortage.

1.4 Research Questions

The study is designed to answer the following key questions:

1. What is the current food security/insecurity status of each group of households of the study communities?
2. What are the underlying causes of disparities in food security/ insecurity between the indigenous people and resettlers living in Asossa *Woreda*? Under this broad question, the specific questions to be investigated include:
   - 2.1 What livelihood assets/ resources does each group of people use in attempt to secure food?
   - 2.2 What livelihood activities and strategies does each group use to access food?
   - 2.3 How do the existing institutions, organizations and social relations affect the households' food security status?
   - 2.4 What does the vulnerability context of each group look like?
3. What are the coping strategies pursued by households of each group in response to food shortage?

1.5 Significance of the Study

The study seeks to understand and generate more knowledge on the complexities and diversities of food security between the different groups of households in the rural community. The findings of the study will also hopefully help policy makers and development practitioners, who are involved in the area of food security and rural development, as a useful guide to implement locally specific, appropriate and equitable interventions to ensure food security. Furthermore, it can serve as an important lesson to replicate the idea to other areas where the conditions are relevant and the situations are similar to the study area.

1.6 Scope and Limitation of the Study

Due to the constraints of time and resources, the study was restricted to two contiguous rural *kebeles* of Asossa *woreda* - Ura *kebele* which is inhabited by the indigenous people or Berta and Amba 1 *kebele* which is inhabited by resettlers. The study was also confined to the analysis of the disparities in food security between the two groups of households of the study *kebeles*.

The applicability is, therefore, restricted to the population that they come from. That is, it is not possible to infer or generalize the findings of the study to the whole population of the *woreda* of the region as a statistically representative sample.

The other limitation is related to the unit of analysis. In this study, household was used as the logical unit to view the disparities in food security between the two groups of households (indigenous and resettlers). Therefore, the intra-household disparities that might have existed within each household were not given due attention. Furthermore, it is suspected that the respondents for the household survey might have reserved to openly provide the right information regarding some household assets and some personal issues. Moreover, there may be some risk of biased responses among some households due to expectation of aid. The memory span of the respondents for some requested data may also affect the accuracy of information. For instance, households may not accurately recall the households' food insecurity situations over the period of four weeks. In order to minimize the above mentioned limitations, it was, however, attempted to triangulate the household survey data with other sources of data.

1.7 Organization of the Study

The study has seven chapters. The first chapter is the introductory part which comprises of background and justification of the study, the study objectives, research questions, the significance of the study and the scope and limitations of the study. The second chapter briefly reviews the concepts, theories, and empirical works related to food security/insecurity. The third chapter is about the study area and research methodology. Chapter four gives some information about the demographic and socio-economic characteristics of the sample households.

The results and the discussions of the study are presented in chapter five. This chapter is the main part of the study which deals with the findings related to the households' food security status and disparities between the indigenous people and resettlers, and the possible explanations for these. The last chapter concludes the main findings of the study and draws recommendations.

CHAPTER TWO

CONCEPTS and THEORIES OF FOOD SECURITY, AND RELATED LITERATURE

2.1 Introduction

This chapter starts with describing the concepts of food security/ insecurity, and then, it tries to review how the conceptualization of food security has developed and grown over time. The chapter also briefly presents the global and national efforts made towards achieving food security. Moreover, the theoretical explanations for the causes of food insecurity and empirical works related to the research focus are reviewed so as to better understand the issues that have not been studied sufficiently and to pin point the research gap that should be filled. Finally, the Sustainable Livelihood Framework is presented as a conceptual analytical tool for analyzing food security/insecurity.

2.2 Concepts of Food Security/Insecurity

Although food as one core human right was affirmed by the United Nations Universal Declaration for Human Right in 1948, the concept of food security emerged later following the world food crisis of 1972- 1974 (Saad, 1999). The concept firstly emerged at the World Food Conference in 1974 held in Rome (Maxwell and Frakenberger, 1995; Young, 1997; Maxwell, 1996; Saad, 1999; FAO, 2008). Since then, many different definitions have been given to food security by different individuals and development agencies.

The recently and perhaps the most widely used definition is the one adopted by FAO (1996) at the World Food Summit. FAO has defined food security as "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life"(FAO, 2008).

From the definition given above, four key components of food security had been identified: Physical availability of food; economic and physical access to food, food utilization; and stability of the other dimensions over time. According to FAO (2008), each of the dimensions of food security is described as follows: Food availability is to mean the supply of food from

production, imports, stocks or net trade; access to food or accessibility refers to the individuals ability to acquire available foods, which can be through own production, purchase, exchange or gift /remittance; food utilization is more of the physiological phenomenon or biological use of food, which is determined primarily by individual's health status (general hygiene and sanitation, water quality, health care practice and food safety ad quality); and stability or (sustainability) is to mean that the supply of food, and access to food and food utilization should be stable without fluctuating from season to season or from year to year. It is the temporal dimensions of food security (i.e., the time frame over which food security is being considered) (FAO, 2008).

One should not be confused with the concepts of food security and food self-sufficiency. These are different concepts. Food self-sufficiency at the household level can be defined as the capability of a household to adequately feed all members from its own production/farming activities/ all-year round (Degefa, 2005). This means that a household could be considered as non-food self sufficient, if own food crop production doesn't cover the annual food requirements of the household. For a farming household, food self sufficiency is often a necessary, but not a sufficient condition to food security. This is because food security is dependent not only on food availability (supply), but also on food access (ability to acquire food through production or purchase), and food utilization, which is affected by many factors such as education, health and access to safe water (Umali-Deininger and Shapouri, 2002). Thus, the household is said to be food secure, if and only if the household (and all individuals within it), at all times, has physical, social and economic access to sufficient, safe and nutritious food that meets the dietary needs and food preferences of the household (FAO, 2008).

Conversely, food insecurity is defined as a situation when people lack secure access to sufficient, safe and nutritious food for normal growth and development for active and healthy life (World Bank, 1986b). Food insecurity can also be defined as "the inability to acquire or consume an adequate quality or sufficient quantity of food in socially acceptable ways, or the uncertainty that one will be able to do so" (Wolfe and Frangillo, 2000).

From the point of time dimension, food security analysts categorized food insecurity into two: chronic and transitory (World Bank, 1986b; FAO, 2008). Chronic food insecurity is a type of food insecurity, which is taken as long-term or persistent that occurs when people are unable to meet their minimum food requirements over a sustained period of time, manifested as a result of long-term poverty, whereas transitory food insecurity is short-term and temporary and refers to a sudden drop in the ability to produce or access enough food to maintain a good nutritional status due to short term shocks and fluctuations in food availability and food access. Transitory food insecurity can also be classified into two sub categories: Cyclical and temporary (Hoddinott, 1999a; FAO, 2008). Cyclical or seasonal food insecurity is a type of food insecurity where there is a regular pattern to food insecurity. It is usually occurred during the "lean season" or "hungry season", the period just before harvest. Temporary food insecurity is a type of food insecurity resulted due to a short term, exogenous shocks such as drought or floods.

There are also important differences in the severity of the way in which people experience food insecurity. The term acute food insecurity can be used to describe a severe and life threatening situations. If the situation becomes worse, usually associated with substantial loss of life, transitory food insecurity becomes famine (Reutlinger, 1987).

For analytical purposes, it is also possible to give 'scales' to classify the level of food security status depending on different indicators and cut-off points. For instance, the food security status of a household can be classified as food secure, mildly food insecure, moderately food insecure and severely food insecure based on the Household Food Insecurity Access Scale (Coates et al., 2007).

Households have their own mechanisms to cope with food insecurity. For instance, different groups of households pursue different mechanisms as short-term responses to food shortage. This mechanism is known as coping strategy. There are many different coping strategies that the households use at times of crisis. Different scholars classify coping strategies in different ways. For instance, Dessalegn (1987) classified survival strategies into four sequential stages: 1) austerity and reduced consumption; 2) temporary migration; 3) diversification an asset

disposal; and 4) crisis management. On the other hand, Yared (1999) noted that peasants in Wogda (a locality in the central highlands of Ethiopia) undertake various types of seasonal coping strategies, such as animal sales, non- agricultural income earning, reduction of expenditure, grain loan and agricultural wage labor. Ali (2008) also pointed out that reduction of food intake and changing composition of diet, sale of non- livestock assets, mobilizing social support networks and claims and income generation from non- pastoral activities were the main coping strategies that the Afar pastoralists used to pursue during times of food shortage. Maxwell (1995) has also classified household coping strategies into six: 1) eating foods that are less preferred; 2) limiting portion size; 3) borrowing food or money to buy food; 4) maternal buffering. Maternal buffering is the practice of a mother deliberately limiting her own intake in order to ensure that children get enough to eat; 5) skipping meals. Eating only one or two meals per day was commonly practiced; and 6) Skipping eating for whole days. Each of these coping strategies has its own impact on households' food security.

2.3 Shifts in Thinking about Food Security

Food security is a dynamic and flexible concept. The conceptualization of food security has developed and grown over time. Maxwell (1996), also cited in Degefa (2005), has shown this evolution of thinking about food security as consisting of three paradigm shifts. These were: 1) from the global and national to the household and individual; 2) from food first to livelihood perspective; and 3) from objective indicators to subjective perceptions.

i) From the 'Global and National' to the 'Household and Individual'

At the time of the emergence of food security as a concept, the concern was on the need to focus on world food supply and prices in order to ensure global and national food self-sufficiency (Maxwell, 1996; Degefa, 2005). However, this early concern to have adequate food supply at the international and national level didn't help ensure food security at the household and individual level. The idea of the 'entitlement' approach which is pioneered by Amartya Sen (1981), cited in Degefa (2005) has influenced this thinking in that a household may suffer from food shortage in a region or country where adequate food is available. The focus of efforts consequently switched to addressing poverty rather than food availability. The unit of analysis is also shifted from the global and national level to household and individual level.

and solemnly proclaimed that "every man, woman and child has the inalienable right to be free from hunger and malnutrition in order to develop their physical and mental faculties"(UN, 1975, cited in Degefa, 2005:64). This global initiative was one step in an effort to ensure food security.

In 1996, the FAO hosted 186 Heads of State or Government and other high officials at the World Food Summit to discuss and combat world hunger (Saad, 1999). This Summit was important for the adoption of a rights-based approach to food security. It was agreed that the food security program and practice should include not just economic and resource problems, but rights violations. Development in general and food security interventions in particular, should empower people to reclaim their rights (Maxwell, 1996; Saad, 1999).

In 2000, at the United Nations Millennium Summit, world leaders agreed to a set of time-bound and measurable goals and targets for combating poverty, hunger, disease, illiteracy, environmental degradation, and discrimination against women. These goals and targets become known as the Millennium Development Goals (MDGs). The first MDG is to eradicate extreme poverty and hunger by reducing by half the proportion of people living on less than a dollar a day, and reducing by half the proportion of people who suffer from hunger by 2015(FAO,2006).

ii) Many International Organizations Incorporate the Issue of Food Security in their Programs

Many observations indicate that international institutions, like the World Bank, FAO, WFP, IFPRI, IFAD, UNICEF, OXFAM, and many other international institutions and NGOs are being directly or indirectly involved in food security and nutrition issues, and incorporate the food security issues in their programs and strategies. Many of them have developed general frameworks and plans of action with the common objectives of ensuring food security. For instance, a ten-point action plan or consensus strategy was developed by FAO for food security in Africa that primarily focused on supplying vulnerable peoples with secure access to food (Maxwell, 1996).

iii) National Initiatives Towards Food Security

In line with the global initiatives and the food insecurity problems facing the country, Ethiopia has developed different policies, programs and strategies which help ensure food security. One such broad policy is the rural development policies, strategies and instruments which the government of Ethiopia developed in 2001 (MoI, 2001). With this policy, the current government of Ethiopia is following a long-term strategy, known as Agricultural Development-Led Industrialization (ADLI) which sees agricultural growth as the engine of industrialization through its effects on demand on industrial goods, supply of raw materials and exports. On the basis of this rural development policy framework, the Federal Food Security Strategy was developed in 1996, and later adopted in March 2002 (FDRE, 2002).This strategy has aimed at ensuring food security at the household level. Four major programs are included in the food security strategy of Ethiopia. These are: 1) direct food production intervention program; 2) voluntary resettlement program; 3) income diversification program; and 4) productive safety net program (Workneh, 2008). These programs are based on the following three interlinked approaches: 1) increasing the availability of food through increased domestic production(supply side); 2) ensuring access to food through increasing the purchasing power of food deficit households(demand side); and 3) strengthening emergency response capacities (FDRE, 2002; Workneh, 2008).

In order to effectively implement the food security strategy, The New Coalition for Food Security Programme was established in 2003 in which the government and development partners (donors, UN, NGOs, and other stakeholders) have expressed their commitment to fight against food insecurity with a new partnership (FDRE, 2003). The Government of Ethiopia has also developed a comprehensive policy and program framework, known as Plan for Accelerated and Sustained Development to End Poverty (PASDEP) that will span a period of 5 years (2005/06-2009/10) and serves as a medium term plan to attain the MDGs (MoFED, 2006).

Within the general framework of the national food security strategy, many of the regions of Ethiopia have developed their own food security strategy. Benishangul Gumuz region, the region in which this study is conducted, developed its own food security strategy in 2004 with

the overall goal to contribute towards attaining household food security and reducing poverty in the region (BGRS, 2004).

Despite, the global, national and local efforts made to ensure food security, food insecurity problem remains a challenge. Millions of people are still facing food insecurity that is either chronic or transitory in nature (FAO, 2006; World Bank, 2008). However, the prevalence and severity of food insecurity differs from one country to another country; from one household to another; and even between individuals within a household.

2.5 Disparities in Food Security/Insecurity: Causes

It has been recognized that disparities in food security/ insecurity exist among countries, communities, households and individuals due to different underlying causes. For instance, differences in households' food security status reflect different underlying conditions of the households. Therefore, in order to understand the disparities in food security/insecurity, it is important to thoroughly understand the underlying causes of food insecurity or the factors that affect food security. Food insecurity can be attributed to multiple factors which reinforce and interact to each other. And, there are many theoretical explanations and empirical evidences which show that food insecurity can be caused by different underlying causes.

2.5.1 Theoretical Explanations for the Causes of Food Insecurity

There are different theories which many literatures emphasized on as explanatory causes for famine and food insecurity (Getachew, 1995; Devereux, 2001; Degefa, 2005; Fassil, 2006; Ali, 2008). Some of the theories mentioned by them are summarized below.

i) Neo-Malthusian Theory / Demographic Theory: This theory explains that rapid population growth as a principal cause of famine (extreme case of transitory food insecurity). That is, hunger and other forms of human poverty are the consequences of the pressure of population growth.

ii) Climatic theory: This emphasizes that famine is naturally caused by climatic changes, such as by drought, floods, etc.

iii) Economic Theory (Food Availability Decline, Market-failure and Food Entitlement Decline). Food Availability Decline (FAD) states that food shortage or famine occurs when adequate food is not produced in an area. Market- failure to supply food sees that food

insecurity or famine is caused by imperfect markets which fail to supply food to meet the demand for food. Food Entitlement Decline (FED) explains that food insecurity is due to inability of the individuals or households to access food. Unlike, FAD which focuses on supply of food, FED emphasizes access or entitlement to food.

iv) Political Economy and Human Rights Explanations: This considers that food insecurity is due to government's incompetence and lack of commitment.

Although the above mentioned disciplinary-biased set of theories can have some contributions for analyzing the causes of food insecurity, each one of them can't adequately explain all the causes of food insecurity (Devereux, 2001). Thus, studies conducted in favor of either of the above theories might have certain flaws. This is because the root causes of food insecurity are complex, multifaceted and interrelated. Many different factors can affect the dimensions of food security (availability, access, utilization and stability) in various ways; the disruptions of these components may lead to food insecurity. There is no overarching theory that is applicable to all situations of food insecurity (Maxwell, 1996). Therefore, a 'systems' approach is more appropriate to analyze famine and food insecurity (Devereux, 2001).

2.5.2 Some Empirical Evidences Related to the Causes of Food Insecurity and Disparities

Much literature has showed that there are disparities in household food security. For instance, the study conducted by Workneh (2006) in four *woredas* of South Wollo clearly revealed that there were inter-temporal and inter-area (*woreda*) variations in household food security status. A comparative study made by Degefa (1996) showed that there was a difference in food security status between *belg* grower farmers and non-*belg* grower farmers in Munessa *Woreda* of Arssi region. In the case study conducted in Wolaita District of Southern Ethiopia by Dagnew (1995), difference in household coping strategies among different income groups was due to difference in asset ownership, income status and family labor availability. The same study also showed that secondary and marginal economic activities tend to be further diversified as a family survival strategy, as vulnerability of the poor increases. It is well understood that differences in households' vulnerabilities and coping capacities, which are usually determined by the asset base of households will bring about disparities in household food security.

There are empirical evidences that showed that differential access to resources can create disparities in food security. For example, Eshetu (1999), in his study at Lagambo *Woreda* of South Wollo zone of Amhara Region recorded that households with relatively better access to resources, non-farm income, and better coping mechanisms proved to have relatively better food security status than others. Disparity in food security is also observed even at single household level as individuals with different age and gender groups had different levels of food security status (Belaineh, 2002).

There are different factors which affect food security. For instance, a multivariate analysis of determinants of small farm household food security in South Wollo revealed that farm size, oxen, and livestock activities and non- farm income had significant roles in enhancing household food security whereas household size negatively affected food security (Workneh, 2006). In another study, Messay (2001) carried out a multiple regression analysis to find out to what extent the selected variables affect the household's per capita dietary energy supply and farmlands productivity and asserted that possession of farm oxen and livestock, fertilizer application and family size were among the critical factors determining both productivity and the status of the households access to adequate amount of food. The results of the study made by Degefa (2002) in the Oromiya Zone of Amhara Reginal State also confirmed that the size of crop harvest, family size, age of the head, use of irrigation and sex of the head were found to be the major determinants of food availability. Others generally consider widespread poverty and change in weather conditions as the major causes of food insecurity (Dejene, 1991; Yared, 2001). The mismatch between population growth and food production can result in food insecurity (Getachew, 1995).

Other researchers indicated that governments' inappropriate policies and other institutional factors, as well as inability of the governments to adequately guide the development strategies are the principal causes of food insecurity (Getachew, 1995; Messay, 2001). The study at Asossa *woreda* by Yilma (2005) also depicted that family size, age of the household, use of chemical fertilizers, market distance, and off-farm/non-farm income and total farm income were significant determinants of household food security as explanatory factors of food security status.

Some empirical evidences in Ethiopia showed that the major causes for household food insecurity in the country are, among other factors, recurrent drought; diminishing size of landholdings; lack of oxen; limited source of alternative incomes; low level of agricultural technology; pre-and post-harvest loss; limitation of technology; lack of product diversification and market integration; environmental degradation; population pressure; limited access to financial services and policy constraints (FDRE, 2002;Workneh, 2008).

In much of the literature, food security is analyzed either from the supply or availability of food or from the consumption of food energy point of view or from the households' income level aspect. Although these methods of food security analysis help to roughly estimate the status of a household's food security, they do not fully explain the underlying causes of food insecurity. To get the real and better picture of the situation of households' food security, studying and analyzing food security from the livelihood context is important.

2.6 Conceptual Framework for Analyzing Food Security

There are different approaches of food security analysis (FAO, 2008). One of the approaches is analyzing household food security from the livelihood perspective.

The origination of sustainable livelihood as a concept is widely attributed to Robert Chambers at the Institute of Development Studies (IDS) (Solesbury, 2003). Chambers and Conway (1992:7), as cited by Solesbury (2003:5) gave a definition to sustainable livelihood as:

> *A livelihood comprises the capabilities, assets and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base.*

Ellis (2000:10) also defined livelihood as "it comprises the assets (natural, physical, human, financial and social capital), the activities, and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or households."

A sustainable livelihood approach helps to link the analysis of food insecurity with a multi-dimensional and people-centered analysis of poverty (Belaineh, 2002; Devereux, et al, 2004; Degefa, 2005). Swift and Hamilton (2001) also reflected that food security is a complex issue that cannot be well captured by a narrow focus on one or two aspects of household economy,

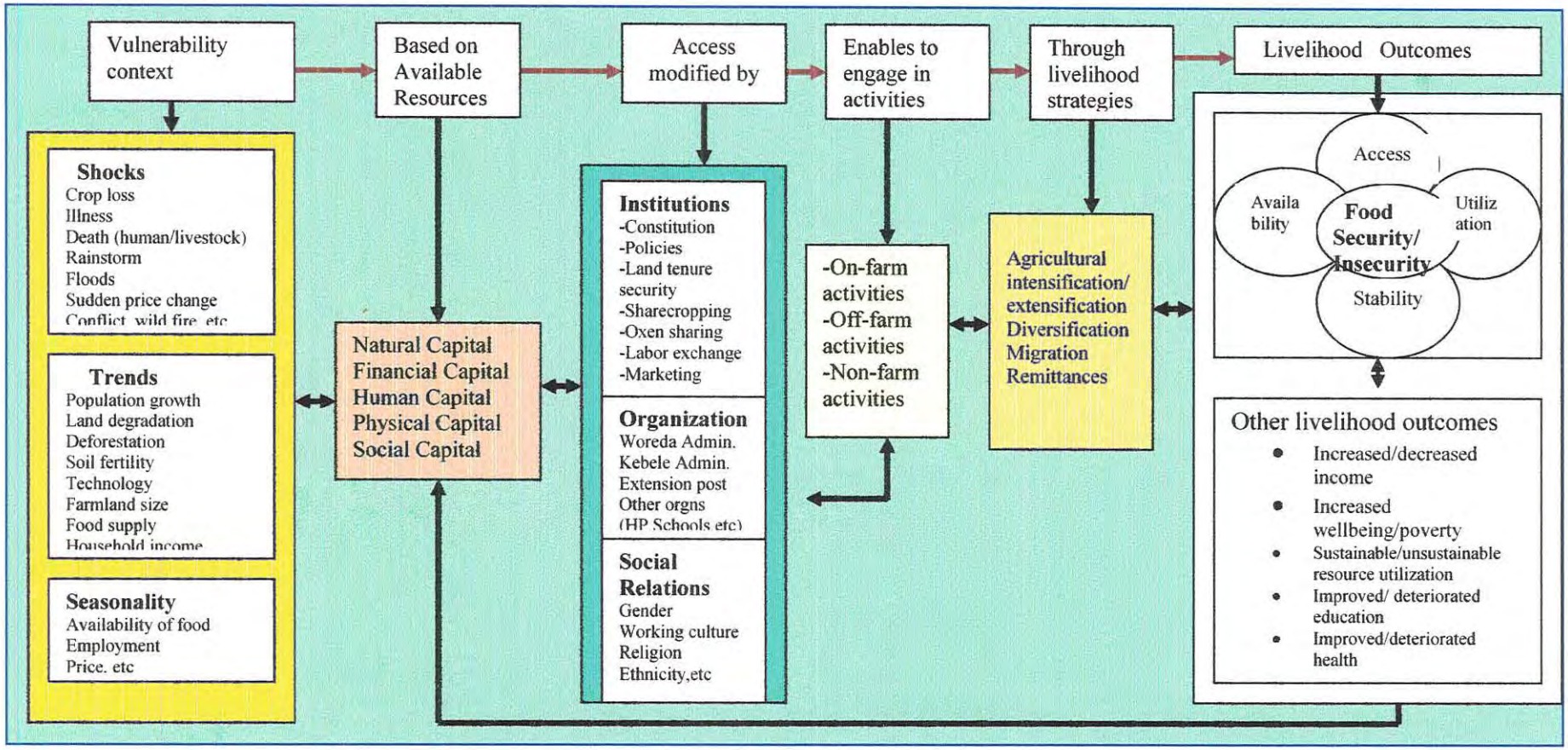
indicating that a broad focus is needed to analyze household food security. Many findings also reflect that the 'food first' approach which emphasizes food as a primary need has to broaden to a livelihood perspective (Maxwell, 1996). Although the 'food first' approach is common in acute emergencies (Young, 1997), a wider assessment of livelihood security is important to analyze the current and future aspects of food insecurity both for the short term and long term intervention plan (Yared, 2001; Fassil, 2006).

In this study, the disparity in household food security is, therefore, analyzed from the livelihood context. A Sustainable Livelihood Framework (SLF) is used as an analytical framework within which to understand the food security/ insecurity situations of the households and thereby assess the disparities in food securities between the households of the indigenous people and resettlers (Figure 1).

Although food security is part of livelihood security, here for analytical purposes, it appears as a separate category in the framework so as to easily understand its linkages with other components of livelihood. As previously discussed, food security has four major components/dimensions: accessibility to food; availability of food; utilization of food and stability of food. Within these components of food security, there are also interplays and interactions.

As shown in the Figure 1, each of the livelihood components will directly or indirectly affect the dimensions of food security (availability, accessibility, utilization and stability). Differential influences of the components of livelihood on the households will result in disparities in household food security. For instance, households' differential access to and control over livelihood assets/capitals have greater implications for disparities in food security status. Assets are considered as the basic building blocks upon which households depend on for survival (Ellis, 2000). Although different authors classified assets/capitals in different ways, livelihood assets are categorized into natural capital (land, water, forests and other natural resources), human capital (labor power, education status, skills and knowledge, and health), social capital (social trust, norms, networks, kinships, group memberships, social relations, etc) financial capital (livestock, savings, access to credit, income in cash form, etc.) and physical capital (houses, production equipment or tools, machines, etc.) (Ellis, 2000). Access to and control over these livelihood assets/ capital has many influences on livelihoods in general and food security in particular. Those that have better access to and control over these assets will have more options to increase entitlement to food (Debebe, 1995).

Figure 1 Sustainable Livelihood Framework for Analyzing Food Security/Insecurity.



Source: Adapted from Scoones (1998), Ellis (2000), and Degefa (2005)

Livelihood activities also have impacts on households' food security status. Households who are engaged in different income generating activities may have differential access to food. For instance, those who are not successful in generating enough income or those who are not able to produce enough food crops are more likely to be food insecure. Livelihood activities are those activities that households undertake to earn income for survival. Livelihood activities include on-farm activities (crop production and livestock keeping), off-farm activities (participating in agricultural activities on others' farms e.g. as a wage laborer on others' farms) and non-farm activities (petty trading, selling wood/charcoal, handicrafts, etc). There are also interactions and interplays between assets and livelihood activities and strategies. Those with more assets tend to have a greater range of options to secure their livelihoods (DFID, 1999). Thus, the households' food security status also depends on the livelihood strategies that the households follow to live.

Livelihood strategies are the ways by which people combine and use their assets to make a living (Ellis, 2000). Livelihood strategies are often based on a set of assets available and accessible to households. In SLF, livelihood strategies of rural households can be broadly classified into agriculture intensification/ extensification, livelihood diversification, migration and living through transfer/ remittances (Scoones, 1998, cited in Ellis, 2000). But others categorize livelihood strategies differently based on different criteria. For instance, Davies (1993), cited in Behera (2006) has classified livelihood strategies into coping and adaptive strategies. Coping strategies are short term responses to unusual adverse livelihood stress to a specific shock, where as adaptive strategy is a long-term change in behavior patterns as a result of a shock or stress in an attempt to build asset bases.

As illustrated in figure 1, institutions, organizations and social relations mediate the translation of assets into livelihood strategies (Ellis, 2000). Institutions (the formal rules, conventions, constitution, laws, the land tenure system, and informal institutions); organizations (groups of individuals bound by some common purpose to achieve objectives i.e, government agencies, NGOs, Farmers' Association); and social relations (the social positions of individuals an households within a society i.e, gender, class, age, ethnicity and religion) affect the households in various ways. Access to and influences of policies, other institutions and organizational

arrangements on households will have impacts on food security. Social networks and social institutions and organizations also play a crucial role on household food security (WoldeSilassie, 2001).

The vulnerability context (differential exposure to shocks, trends and seasonality as well as coping abilities to these) also has effects on households' food security status which can be expressed in many ways. Vulnerability refers to the full range of exogenous factors that can impact on people's livelihoods. Vulnerability context includes risks (shocks and trends) and seasonality. Risks are natural or man-made phenomena that may cause physical damage, economic loss and threaten human life and wellbeing. There are two main types of risks that may trigger changes in levels of household food security: shocks and trends or stresses (World Bank, 2008). Shocks are irregular, unpredictable risks that may affect individuals, households or communities. e.g., drought, floods, human illness, disease outbreak, death of livestock, fire, war, crop pests, inflation, sudden devaluation, etc. Trends or stresses include population growth, land degradation, deforestation, soil fertility decline, etc. Risks can also be divided into: co-variant risks, that affect many people simultaneously (e.g. droughts, earthquake or war); and idiosyncratic risks that affects individual households (e.g. crime, unemployment or sickness) (World Bank, 2008).

Those households who have access to resources will have more options, and are more resilient to shocks and risks. Resilience varies from one social group to the other, and is determined by assets that the individual possesses (Ali, 2008). The individual's capacity to manage risks and trends will have impacts on its food security status. The food security status and coping strategies in turn will have effects on households' capabilities to cope with shocks and trends.

The food security of the household is also affected by other livelihood outcomes. Livelihoods outcomes can be either desirable or undesirable (Degefa, 2005). The households' choice or priority to achieve the livelihood outcome will have effects on food security (one of the livelihood outcomes). In general, to explain the underlying causes and disparities between the two groups of households, it is important to thoroughly understand their livelihoods.

2.7 Summary

As this chapter has reviewed, food security is a dynamic concept that has developed and grown over time. The recent and most widely accepted definition of food security is that it is a situation that exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Availability of food, access to food, utilization of food by the body and stability of these three, are considered to be the four pillars of food security. Disruptions of any of the four components may lead to food insecurity. Food insecurity can be chronic or transitory. Households have different mechanisms to cope with food insecurity. The chapter has also examined the evolution of thinking about food security as consisting of three paradigm shifts: from the global and national to the household and individual; from food first to livelihood perspective; and from objective indicators to subjective perceptions.

The chapter has looked at some global and national efforts made to assuage food insecurity problem. Despite such efforts, food insecurity problem remains a challenge. Reviewing some theoretical explanations and empirical observations related to the causes of food insecurity and disparities in food security has also been the main emphasis of this chapter. From carrying out this review, the research gap has been identified owing to the following reasons: (1) the existing theories related to the causes of food insecurity, such as Neo-Malthusian Theory, climatic Theory, Economic Theory and Political theory are disciplinary-biased which fail to see that food insecurity is caused by very complex factors; (2) the majority of the previous research works that have been undertaken in Ethiopia do not give due attention to the implications of differential livelihood contexts for disparities in food security among the communities or households; and (3) most of the food security/insecurity measurements that have been used so far do not capture households' direct experiences of food insecurity. Thus, to fill such research gap, there is a need to thoroughly understand the livelihood contexts of the households as implications for food security disparities so as to devise locally specific interventions for sustainable food security.

CHAPTER THREE
THE STUDY AREA AND METHODOLOGY

3.1 Introduction

This chapter provides some background information about the study area. It also presents the research methodology, starting from research design and sampling technique to methods of data analysis.

3.2 The Study Area

3.2.1 Setting of Benishangul- Gumuz Region

Benishangul Gumuz regional state is one of the regions that constitute the Federal Government of Ethiopia. The region is located in the western part of the country between 09^0 35' - 11^0 39' North latitude and 34^0 20' - 36^0 10' East longitude. The region has an international boundary with Sudan in the west, and is bordered by the Amhara Region in the north and northeast, Oromia Region in east and southeast. The regional capital, Asossa, is located at a distance of 659 km west of Addis Ababa.

The region comprises of three administrative zones, namely Asossa, Kamashi and Metekel, within which there are 20 *woredas*. The region has altitudes ranging from 580 to 2,731 meters above sea level.

According to the population and housing census of Ethiopia of 2007, the total population of the region was estimated to be 670,847 (340,378 male and 330,469 female), of which 85.4% of them reside in rural areas. The population of the region consists of diverse ethnic groups, five of which are indigenous. The indigenous ethnic groups in their order of population number are Berta (25.90%), Gumuz (21.11%), Shinasha (7.59%), Mao (1.9%) and Komo (0.6%). Non-indigenous ethnic groups include Amhara (21.25%), Oromo (13.32%) and others (8.33%).

Significant numbers of resettlers are living in the region. These resettled people were brought to the region from various parts of the country as a result of the national resettlement program conducted during the *Derg* regime. They resettled in three *woredas* of the region: Asossa, Bambassi and Pawi. The indigenous people or natives account for 57.1 % of the total population whereas the non – indigenous people account for 42.9 % of the total population of the region. On average, the regional household size is 4.5(3.6 in urban and 4.7 in rural) (CSA, 2007).

Agro-ecologically, the region is divided into three climatic zones: *kola* 75%, *woina dega* 24 % and *dega 1%.* Annual rainfall ranges from 860mm to 1350 mm. The temperature reaches a daily maximum of 20^0C to 25^0C in the rainy season and rises to 35^0C to 40^0C in the dry season. The region is characterized by a mono-modal rainfall. The region gets rain from April to October. Pertaining to the economic activities, the region is largely dominated by traditional subsistence agriculture.

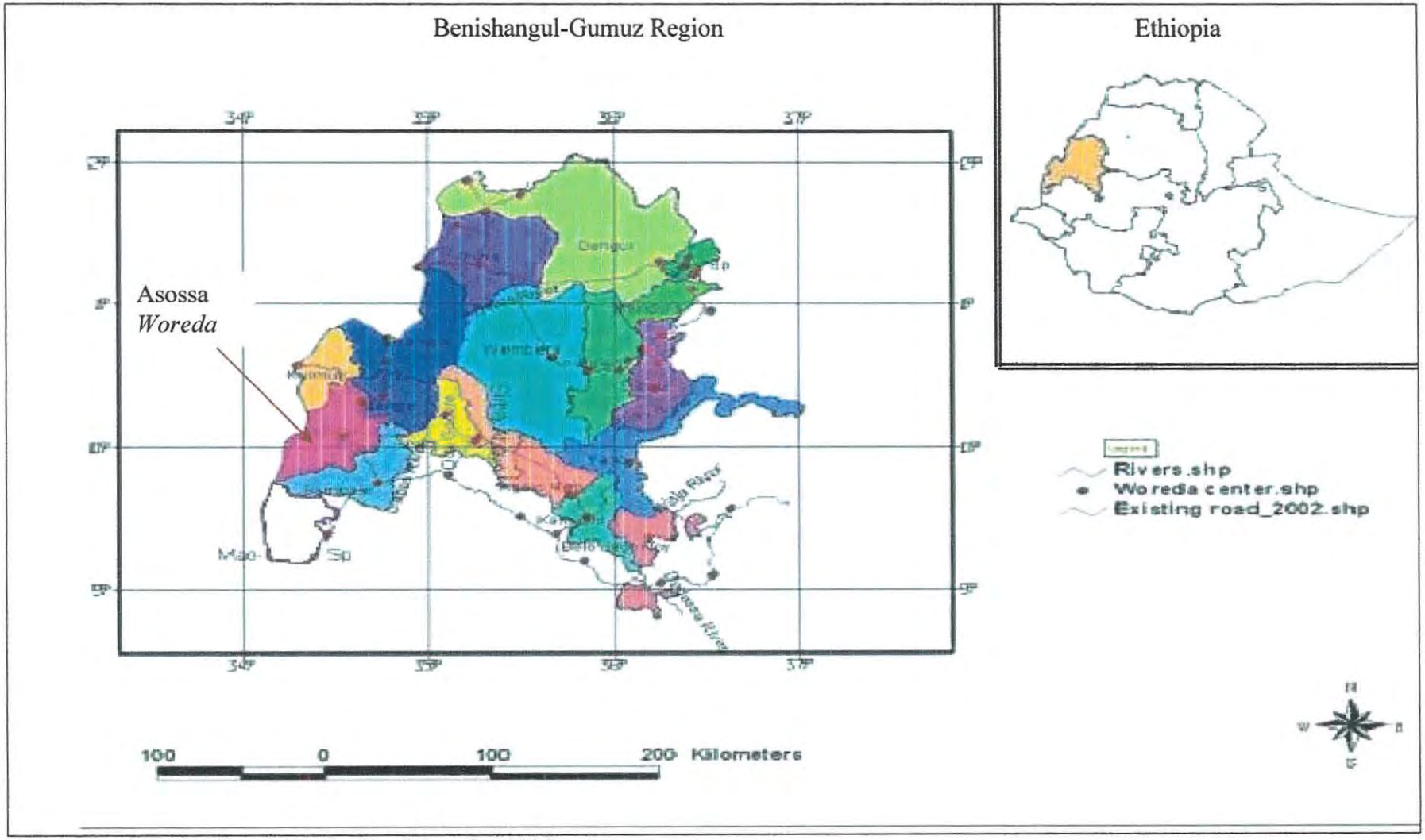
3.2.2 Description of Asossa *Woreda*

i) Location and Area

Asossa *woreda* is one of the *woredas* of Asossa Zone situated in Benishangul-Gumuz Region.

Asossa *woreda* is found between $34^0$12'32" N and 10^0 35'45" E. Asossa is bordered by Bambassi *woreda* in the South ; Oda Bildigilu *woreda* in the west; Homosha *Woreda* in north; Menge *Woreda* in northeast; Kurmuk *woreda* in the northwest; and Sudan in the west. The elevation of the *woreda* ranges from 500 to 1560 meter above sea level. Geomorphologically, Asossa w*oreda* is by and large made up of plains.

Figure 2. Location of Asossa *Woreda* in Benishangul-Gumuz Region



Source: Benishangul-Gumuz Region Food Security, 2004

ii) Population and Settlement Pattern

Both the indigenous or natives and non-indigenous people are living in the *woreda*. Resettlers, which are of the Amhara ethnic group, predominantly live in the central part of the *woreda* around Asossa town. Asossa resettlement established in 1979 as part of the nationwide effort which was conducted in response to the droughts occurred in other parts of Ethiopia, particularly in wollo area (Jemal, 1996). The settlement pattern of the indigenous people are scattered while that of resettled people are densely populated.

Based on the Population and Housing Census of Ethiopia in 2007, the total population of Asossa *woreda* was estimated to be 87,366 (44,176 male and 43,190 female), about 74% of them reside in rural areas (CSA, 2007). The total area of the *woreda* is 2317 km^2 and, therefore, the *woreda* has a population density of about 37.7 persons per km^2.

Asossa *woreda* comprises of 78 *kebeles* (74 rural and 4 urban). The 39 rural *kebeles* are inhabited by resettlers, and the rest 35 rural *kebeles* are inhabited by the indigenous people. Based on the projection of the 1994 Population and Housing Census, as cited by Dagnachew (2004), there were 43,811 or 61% resettlers and 27,316 or 39 % native people in the *woreda*.

iii) Agro-ecology, Climate and Vegetation

The climate is characterized by humid hot weather having distinct dry and wet seasons. The temperature ranges from 14^0c to 39^0 c. The average temperature is 27^0 c. The rain fall pattern is mono-modal, and the area usually gets rain starting in May and ending in October. The average annual rain fall is more than 1200 mm. Generally, the climate of Asossa *woreda* is suitable for annual and perennial crops. The area has good vegetation cover. It is dominated with tropical bamboo forest, acacia and other trees; tall grasses, bushes and shrubs.

iv) Soil Condition, Land Use Pattern and Farming System

Sandy soil predominates in Asossa *woreda*. It accounts for 60 % of the soil type. Clay soil represents 30%. The remaining 10% of soil is other types of soil. The texture of soil can vary from course to heavy clay, which is fertile, and suitable for crop production of various perennial and annual crops. According to Asossa WARDO, the vast majority of land (about 44.4 %) could

potentially be used for farmland, i.e cultivable land. 12.93 % of the land is covered with forests and bushes and 10.31 % used as grazing land. It is only 26.32 % of the total land that has so far been used for farming (cultivated land). The rest 6.3 % is not arable land (unsuitable for farming).

The majority of the people of the *woreda* depend on subsistent agriculture. The farming system is characterized by traditional and underdeveloped production technology. The current yield of crops seems to decline. As shown in the Table 3.1, compared to 2006/07 crop production, the total production of crops in 2007/08 has increased. This increase in production may be mainly attributed to land expansion. However, the yield of crops (production per unit of land), particularly the yield of cereals, has decreased. Livestock raising is also another agricultural activity.

Table 3.1 Crop production and yield of 2006/08 and 2007/08, Asossa *Woreda*

	2006/07 (a)			2007/08 (b)			Difference (b-a)		
Type of crop	Cultivated Land (ha)	Production (Qt)	yield (Qt/ha)	Cultivated land (ha)	Production (Qt)	yield (Qt/ha)	Cultivated Land (ha)	Production (Qt.)	Yield (Qt/ha)
Maize	4096	49152	12.0	5200	51345	9.9	1104	2193	-2.1
Sorghum	8500	68000	8.0	10200	78330	7.7	1700	10330	-0.3
Millet	1200	6000	5.0	2000	9442.5	4.7	800	3442.5	-0.3
Teff	3500	6450	1.8	3040	8320	2.7	-460	1870	0.9
Chick peas	50	150	3.0	83	332	4.0	33	182	1.0
Haricot bean	12.2	36	3.0	1866	7296	3.9	1854	7260	1.0
Soya Bean	NA	NA	NA	1040	4185	4.0	-	-	-
Sesame	420	840	2.0	604	3020	5.0	184	2180	3.0
Niger seed	3380.5	10142	3.0	4396	12888	2.9	1016	2746.5	-0.1
Linseed	24.05	120.25	5.0	66.5	333.75	5.0	42.45	213.5	0.0
Ground nut	800	12000	15.0	1200	17437.5	14.5	400	5437.5	-0.5

NA= Data Not Available

Source: Computed by the author on the basis of raw data obtained from Asossa WARDO, 2009

v) Infrastructure

The transport and communication facilities of Asossa *woreda* are poor. There is no all-weather road except the main gravel road that connects Asossa with Sudan. Rural road networks are poor; access is possible only with dry weather roads in most *kebeles*. The coverage of social

service facilities of Asossa *woreda* is relatively better than that of other *woredas* of the region. In the *woreda*, there are 34 primary schools, 5 secondary schools, 30 health posts, 3 health centers and one zonal hospital.

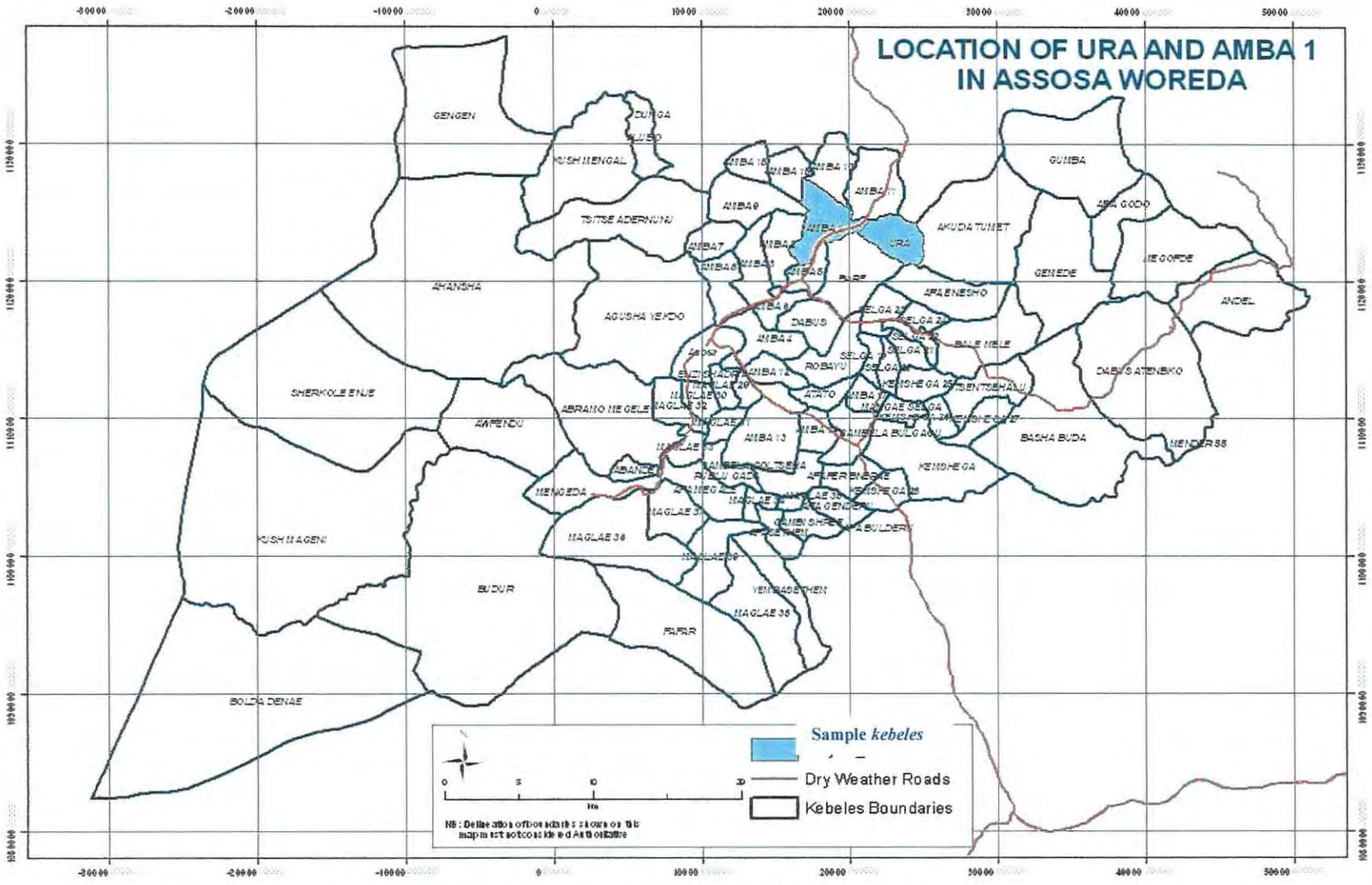
3.2.3 Sample *Kebeles*

For this study, two contiguous rural *kebeles* (Amba 1 and Ura) were purposely selected to study the food disparities in food security status between the indigenous people and resettlers. Amba 1 *kebele* is one of the *kebeles* where resettlers reside, whereas Ura *kebele* is inhabited by the indigenous people (Berta ethnic group). The two *kebeles* are located north of Asossa town. Amba 1 *kebele* is situated along the main Asossa- Sudan road, about 18 kms away from Asossa town, whereas Ura *kebele* is found easterly to Amba 1 *kebele*, 25 kms away from Asossa town and 7 kms from Amba 1 *kebele*.

Amba 1 *kebele* is bordered by Amba 10 and Amba 11 *kebeles* in the north; by Amba 9 and Amba 2 in the west; by Ura in the East; and by Amba 5 in the south. It has a total population size of 1,471 and a total household size of 363 (Asossa WARDO, unpublished data). The *kebele* has five *gotts* (sub-*kebeles*). In Amba 1, there is one primary school, one health post, one extension post, and a veterinary center. Amba 1 *kebele* is located along the main road. There is no local market in this *kebele*.

Ura *kebele* is one of the sample *kebele* located at the eastern side of Amba 1 *kebele*. The *kebele* is bordered by Akuda Tumet and Afa Enesho *kebeles*, in the East; by Baro *kebele* in the southwest; and by Amba 11 *kebele* in the north. Ura *kebele* has a total population size of 1,684, and a household size of 343 (Asossa WARDO, unpublished data). The *kebele* has five *gotts*. In the *kebele*, there is one primary and one secondary school, one health post, and one extension post. Unlike Amba 1, Ura *kebele* has no veterinary center. There is a local market in Ura *kebele*.

Figure 3. Relative Location of Sample *Kebeles* in Asossa *Woreda*



Source: Benishangul-Gumuz Region Bureau of Finance and Economic Development, 2009

3.3 Research Methodology

3.3.1 Research Design and Sampling Techniques

The research design used in this study was a cross-sectional survey, employing both qualitative and quantitative approaches.

Assosa *woreda* was purposely selected for this study for the following reasons:

- It is the *woreda* where both the indigenous people and resttlers live, which are the targets of the study.
- It is the most populous of the *woredas* of the region.
- Accessibility. i.e., from the point view of time and resources available.
- The researcher's familiarity with the *woreda*.

Owing to time and financial constraints, two contiguous rural *kebeles* from Asossa *woreda* were selected purposely in consultation with the Asossa *woreda* Administration and Asossa WARDO, taking into account the population size and accessibility. The two rural *kebeles* selected were Ura (inhabited by indigenous people) and Amba 1 (inhabited by resettlers). Among the accessible rural *kebeles*, these two *kebeles* have a relatively large population size.

Lists of household heads were obtained from the respective *Kebele* Administration Office which served as sampling frame. To represent more households, 15% of the households from the lists of households from each *kebele* and *its gotts* (sub-kebeles) were proportionately selected using systematic random sampling method. Accordingly, 51 and 54 households were selected from Ura and Amba *1*, respectively. Thus, a sample size of 105 households was considered.

Table 3.2 Distribution of Sample Households by K*ebeles* and *Gotts*

Sample *Kebele*	*Total population*	*Gott*	Total HH size	Sampled HH
Ura	1,684	01	102	15
		02	66	10
		03	47	7
		04	58	9
		05	70	10
Ura-Total	**1,684**		**343**	**51**
Amba 1	1,471	01	63	9
		02	61	9
		03	65	10
		04	81	12
		05	93	14
Amba 1-Total	**1,471**		**363**	**54**

3.3.2 Methods of Data Generation

Both primary and secondary sources were used to generate qualitative and quantitative data.

i) **Secondary Data**

Various documents (published and unpublished) were reviewed to collect secondary data. In addition, different websites were browsed to obtain secondary data and ideas related to the issues under investigation.

ii) **Primary Data**

Primary data were collected through structured Household Survey Questionnaire; Key Informants Interview; Focus Group Discussions (FGDs); Direct Observation and Informal Conversations.

a) Household Survey Questionnaire

A questionnaire, comprising of household demographic characteristics, livelihood assets, livelihood activities and strategies, and vulnerability context, and other issues related to food security (availability, access, stability, and utilization), was developed in order to collect both quantitative and qualitative data (See Appendix A). Before undertaking the fieldwork for data collection, the first draft household survey questionnaire was developed in English and Amharic, and submitted to the research advisor for comments and suggestions. Based on the feedback, some improvements/revisions were accordingly made. Some questions included in the household survey were also localized or contextualized to the study *kebeles*' contexts in consultation with two experts from Asossa WARDO (Food Security Expert and Agricultural Extension Expert were consulted).

The Household Food Insecurity Access Scale (HFIAS) questionnaire containing nine standardized generic questions developed by Food and Nutrition Technical Assistance (FANTA) project (Coates, *et al.*, 2007) was also added as one component of the questionnaire to collect data related to the households' actual experiences of food insecurity (See Appendix B). The FANTA Project supports integrated food security and nutrition programming to improve the health and wellbeing of humans. FANTA is a Cooperative Agreement managed by the Academy for Educational Development and funded by USAID. HFIAS tool is composed of

nine generic questions which were asked with a recall period of four weeks prior to the survey time. Each question has two types of questions: an occurrence question (responded either 'affirmatively' or 'negatively'), and a frequency-of-occurrence question for affirmative response (responded either rarely, sometimes, or often). HFIAS questions capture qualitative data of household's direct experience of food insecurity or household's perception about food security/ insecurity. The HFIAS standardized questionnaire was adapted to the local context, though the questions in the model questionnaire should be worded to be as universally relevant as possible. This tool was used to determine the prevalence and severity of the households' food insecurity.

The actual fieldwork for the household survey was undertaken during the months of January and February, 2009. As the majority of household heads were expected to be illiterate, four assistant data collectors/ enumerators were recruited and were given two days orientation training on how to administer data collection. They were assigned to ask questions to the sample household heads face- to-face and filled the responses on the questionnaire. Two teachers from Ura Primary School, and two teachers from Amba 1 Primary School respectively from Ura and Amba 1 *kebeles* were used to collect data. These data collectors were purposely selected due to the fact that they know very well their respective *kebele* (the livelihood, language and culture of the people). Data collectors selected from Ura primary school themselves belong to indigenous people, and data collectors selected from Amba 1 also belong to resettled people. All the four data collectors had diploma level education. The chair persons of both *kebele* were very cooperative, and they facilitated the household survey by assigning one individual from each *gott* who were going to help data collectors by locating and showing the houses of the sample households. In order to follow up and monitor the household survey, supervision work was also done by the researcher himself.

b) Focus Group Discussions (FGDs)

Four FGDs were conducted to get some qualitative information and to triangulate the data obtained through the household survey questionnaire. For FGDs, discussion guides were developed in advance (See Appendix C).

Two FGDs for the indigenous people (one group for men and another group for women); and two FGDs for resettlers (one group for men and the other for women) were held at the respective *kebeles*. In each sample *kebele*, the men group consisted of seven participants (from among male model farmers, community elders, Development Agents and poor farmers); and the women group consisted of five participants (female-headed household represntatives, and women with children). The FGDs for women were arranged from the point of view of the key roles women have in household food security, The FGDs of the men and women group were conducted separately at each rural *kebele*. During FGDs for the men's group, great care was taken so that all the participants freely participate, and some are not allowed to dominate the discussions. During FGD for the indigenous women's group, as some women do not speak Amharic, a female language translator was employed to work with the researcher. In indigenous men's group, there was no problem, as they were all able to communicate in Amharic.

c) Key Informant Interview

Key informant interviews were conducted in order to gain more knowledge and information on households' livelihoods and food security issues. These included Agriculture Development Agents (one from each sample *kebele*), food security expert from Asossa WARDO, chairpersons of the sample *kebeles*, and food security expert from World Vision Ethiopia (Asossa-Homosha Area Development Project Office). A total of six key informants were interviewed.

The interviews were mainly on the general assessments / perceptions of these target respondents about the disparities in food security between the two study groups, the possible causes of the disparities, the situation of households' access to and influence by institutions, organizations and social relations, and the possible solutions to be implemented by the stakeholders to ensure equity in food security among different groups of households. Interview guide was developed before hand (See Appendix D).

d) Direct Observations

To have a real picture of the issues to be investigated, some observations were made by the researcher. This includes: direct observation of the physical appearance of different things

related to the study, such as some household assets and observing the different activities that the households perform.

3.3.3 Method of Data Analysis

Data collected using qualitative approach were categorized into research themes, coded and analyzed qualitatively through texts or narrations and triangulations, and quantitative data collected from the household survey were entered into a computer and analyzed by SPSS (Statistical Package for Social Scientists) version 15.0. For quantitative data analysis, cross-tabulation, descriptive statistics, such as frequency distribution, percentages, mean, standard deviation, were used.

This study applied the Household Food Insecurity Access Scale (HFIAS) to measure the household's own perceptions. It is mainly used to assess the households' food security status and the disparities of the study group from the households' actual experiences of food insecurity. This tool is used to estimate the prevalence and severity of household food insecurity. It assesses whether households have experienced problems in food access. As food security is a complex issue, it is practically difficult to measure the status by one indicator/tool, such as HFIAS. Therefore, a mix of different proxy indictors (food self sufficiency, dietary diversity, meal frequency, and coping strategy index) were also used in assessing the disparities in food security status. To see the disparities between the indigenous people and resettlers, two independent samples t-test was widely used to compare the two groups in some variables, and to assess whether there is statistically significant difference in continuous variables. Where relevant, one way ANOVA and the chi-square test were also used to check whether there are significant differences between the two groups of households in terms of some variables. For some of the qualitative data that couldn't be directly measured in quantitative terms, scaling/ scoring techniques, such as weighted mean score were used so as to easily compare the two groups of households in terms of some variables.

3.4 Summary

Asosssa *woreda* of Benishangul-Gumuz region is the *woreda* that was purposely selected as the study area. Asossa *woreda* was selected for this study owing to the following four reasons: (1) it is the *woreda* where both the indigenous people and resettlers predominantly live; (2) the

woreda is the most populous of the *woredas* of Benishangul-Gumuz Region; (3) the researcher's familiarity with the *woreda;* and (4) from the point of view of time and resources available, the *woreda* is easily accessible. Because of time and resource constraints, two contiguous rural *kebeles* (*Ura kebele* inhabited by the indigenous people (Berta) and *Amba 1 kebele* inhabited by resettlers) were purposively selected taking into account the population size and accessibility.

In this study, a cross-sectional survey, employing both qualitative and quantitative approaches was used, and a total of 105 sample households proportionately 51 and 54 sample households were selected, respectively from Ura and Amba 1 using systematic random sampling technique. Primary data was generated through a structured household survey questionnaire, FGDs, Key informant interviews and direct observations. The Household Food Insecurity Access Scale (HFIAS) developed by the FANTA project was used as a measurement tool for food insecurity. To complement the HFIAS, households' food self sufficiency status, household dietary diversity, meal frequency and coping strategies index were also used to assess the status of food security.

Both qualitative and quantitative data analysis techniques were used in this study. For the quantitative data, descriptive statistics, such as frequency, mean, standard deviation and cross-tabulations were widely used. For some quantitative and continuous variables, two independent samples t-test was usually used to compare the means and test whether there was statistically significant difference between the two groups of sample households (indigenous people and resettlers).

CHAPTER FOUR

DEMOGRAPHIC AND SOCIO-ECONOMIC CHARACTERISTICS OF SAMPLED HOUSEHOLDS

4.1 Introduction

Households are not homogenous entities in terms of demographic and socio-economic characteristics. There are many variations among the dynamics of households. Understanding these variations is important to explore the disparities in food security among households. This is because the demographic and socio-economic characteristics of households have direct and indirect impacts on households' food security. This chapter is therefore devoted to describe the demographic and socio-economic profiles of sample households.

4.2 Demographic and Socio-Economic Profiles of Sample Households

4.2.1 Sex and Age Distribution

Many empirical studies have shown that the sex and age of the household heads do have influences on households' livelihood status in general and food security in particular. As revealed by many literatures, female-headed households and women in general are more likely to be vulnerable to poverty and are particularly susceptible to food insecurity than their male counterparts. The reason for this is mostly related to gender discrimination which makes women having less or no roles in decision making in terms of access to and control over resources within a household. Several literatures also showed that the age of the household is also considered as one factor in affecting the food status of households.

As indicated in Table 4.1, out of the total 105 households surveyed, 84(80%) were male-headed households, and 21 (20%) were female-headed households. When the sample households were disaggregated by sample *kebele*s, the percentage distributions of male-headed households in Ura and Amba 1 *kebeles* were 90.2% and 70.4 %, respectively. The rest 9.8 % and 29.6% of the households of the respective *kebeles* were female-headed households. Thus, the number of female-headed households in Amba 1 *Kebele* was relatively higher than that of Ura *kebele*.

With regard to age, the majority of the household heads were in working age group. The mean age of the respondents was 49.2 years of old (46.4 years for the indigenous people and 51.9 years for the resettled people). The age group of the respondents ranges from 20 to 98 years. Of the total households surveyed, 71.4 % were households having age group ranging from 20 to 59 years, and the rest 28.6 % of were above 59 years of old. The percentage distribution of households with older age groups (greater than 59 years) in Amba 1 was relatively greater than that of Ura *kebele*. Thus, having larger number of female-headed households and older aged household heads may imply that more vulnerable households exist in Amba 1 than in Ura *kebele*. Older aged household heads whose age is greater than 59 years are considered as economically dependent groups. Female household heads are also generally distinguished as more food insecure than the male household heads (Maxwell, 1989; cited in Shepherd, 1991).

4.2.2 Ethnic Composition

All the sample household heads of Amba 1 *kebele* belonged to Amhara ethnic group, while household heads of Ura *Kebele* all belonged to Berta ethnic group. As the two rural *kebeles* were purposely selected to represent places where either the indigenous people or the resettlers are living, Amba 1 *Kebele* was taken to represent resettlers / Amhara people who came from Wollo, and Ura *Kebele* was taken to represent the indigenous people/ Berta/. Thus, each sample *kebele* is homogenous in terms of ethnic composition.

4.2.3 Religion

Out of the 105 sample household heads, 68.6 % were Muslims, and the rest 31.4 % were Orthodox Christians. When this was disaggregated to the sample *kebeles*, inhabitants of Ura *Kebele* were all Muslims, where as in Amba 1 *Kebele,* the percentage of Muslims and Orthodox Christians were 38.9% and 61.1% respectively.

4.2.4 Marital Status

Of the total sample household heads, 70.5 % were married; 16.2 % of the household heads were single/unmarried, and the rest 10.5% and 2.8% were widowed and divorced respectively. There were relatively more widowed household heads among households of resettlers (18.5%) than that found among households of the indigenous people (2.0 %). The majority of widowed

and divorced household heads were female-headed household heads. Widowed and divorced households are usually more vulnerable to food insecurity.

4.2.5 Household Size/Family Size

In rural society where the livelihood activities are mainly of agricultural activities, household members are the main labor force to the family. But when the number of household size/ family size becomes too large, it becomes a burden for the household to feed them. On the other hand, family size can be considered as an opportunity serving as a labor force for the family. Therefore, the effect of household size on household food security should be seen from the general context of the household.

The survey result showed that the mean family size of the sample households was 5.8 per household (7.4 for indigenous and 4.3 for resettleres). The mean family size of sample households of the indigenous people was significantly greater than the family size of sample resettlers. The average household size of the indigenous people was also by far greater than the average rural household size of Benishangul-Gumuz Region (4.7) and that of Ethiopia (4.9) (CSA,2007). The existence of this large family size of the indigenous people can be attributed, among other reasons, to the extended family system which can be related to their communal way of life.

4.2.6 Educational Profile

As revealed by many empirical observations, the education status of household heads is strongly and positively associated with food security. It is, therefore, good to look at the education profile of the households so as to see its implications for food security.

In this survey, out of the total sample household heads, 38.1 % attended primary education, 31.4 % were illiterate (can't read and write), 24.8 % could read and write only (acquired this low level of education either informally or non-formally) and the rest 5.7 % attended secondary education from grades 9-10. In general, about 68.6% of the sample household heads were literate. The percentage of literate household heads of resettlers was some what greater than that of the indigenous people. When the data was disaggregated by sex (*Table not reported*), out of 5 female-headed households of the indigenous people 4 of them (80%) were illiterates, where as out of 16 female-headed households of resettlers, 9 of them (56.3%) were

illiterates. This indicates how the indigenous households, particularly the women, are disadvantaged in getting at least basic education.

Table 4.1 Summary of Demographic Characteristics of Household Heads

Demographic Characteristics	Category	Indigenous (N=51)		Resettler (N=54)		Total (N=105)	
		No.	%	No.	%	No.	%
Sex	Male-headed	46	90.2	38	70.4	84	80
	Female-headed	5	9.8	16	29.6	21	20
Age in years	< 25	2	3.9	0	0.0	2	1.9
	25-29	7	13.7	1	1.9	8	7.6
	30-34	5	9.8	7	13.0	12	11.4
	35-39	4	7.8	8	14.8	12	11.4
	40-44	6	11.8	4	7.4	10	9.5
	45-49	3	5.9	3	5.6	6	5.7
	50-54	6	11.8	7	13.0	13	12.4
	55-59	7	13.7	5	9.3	12	11.4
	> 59	11	21.6	19	35.2	30	28.6
	Min.	20		25		20	
	Max	80		98		98	
	Mean*	46.4 (15.9)		51.9 (16.7)		49.2 (16.5)	
Ethnicity	Berta	51	100	0	0	51	48.6
	Amhara	0	0	54	100	54	51.4
Religion	Muslim	51	100	21	38.9	72	68.6
	Orthodox	0	0	33	61.1	33	31.4
Marital status	Single	11	21.6	6	11.1	17	16.2
	Married	38	74.5	36	66.7	74	70.5
	Divorced	1	2.0	2	3.7	3	2.9
	Widowed	1	2.0	10	18.5	11	10.5
	0	1	2.0	0	0.0	1	1.0
	1-2	8	15.7	10	18.5	18	17.1
	3-4	7	13.7	21	38.9	28	26.7
	5-6	7	13.7	15	27.8	22	21.0
	7-8	8	15.7	7	13.0	15	14.3
	9-10	9	17.6	1	1.9	10	9.5
	> 10	11	21.6	0	0.0	11	10.5
	Min.	0		1		0	
Household size (in number)	Max	26		9		26	
	Mean*	7.4 (5.1)		4.2 (1.9)		5.8 (4.1)	
Education status	Illiterate	17	33.3	16	29.6	33	31.4
	Read and write	5	9.8	21	38.9	26	24.8
	Grade 1-4	15	29.4	2	3.7	17	16.2
	Grades 5-8	13	25.5	10	18.5	23	21.9
	Grades 9-10	1	2.0	5	9.3	6	5.7

* Figures in parenthesis next to the mean values are standard deviations.

Source: Household Survey, 2009.

4.2.7 Relative Wealth as Perceived by the Household Heads

Households have their own criteria and priorities to categorize their own wealth status in relation to that of other households in the community. Although the manner in which households classify themselves into one of the wealth category may differ from one community to another and from one household to another within the one community, it has something to imply for understanding the food security status of the households. Thus, sample households were asked to categorize his/her household's wealth status to any of the three well-being categories (rich, medium or poor). Based on the household survey result, 47.6% of the total sample household heads categorized themselves as medium in their relative wealth status, and 41.9% were poor. Only 10.5% were classified as rich. Female-headed households were relatively poorer than their male counterparts.

Table 4.2 Distribution of Households by Perceived Relative Wealth Status

Sample *kebele*	Sex	Proportion of relative wealth of households as perceived by the household head (%)			Total (%)
		Reach	Medium	Poor	
Ura (Indigenous)	Male	13.7	41.2	35.3	90.2
	Female	0.0	2.0	7.8	9.8
	Total	13.7	43.1	43.1	100.0
Amba 1 (Resettlers)	Male	7.4	40.7	22.2	70.4
	Female	0.0	11.1	18.5	29.6
	Total	7.4	51.9	40.7	100.0
Both Kebeles	Male	10.5	40.9	28.6	80.0
	Female	0.0	6.7	13.3	20.0
	Total	10.5	47.6	41.9	100.0

Source: Household Survey, 2009.

4.3 Summary

In both groups of households (indigenous and resettlers), the majority of sample household heads were males (80%); economically in active age groups (71.4%); married (70.5%); literates (68.6%); and categorized their own wealth status as medium (47.6%). However, a close look at of the demographic profiles revealed some variations between the two groups of sample households. For instance, the percentage of female-headed households was greater among

resettlers than that found among the indigenous people. The mean age of sample household heads of resettlers (51.9) was also greater than that of the indigenous people (46.4). Relatively greater number of over-aged economically dependent household heads was also found among resettlers. Furthermore, greater number of widowed and divorced household heads was found among resettlers than found among the indigenous people. On the other hand, family size was greater among the indigenous people than the resettlers. Compared to the households of resettlers, the indigenous people were also characterized by low level of education. It was also noted that all the sample households of Ura *kebele* belong to Berta (indigenous people) and are Muslims, whereas that of Amba 1 *kebele* belong to Amhara ethnic group among which both Orthodox Christians and Muslims exist. With regard to self wealth ranking exercise, there existed relatively more rich households among the indigenous people than that found among resettlers, while the percentage of households that classified themselves as medium and poor were relatively greater among the resettlers than that of the indigenous people. It is, therefore, believed that these variations in the demographic and socio-economic attributes might have some implications for the disparities in food security.

CHAPTER FIVE
HOUSEHOLD FOOD SECURITY: STATUS, DISPARITIES AND EXPLANATIONS

5.1 Introduction

This chapter presents the main findings of the study. The results related to the central objective of the study is presented and discussed here. Firstly, the households' food security status is assessed so that the disparities between the indigenous people and resettlers in terms of their food security status can be investigated. Secondly, following the assessment of households' food security status and disparities, the possible explanations for the underlying causes for households' food insecurity as well as for the disparities in food security status between the indigenous people and resettlres are given from the households' broader livelihood contexts. Finally, this chapter briefly summarizes the main findings of study.

5.2 Assessing the Status and Disparities of Household Food Security

5.2.1 Food Security Status

According to Household Food Insecurity Access Scale (HFIAS), four kinds of indicators were calculated to help understand the actual experiences of household food insecurity (access) in the surveyed households (Coates,*et al*, 2007). These indicators were:

- Household Food Insecurity Access- Related **Conditions**
- Household Food Insecurity Access- Related **Domains**
- Household Food Insecurity Access **Scale Score**
- Household Food Insecurity Access **Prevalence**

i) Household Food Insecurity Access- Related Conditions

Household food insecurity access- related conditions indicate the percent of households that responded affirmatively to each of the nine standardized questions, regardless of the frequency of the experience.

In this survey, households were asked about the nine occurrence questions of HFIAS, which relate to the household food insecurity- related conditions, to get information about behaviors

and perceptions of the sample households. As shown in Table 5.1, the survey result revealed that 69.5 % of the surveyed households (68.6% of the indigenous and 70.4 % of the resettlers) were unable to eat preferred food or the kinds of foods during the recall period. That is, they were having limited choices in the type of food that they ate. This means they were unable to eat foods according to their preferences due to a lack of resources. However, none of the households had experiences of going a whole day and night without eating. Even the percentages of households experiencing the conditions of going to sleep hungry, and eating food that they really do not want to eat because of a lack of resources, were low (12.4 %). The same table also shows that the percent of household who reported their personal experiences with uncertainty and anxiety about acquiring food during the recall period was 55.2% (49.0 % of the indigenous and 61.1 % of the resettlers), showing that households of resettlers were more worried about their future food security than the households of the indigenous people did.

Table.5.1 Percentage of households experiencing food insecurity-related conditions at any time during the four weeks prior to the survey period

Occurrence of Household Food Insecurity Access – Related Conditions	Percentage of households who responded affirmatively (% of " yes")		
	Indigenous (N=51)	Resettler (N=54)	Both (N=105)
Worry about food	49.0	61.1	55.2
Unable to eat preferred food	68.6	70.4	69.5
Eat just a few kinds of foods	56.9	72.2	64.8
Eat foods that really do not want to eat	5.9	18.5	12.4
Eat a smaller meal	33.3	53.7	43.8
Eat fewer meals in a day	25.5	40.7	33.3
No food of any kind in the household	11.8	18.5	15.2
Go to sleep hungry	11.8	13.0	12.4
Go a whole day and night without eating	0.0	0.0	0.0

Source: Household survey, 2009

ii) Households Food Insecurity Access- Related Domains

Here, households' actual experiences of food insecurity related to three basic domains (anxiety and uncertainty, insufficient quality, and insufficient food intake) were assessed. As depicted in Table 5.2, percent of households with insufficient food quality seemed relatively higher than that of households with insufficient quantity of food. That means the majority of sample households had limited choices in the type of food (were unable to eat foods according to their

preference), and/or they ate monotonous diet (little dietary diversity) during the recall period. As it is clearly depicted in the table, with regard to the three household food insecurity access-related domains, the percentage of households experiencing food insecurity related to insufficient quality of food was 70% (68.2% for indigenous and 72.2% for resettlers). About 55.2 % of the sample households (49.0% for the indigenous and 61.1 % for resttlers) had worried about food, whereas 43.8 % of the households (33.3 % for indigenous and 53.7 % for resettlers) felt that they had experienced food insecurity related to insufficient quantity of food. Considering all the three domains, the percentage of households of resettlers experiencing food insecurity (83.3%) was relatively greater than that of the indigenous people (76.5%). This result indicates that households of resettlers of the sample *kebele* were more likely to be food insecure than that of households of the indigenous people of the sample *kebele*.

Table 5.2 Percentage of households experiencing with one or more behaviors in the domains of HFIAS at any level of severity

Household Food Insecurity Access-Related Domains	Percentage Distribution		
	Ura (N=51)	Amba 1 (N=54)	Both (N=105)
Domain 1: Anxiety and uncertainty about food	49.0	61.1	55.2
Domain 2: Insufficient quality of food	68.6	72.2	70.0
Domain 3: Insufficient quantity of food	33.3	53.7	43.8
Both domain 1 and 2	76.5	83.3	80.0
Both domain 1 and 3	58.8	75.9	67.6
Both domain 2 and 3	68.6	72.2	70.4
All the three domains 1, 2 and 3	76.5	83.3	80.0

Source: Household Survey, 2009

iii) Household Food Insecurity Access Scale Score

HFIAS score is a continuous measure of the degree of food insecurity (access) in the household in the past four weeks prior to the survey period. In order to calculate HFIA Scale Score, the following procedures were followed:

- The frequency- of-occurrence for the nine generic questions was coded as '**0**' for all cases where the answer to the corresponding occurrence questions was '*no*'(i.e., if

Q1=0,then Q1a=0, if Q2=0 then Q2a=0, etc.); '**1**' for the frequency- of – occurrence was' *rarely*'; '*2*' for '*sometimes*'; and '**3**' for '*often*'

- The frequency-of-occurrence codes for each frequency-of-occurrence question were summed up to get the household food insecurity access scale score.

The household food insecurity access scale score ranges from **0** to **27**. The higher the score, the more food insecurity (access) the household experienced. The lower the score, the less food insecurity (access) a household experienced (Coates *et al.*, 2007).

Based on this indicator, the household survey result showed that the average household food insecurity access scale score of the sample households was 5.63 (4.98 for the indigenous people and 6.24 for resettlers (Table 5.3). This also shows that resettled people of the sample *kebele* were more likely to be food insecure than that of the indigenous people. However, the two independent sample t-test for equality of means shows that the mean difference was not statistically significant at less than 5 % probability level.

Table 5.3 Household Food Insecurity Access Scale Score, by the group of households

Household group	Group statistics				t-test for equality of means	
	Mean	Std. Deviation	Minimum score	Maximum score	t-value	Sig.(2-tailed)
Indigenous	4.98	5.042	0	19		
Resettlers	6.24	4.459	0	16	-1.359	0.177(NS)
Total	5.63	4.770	0	19		

Note: NS= Not Statistically Significant at $P < 0.05$

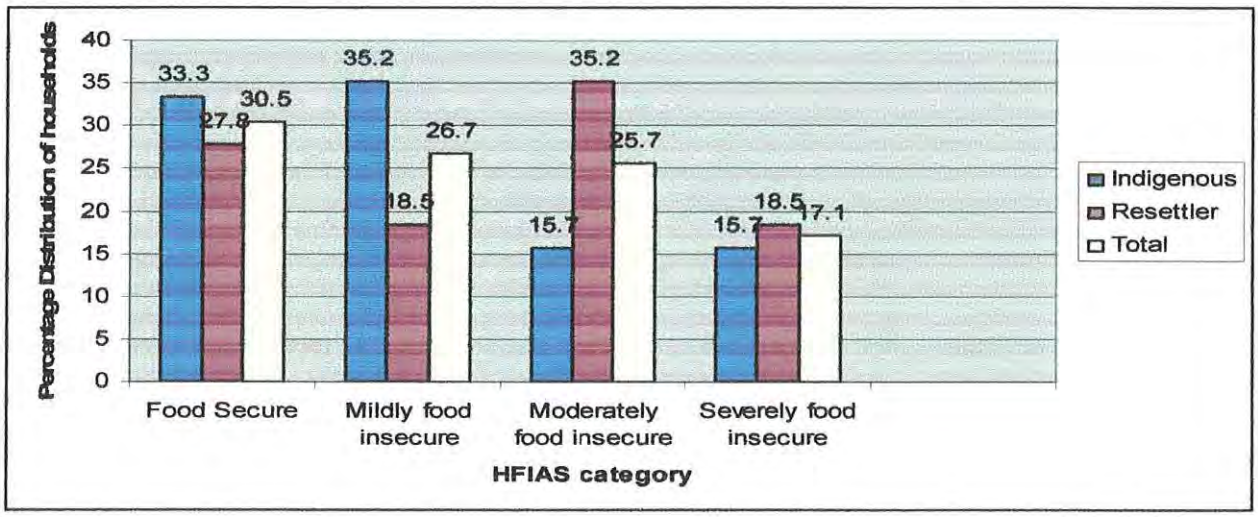
Source: Household Survey, 2009

iv) Household Food Insecurity Access Prevalence/ HFIAP/

HFIAP is a categorical indicator used to show the food insecurity status of the households. HFIAP indicator categorizes households into four levels of household food insecurity: food secure, mildly food insecure, moderately food insecure and severely food insecure (See Appendix E for the HFIAS Category). Based on HFIAP, the survey result was found out that 69.5 % of the households were food insecure with different levels of severity (26.7 % mildly

food insecure, 25.7 % moderately food insecure and 17.1 severely food insecure). Only 30.5 % of the households were found to be food secure. The percentage distribution of households experiencing the prevalence and severity of food insecurity is shown in Figure 4. With this indicator, the surveyed households of resettlers were more likely food insecure than that of the indigenous people. The percentage of food insecure households of indigenous people and resettlers were 66.7% and 72.2 %, respectively, indicating that food insecurity is a serious problem for the majority of households.

Figure 4. Households' Food Security by HFIAS Category



Source: Household Survey, 2009

Since the household survey was conducted during the harvest season, it is expected that the majority of the farm households feel food secure during this time. But the result didn't show as expected. Based on the HFIAS, the majority of the households felt food insecure. In support of this, Wolfe and Frangillo (2000:2) said that:

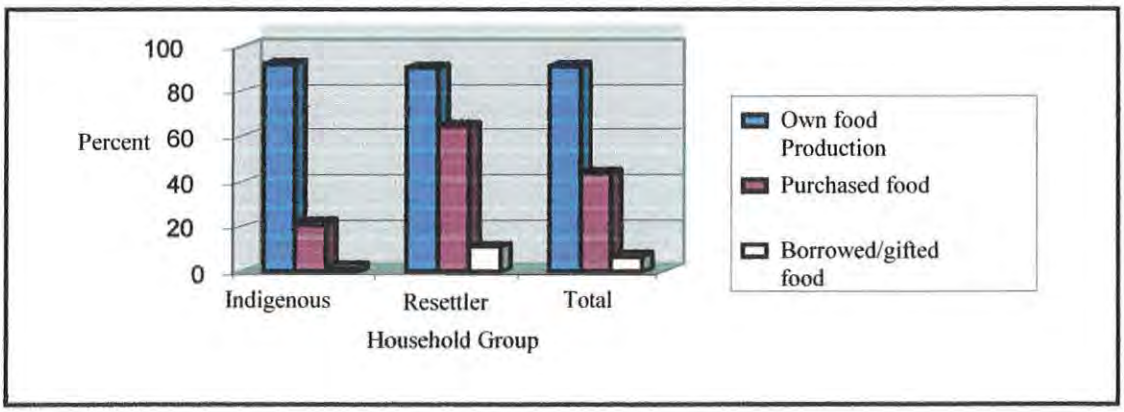
> *Current [food] intake may be adequate but food insecurity still experienced due to the concern over future intake. Alternatively, intake may be inadequate but only temporarily to prevent future food insecurity.*

5.2.2 Food Self- Sufficiency

In rural areas, where the majority of households are usually facing problems of generating income to purchase food, own crop production is the principal source of food for the households. In other words, they usually have access to food through their own production. For instance, in this household survey, the multiple responses of households showed that the

majority (91.4 %) of the households (92.2% of the indigenous and 90.7% of the resettlers) used own crop production as the main source of food showing that own production was the main source of food for the sample households. About 43.8 % of the households (21.6% of the indigenous and 64.8% of the resettlers) had got access to food through purchasing food crops, indicating that access to food through purchasing was more practiced by resettlers. Only a very small fraction of households (6.7 %) got access to food through borrowing and other means.

Figure 5. Percentage Distributions of Households by Sources of Food



Source: Household survey, 2009

Food self sufficiency is important, although it is not a sufficient condition to food security. With this regard, sample households were interviewed whether their own food crop production was sufficient enough for all-year round food requirements of their households, and the survey result has found out that only 14.3% of the surveyed household (15.7 % of the indigenous and 13% of the resettlers) responded affirmatively that their food crop production was enough for all-year round (Table 5.3). The great majority (i.e. 85.7%) of the total households (84.3 % of the indigenous and 87 % of the resettlers) could hardly cover their annual food consumption requirements from own crop production.

Table 5.4 Distribution of Households by Food Self Sufficiency Status

Status	Indigenous		Resettler		Total	
	No.	%	No.	%	No.	%
Food self sufficient	8	15.7	7	13.0	15	14.3
Not food self sufficient	43	84.3	47	87.0	90	85.7
Total	51	100.0	54	100.0	105	100.0

Source: Household Survey, 2009

As it is shown in Table 5.5, about 74.3 % of the households (66.7% of the indigenous and 81.5% of resettlers) did not have food crops that can cover more than 8 months of the year.

Only 25.7 % of the households (33.3% of the indigenous and 18.5% resettlers) were able to produce crops that are enough for more than 9 months. Sample households of the indigenous people were relatively better than that of resettlers in terms of food self sufficiency status.

Table 5.5 Distribution of Households by the Number of Months of Own Food Crop Lasts in Feeding the Households

Household type	Proportion of households by the number of months of own food crop lasts in feeding the household (%)				
	9-12 months	7-8 months	5- 6 months	3-4 months	1-2 months
Indigenous (N=51)	33.3	11.8	25.5	11.8	17.6
Resettlers (N=54)	18.5	44.4	11.1	22.3	3.7

Source: Household Survey, 2009

In general, the majority of households were not food self sufficient. These production shortfalls have implication for food insecurity. The focus group discussants also confirmed that many of the households had faced food shortage.

5.2.3 Household Dietary Diversity

Household dietary diversity refers to the different foods or food groups that the households consume over a given period of time. Household dietary diversity can reflect the economic ability of a household to consume a variety of foods. The number of different foods or food groups that the households consume can be associated with socio-economic status and household food security (Hoddinot and Yohannes, 2002). The number of different foods or food groups consumed in a household provides a measure of the quality of the diet.

Based on this notion, the sample households were interviewed about the kinds of food groups they consumed during the seven days prior to the survey period. The results of the survey depicted that the cereals (in various forms, such as *injera*, bread, *kita*, porridge, *kolo, nifro,* etc) had been consumed by the vast majority of households in most of the days of the week during the reference time. The mean number of days of cereal consumption was 5.26 (3.82 days for indigenous and 6.61 for resettlers), indicating that resettlers diet was mostly of cereals. It is known that cereals are predominantly carbohydrate rich foods. As shown from Table 5.6, consumption of protein-containing foods such as meat, egg and legumes by households of both groups was very limited, which is mostly associated with lack of resources to access to these food groups. Consumption of leafy vegetables and fruits as well as of roots and tubers (which are mostly vitamin-A rich food

groups) by households of the indigenous was better than that of the resettlers. The differences in dietary diversity may be because of the differences in food preference (food culture) or income level or both. In this case, it was learnt from the FGDs that there is difference between the indigenous and resettled people in terms of their food preference / food culture/. For instance, the indigenous (Berta) people usually prefer porridge made from sorghum or maize along with sauces made from "*quenques*" with haricot beans, whereas resettlers mostly used *injera* with *wot*. In addition, there are many wild foods consumed by Berta people which resettlers do not usually eat. Based on the sum of 'yes' responses for the consumptions of the 12 food groups considered, households of indigenous people were relatively better than that of resettlers.

Table 5.6 Distribution of households' consumption of different groups of foods during the 7 days prior to the survey period

	Indigenous		Resettlers		Total	
Food Groups	Distribution of households (%)	Mean # of days consumed per week	Distribution of households (%)	Mean # of days consumed per week	Distribution of households (%)	Mean # of days consumed per week
Cereals	80.4	3.82	96.3	6.61	88.6	5.26
Leafy vegetables	82.4	2.96	16.7	0.35	48.6	1.62
Tubers and roots	76.5	3.39	20.4	0.85	47.6	2.09
Fruits	78.4	2.51	20.4	0.41	48.6	1.43
Meat	43.1	0.55	1.8	0.02	21.9	0.28
Eggs	0.0	0.00	3.7	0.04	3.8	0.02
Fish	0.0	0.00	0.0	0.00	0.0	0.00
Legumes	74.5	3.94	96.3	6.48	85.7	5.25
Milk and milk products	19.6	0.47	22.2	0.69	20.9	0.58
Oils/Fats	52.9	2.75	46.3	2.54	45.5	2.64
Sweets	70.6	2.27	22.2	0.74	45.7	1.49
Spices, condiments and beverages	56.8	2.9	57.4	3.81	57.1	3.37
Sum of 'yes' responses	**324**		**218**		**542**	

Source: Household survey, 2009

5.2.4 Meal Frequency /Number of Eating Occasions/

Meal frequency (the number of meals served per day) can be used as a proxy indicator for gauging the adequacy of households' food intake. With this regard, households were interviewed for how

many meals they served a day under normal conditions. The survey result revealed that the number of meals taken by the indigenous people per day ranges from one to four, the majority of them (64.7 %) used three meals a day. But, in resettlers, the number of meals ranges from two to three, the majority of them (94.4 %) served three meals in a day. The average meal frequency for the total surveyed households was 2.83 times per day (2.71 for indigenous and 2.94 for resettlers). With respect to meal frequency, resettlers seem relatively better than that of the indigenous people. The Chi-square for contingency table or Pearson chi-square test also shows a statistically significant difference between the two groups of households in terms of meal frequency.

Table 5.7 Percentage Distribution of Households by Meal Frequency

Meal frequency	Indigenous	Resettler	Total	Pearson chi-square value	df	Asmp. sig. (2 sided)
	%	%	%			
1 times	17.6	0	8.6			
2 times	5.9	5.6	5.7	18.787	3	0.000
3 times	64.7	94.4	80			
4 times	11.8	0	5.7			
Average	**2.71**	**2.94**	**2.83**			

Source: Household survey, 2009

Note that one way ANOVA test (F-value= 13.879; df =1) also confirmed that there was significant variations between the two groups of households by meal frequency.

However, the meal frequency alone doesn't give sense about the level of food insecurity. Sometimes, the volume (the amount of food per meal) rather than the frequency of meal (number of meals per day) may be more important. In addition, the type of food eaten per meal sometimes matters more. Thus, measuring only the number of eating occasions will no longer indicate the exact picture. It is also important to note that the number of meals and type of food stuffs for consumption vary considerably during seasons of food shortage (Swindale and Ohri-Vachaspati, 1999).

5.3 Explanations for the Possible Causes of Food Insecurity and Disparities

Based on HFIAS, the survey result indicated that there were disparities in food security between the sample households of the indigenous people and resettlers, although the difference was not statistically significant. The majority of households (both indigenous and resettlers) were also found to be food insecure. In this sub-topic, explanations were given as to why the majority of the sample households were in general food insecure, and as to what factors created

and /or will potentially create disparities in food security between the two groups of households (indigenous and resettled people) of the surveyed *kebeles*.

With regard to the causes of households' food insecurity, households were asked to tell their perceptions of the major causes of households' food insecurity, and the majority of them (98.9%) perceived that low crop production as the major causes for households' food insecurity. About 32.2 % of the households also felt that overburdening of families /i.e., having large family size/ as another cause for households' food insecurity. On the other hand, 30 % of the households believed that poor management of post harvest was one of the causes of food insecurity. However, the causes of food insecurity couldn't be explained in such oversimplified way. There are many causal factors that interact in a very complex way so as to result in food insecurity at the household level. The explanations for disparities in food security should also be seen as a dynamic output of the livelihood systems of the households. It was noted that improved food security is considered as one of the desirable livelihood outcomes. However, what households try to achieve is not only improving food security but also other livelihood outcomes. People also need to be healthy; to be educated; to increase their income and wellbeing; to be self reliant; to reduce vulnerability; to sustain the use of natural resources; and to achieve other livelihood outcomes. Households prioritize the different livelihood objectives based on their situations. There are trade-offs between the livelihood outcomes, and it is the household that must make decisions which strategies to adopt and livelihood outcome to achieve (DFID, 1999). This means the status of food security of the household greatly depends on the achievement of other livelihood outcomes. It is in this sprit that this paper tried to examine the causes of disparities in food security in the livelihood lens in a comprehensive way.

In this sub-topic, therefore, explanations for the causes of food insecurity in general and disparities in household food security in particular were given from the point of view of the following key components of SLF: 1) Livelihood assets; 2) Livelihood activities and strategies; 3) Institution, organization and social relations; and 4) Vulnerability context

5.3.1 Livelihood Assets

Households' differential asset base endowment and their access to these assets have great implications for disparities in food security/insecurity. Since it is very difficult to explain the

food security situation from the perspectives of all these various forms of assets, it was necessary to focus on the major form of assets that have more implications for food security.

5.3.1.1 Natural Capital

Natural capital (land, water, forest and other naturally occurring resources) is an important asset for the farming households.

i) Land Holding Size and Soil Quality

Rural livelihoods are more closely linked with land resources. Availability of adequate and quality farmland is crucial for crop production. With regard to ownership of farmland, the survey result showed that all the sample households owned farmland. But, there were variations among households in the size of farm land they owned. On average, the farmland size that sample households owned was 8.73 *timads (*14.61 *timads* for indigenous and 3.19 *timads* for resettlers). This shows that households of the indigenous people had owned greater farmland size than that of resetlers. This difference was statistically significant at less than 1 % probability level. Thus, shortage of farm land is one of the major problems for resettlers, but it is not for the indigenous people.

Table 5.8 Distribution of Households by Farmland Size

Farm land size in *timad**	*Household type*					
	Indigenous		*Resettler*		*Total*	
	No.	%	No.	%	No.	%
1- 4	9	17.6	18	33.3	27	25.7
5- 8	19	37.3	35	64.8	54	51.4
9- 12	11	21.6	1	1.9	12	11.4
>12	12	23.5	0	0.0	12	11.4
Minimum	2		1		1	
Maximum	80		10		80	
Mean	14.61		3.19		8.73	
SD	18.32		1.87		14.00	
t-value	4.558***					

***Significant at P < 0.01

Source: Household Survey, 2009

Note: * Although it is generally accepted that one *timad* is equivalent to one-fourth of a hectare, one *timad*, in this study, is equated to one-eighth of a hectare. This is because the local farmers said one *timad* for the size of land plowed for half of a day.

Households have different supplementary means of access to farmland. For instance, the majority of households of resettlers (66.6 %) had access to farmland through sharecropping-in, while the majority of the indigenous people (59.5%) had access to farmland by clearing forest

Table 5.9 Distribution of Households by Means of Access to Land

	Indigenous (N=51)		Resettler (N=54)		Total (N=105)	
	Frequency	%	Frequency	%	Frequency	%
Share cropping-in	5	11.9	30	66.6	35	40.2
Purchasing	0	0	1	2.2	1	1.1
Renting in	1	2.3	0	0	1	1.1
Getting from somebody for free	9	21.4	1	2.2	10	11.5
Clearing forest and converting into farm land	25	59.5	0	0	25	28.7

Source: Household survey, 2009

The differential possession of and access to land can be one of the major determinants for food security disparity among different groups of households. This was confirmed by the survey result (Table 5.10).

Table 5.10 Distribution of Household by Total Cultivated Land Size*

Total farm land size (*timad*)	Number of households by farm land size and food security status					
	Indigenous		Resettler		Total	
	Food secure (N=17)	Food insecure (N=34)	Food secure (N=15)	Food insecure (N=39)	Food secure (N=32)	Food insecure (N=73)
1-4	0	9	6	12	6	21
5-8	7	12	9	26	16	38
9-12	3	8	0	1	3	9
>12	7	5	0	0	7	5
Mean	29.65	8.09	7.53	3.99	19.28	6.15
SD	25.84	3.04	4.46	2.88	21.85	3.46
t-value	4.847***		3.139***		5.023***	

*** Significant at p< 0.01

Note: * Total cultivated land in this case includes own land and sharecropped in land

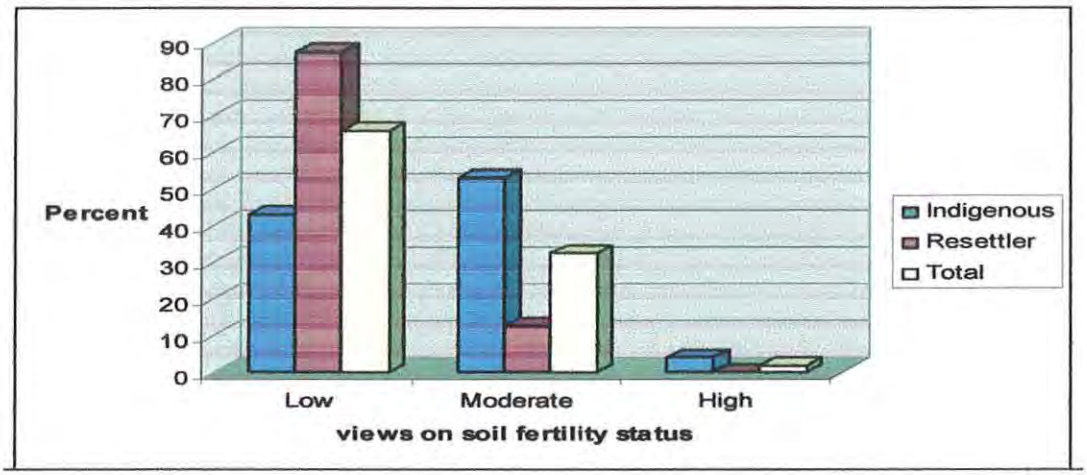
Source: Household Survey, 2009

In both surveyed *kebeles,* food secure households had access to farmland size better than that of food insecure households. The two independent sample t-test revealed that the mean difference between the food secure and food insecure households in both groups of households were statistically significant at 1% probability level, showing that availability of farm land is crucial for the farming households to ensure food security.

If sustainable food security is to be ensured, *inter alia*, availability of adequate farmland is important. But availability of land by itself is not enough, the quality of land (soil fertility) is also important. When the sample household heads were asked to state their feeling whether or

not there was generally soil erosion problem on their farm lands, the vast majority of them (about 89.5 %) felt that there was soil erosion problem. During FGDs, it was also learnt that soil erosion is one of the serious problems facing farm households. The problem of soil erosion was considered to be more serious at Amba 1 *kebele* than at Ura *kebele*. Thus, in Amba 1 *kebele*, problem of having small farmland size is further aggravated by soil erosion problem. The majority of households of resettlers (87.3%) perceived that the soil fertility status of their farmland is low, whereas more than half of the households of the indigenous people (52.9%) believed that their soil fertility status is moderate. From the key informant interview and FGDs, it was learnt that the indigenous people mainly uses shifting cultivation with fallowing their lands for some years. This by itself helps to maintain the soil fertility of the land. They do these because they have a possibility to expand land by clearing forests and changing into new farmland, leaving fallow the previously cultivated land. This practice is unthinkable in the case of resettlers. Depletion of soil fertility further aggravates their food insecurity. During FGDs, participants of resettlers brought soil erosion problem as a big issue. The difference in the severity of soil erosion problem can undoubtedly create disparities in food security, provided that other factors held constant.

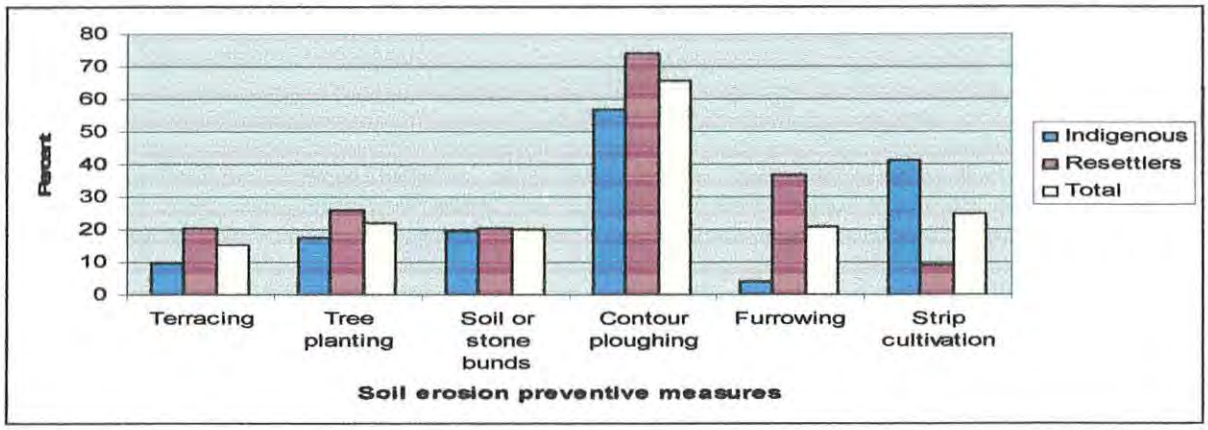
Figure 6. Distribution of Households by Perceptions towards Soil Fertility Status



Source: Household Survey, 2009

Although some of the sample households reported that they used some of the methods of preventing soil erosion (Figure 7), it was realized that the problem of soil erosion is serious in the study area, particularly in areas where resettlers live.

Figure 7. Methods of Soil Erosion Practiced by Sample Households, by Household Group



Source: Household survey, 2009

Unless the problems of land degradation in resettlement area are reversed/ mitigated through undertaking biological and physical conservation measures, it will also continue as a threat to household food security.

ii) Access to water resources

Access to water is often a key determinant of livelihood security impacting on a broad range of other activities and assets. For instance, if water resources are available near to the households, the time and labor that will be expended on water collection activities will be saved. In addition, if water is available, it can be used for irrigation. Irrigation increases intensification of agricultural activities, and hence increases in crop production which can help as a means of achieving food security. There are also linkages between water supply and sanitation, and food security (Degefa and Tesfaye, 2008).

In the surveyed *kebeles*, the majority of households (70.5%) use river as main source of water for home and livestock consumption, followed by streams (25.7%). The rest 3.8 % of the sample households used ponds as source of water. Safe drinking water (tap water point) is available only at the center of each *kebele* which is not accessible for the majority of the inhabitants.

The presence of the river known as *Hoha* which crosses both *kebeles* can be a good potential for the farm households to use the river for irrigation. However, only 32.4% the households (27.5 % of indigenous people and 37.0% of resettlers) used the river for small and traditional

irrigation. The land topography near the river is relatively good at Ura *kebele* than at Amba 1 *kebele*. However, irrigation was not widely practiced in the area. Even those that have started to use irrigation are producing a very small amount of crops, such as onion, lettuce, sugar cane, cabbage. This effort was done with the support of World Vision. The natives were not very aware of the use of irrigation, though they have the opportunity to both intensify and extensify production. The case in resettlers was different. For one thing, they do not have adequate land to use the water for irrigation. The other problem that inhibited resettlers from participating in irrigation was theft. As it was learnt from the informal conversations made with some farmers who had participated in small scale irrigation, one challenge they faced was that their irrigated crops, i.e., sugar cane, lettuce, and onion, were stolen at night by thieves.

iii) Access to forest resources

The physical observation of the areas under investigation shows that the indigenous people have better access to forest resources. There are many wild foods (plant roots, leaves, fruits, shoots, etc) which the indigenous people used to collect mostly from the forest that can be used by them as vital subsidiary parts of their diet. In addition, many households are living by selling the forest products, such as charcoal and bamboo woods to fulfill their foods needs. Based on the information obtained from individual interviewees and discussants of FGDs, however, forest resources are being depleted due to such human activities.

5.3.1.2 Financial Capital

Financial capital includes savings (in the form of cash, bank deposits or liquid assets such as livestock and jewellery), financial resources obtained through credit-providing institutions, and that obtained through inflows of money, such as pensions, other transfers and remittances. Here, access to credit and savings and remittances was considered.

i) Access to financial services (credit and savings)

Rural savings and credit services have key roles in technology dissemination, increasing rural employment and smoothing the consumption and investment gaps of households. In Asossa town, there is one regional Micro-Finance Institution (MFI) which provides credit and savings services to the beneficiaries on group based collateral.

In this household survey, it was found out that, out of the total sample households, only 21.9% /37.3 % of the indigenous and 7.4 % of the resettlers/ could get access to MFI services. This shows that access to credit service among resettlers was lower than that found among the indigenous people. Therefore, some mechanisms should be devised so as to improve access of households to credit services so that they can use it for productive activities.

Table 5.11 Distribution of Households Receiving Micro-Credit from MFIs, and by the Purposes for which They Used the Credit

Variable	Households' responses	Indigenous (N=51)		Resettler 1 (N=54)		Total (N=105)	
		Frequency	%	Frequency	%	Frequency	%
Received credit from MFIs?	Yes	19	37.3	4	7.4	23	21.9
	No	32	62.7	50	92.6	82	78.1
Purpose for which the credit was used	To purchase modern agricultural inputs	4	15.4	0	0.0	4	11.8
	To fulfill the education materials and clothes to children	1	3.8	4	50.0	5	14.7
	To purchase food	3	11.5	0	0.0	3	8.8
	To pay loan taken from others	0	0.0	1	12.5	1	2.9
	To buy livestock	15	57.7	3	37.5	18	52.9

Source: Household survey, 2009

The micro-credit taken from MFI was used for different purposes. For instance, out of the total households taking micro-credit, the majority of them (52.9 %) used the credit for purchasing livestock. 14.7 % and 11.8 % of them used the credit to purchase education materials and clothes for children and to purchase modern agricultural inputs, respectively. The other 8.8 % used the credit to purchase food.

There are many reasons raised for not taking micro-credit from the MFI. Of the reasons mentioned, requirement of group collateral, high interest rate and inappropriate loan payment time were the major ones. The multiple response frequency of the households who complained requirement of collateral as reason for not taking micro-credit was 60%, followed by too high interest rate (58.8%). About 43.2 % of the surveyed households said that inappropriate loan payment time was one reason for not taking micro-credit service. As result of which, some of the sample households used other sources of credit to fulfill their financial needs. Based on the

household survey result, about 22.9 % (21.6 % of the indigenous and 24.1 % of the resettlers) had used loan from other sources other than MFI, more than 95 % of them took loan from their relatives with no interest rate.

In both surveyed *kebeles*, saving practice is almost none. There are few households who have practiced savings. Of the total households surveyed, only 22.9 % (11.8 % of indigenous and 33.3 % of resettlers) had used savings in different forms. But, savings in cash form/ bank deposit was practiced only by three households of resettlers. Others who practiced savings used different forms of saving such as purchasing crops (stocking), livestock accumulation, purchasing equipments and the like. In terms of savings, households of resettlers were relatively better than that of the indigenous people.

ii) Remittances

Money transferred from others has its own contributions to food security. The money transferred from someone can be used to access to food through purchasing. It can be used to purchase agricultural inputs that will enhance agricultural production and productivity, and hence help secure household food security. However, the survey result showed that only few households received remittance. Out of the total surveyed households, only 11.4 % (7.8% of the indigenous and 14.8 % of the resettler) received remittance during the last 12 months prior to the survey period. In this case, resettlers seem relatively better in receiving remittance. Those who send money as remittance for the family were mostly sons and daughters who are engaged in different occupations in other areas.

Table 5.12 Distribution of Households Receiving Remittance during the Last 12 Months Prior to the Survey Period

Received remittance?	Indigenous (N=51)	Resettlers (N=54)	Total (N=105)
Yes	4(7.8)	8(14.8)	12(11.4)
No	47(92.2)	46(85.2)	93(88.6)

Note: Figures in parenthesis are percents.

Source: Household survey, 2009

5.3.1.3 Physical Capital

Physical capital comprises the basic infrastructure and producer goods needed to support livelihoods. In rural setting, physical capital includes such assets like, housing, farm implements and rural infrastructure.

i) Farm implements

Using modern farm implements, such as improved '*maresha*' (plowshare) are important to increase agricultural production and productivity. Based on this household survey, almost all sample households did not use modern farm implements. As it was leant from focus group discussion and key informant interview, the reasons why farm households did not use farm implements were, among other things, lack of supply of modern farm implements and low awareness of the farmers themselves to modern inputs. The majority of the indigenous people are still using a very traditional hand digging tool, such as *Pali* to cultivate their farm land. Only some are using oxen cultivation. But, resettlers are mostly oxen-plow cultivators. However, they all use traditional farm implements, such *as kenber* (yoke*), maresha* (plowshare). Therefore, research adaptation of farm implements and strengthening of the technology development capacity of Asossa rural technology center should get due attention.

ii) Rural infrastructure

Rural infrastructures play key roles in facilitating production, consumption, distribution, and trade, and are therefore critical in achieving food security in the rural economy. It is widely believed that access to different infrastructure such as all-weather roads, public transport, local market center, social services (health, education, and credit), agricultural extension services, grain mills, potable water and veterinary services are important for the households to ensure food securing. Taking distance as a criterion, resettlers had better access to different rural infrastructures. The differences between the indigenous people and resettled people in mean walking minutes to access to each rural infrastructure were statistically significant (See Appendix F, Table F-1).

If an infrastructure available near to the households does not provide the expected services to the households, it is meaningless to exist there. Therefore, it is also important to see the level of satisfaction with the infrastructure services that the households get. The level of satisfaction of the households of each of group of households was calculated by developing satisfaction level or scale ranging from 3 (high) to 1(low) for each of the infrastructure. As indicated in the (See Appendix F, Table F-2), the overall level of satisfaction of the households in Amba 1 *kebele* was relatively better than that of the indigenous people. Of the maximum score / the level of satisfaction (i.e, 3), the

overall mean score or level of satisfaction of the sample households of the indigenous and resettled people were 2.36 and 2.64, respectively.

5.3.1.4. Human capital

Human capital development is crucial for ensuring food security. With regard to the farming community, human capital can be seen from the point of view of education status, labor availability, health condition, including nutrition, farmers' training, agricultural extension services and indigenous knowledge and skills.

i) Education

It is an obvious fact that education is important to build the knowledge and skills of farmers and hence to improve their analytical skills and capacities to innovate and control their farm systems. Parental education is also important for nutritional outcomes of the children. Evidences show that women's education and status accounted for 43 percent to the reduction of child malnutrition (Smith and Haddad, 2000). In the long run, improved education will contribute to low fertility and better employment opportunities; and this in turn, enhances health (Young, 2001) and thereby contributes to food security.

As it is shown in Table 5.13, the percentage distribution of literate household heads of resettlers was greater than that of the indigenous household heads. The survey result also indicated that the frequency distribution of food secure households was relatively better than that of food insecure households in terms of education status. However, the Pearson chi-square test does not confirm that there is a systematic association between education level and food security status. Based on HFIAS, it was noted that the food security level of the indigenous people was better than that of the resettlers. But, the education data showed the reverse. i.e., the level of the indigenous people was relatively lower than that of resettlers. This might have happened due to the fact that food security is a function of many different factors which interact to each other. Thus, households with relatively better in education status may sometimes be food insecure due some other factors. Education alone does not always guarantee food security. On the other hand, households with lower education level may be food secure provided that households' food availability, access to food and utilization of food are ensured at all times. However, it is generally proved that education is a key factor for ensuring food security.

Table 5.13 Distribution of Household Heads by Education Level and Food Security Status

Education status	Indigenous (N=51)		Resettlers (N=54)		Total (N=105)	
	Food Secure (N=17)	Food Insecure (N=34)	Food Secure (N=15)	Food insecure (N=39)	Food secure (N=32)	Food insecure (N=73)
Illiterate	5	12	2	14	7	26
Literate	12	22	13	25	25	47
Pearson Chai-square (χ^2)	0.176 (0.176)		2.645(0.104)		1.949 (0.163)	

Note: Numbers in parenthesis are level of significances.

Source: Household survey, 2009

ii) Labor availability

In countries where the majorities of people are engaged in agriculture, human labor is more important in the agricultural sector than in other sectors. In rural communities, family members are the main labor force for the agricultural activities. Family size may affect households' food security status either negatively or positively. In this survey result, there was a significant mean difference between the family size of food secure and insecure households in Ura *kebele*. But, in the case of Amba 1 *kebele*, there was no significant difference between the mean family sizes of the food secure and food insecure households. However, the mean family size of food secure households was greater than that of food insecure households (Table 5.14).

Table 5.14 Distribution of Households by Family Size and Food Security Status

Family size (in number)	Indigenous		Resettler		Total	
	Food Secure	Food Insecure	Food Secure	Food insecure	Food Secure	Food Insecure
Mean	10.5	5.88	4.93	4.05	7.88	4.90
t-value	3.297***		1.532 (NS)		3.592***	

*** Significant at P<0.01; NS=Not statistically significant

Source: Household survey, 2009

This result contradicts other findings (e.g Getachew, 1995; Degefa, 2002; Workneh, 2006) that showed households with large family size are generally more food insecure than those with less

family size. This may be due to the fact that the farming households, particularly the indigenous people used rudimentary farming instruments which demand high labor force, and it is the family labor that are mostly used for such activities. In this case, having large family labor force, therefore, might have enabled the households to farm more, and thereby increase agricultural productivity and be more food secure.

When the household heads were asked if they faced labor shortage during the last agricultural season prior to the survey period, 61 % of them (41.2 % of the indigenous people and 74.1 % of the resettleres) responded that they faced labor shortage. This showed that resettled people were faced more with labor shortage. This also depicts that shortage of labor is associated with the number of household members.

iii) Access to Health Services

The relationship between health and food security is quite straight forward. Health can affect the households' food security status in various ways. Rural health extension program particularly plays great roles in teaching and advising the community at the household level about many health related issues including nutrition education.

In each of the sample household *kebele*s, there is a health post. There are two female health extension workers per each health post, working with the communities with primary focus on prevention of diseases. However, the survey result showed that only 44.8% of the sample households were beneficiaries of the health extension service. This shows that more than half of the surveyed households have not participated in rural health extension package. In terms of distance, resettlers have access to the nearest health center better than that of the indigenous people due their settlement pattern. However, the survey data revealed that the percentage of households who reported to be beneficiaries of the health extension services among the indigenous people (84.3%) was by far better than that of resettlers (7.4%). This big gap might have related either to difference in the commitments of the health extension workers to serve the community or to differential attention of the local government bodies towards the two groups of households.

The percentage of households who obtained education related to nutrition was only 32.4% (60.8% for indigenous and 5.6% for resettlers). In an attempt to ensure household food security, nutrition education should also be delivered adequately to the rural households, particularly for the women who are mostly engaged in food preparation and child caring.

Households' access to toilet facility (as a proxy indicator of hygienic condition) is important contribution to food insecurity. With this aspect, 81% of surveyed households used pit latrine. This can be taken as one positive measure to contribute to ensuring food security.

Health of the household is also linked with the availability of safe drinking water. Based on the survey result, percentage distribution of households who have access to safe drinking water was 53.3 % (47.1 % of the indigenous and 59.3% of the resettlers). Although this looks good, the reality is not the case when triangulated with FGDs. The discussants of the FGDs held in both *kebeles* said that access to safe drinking water is also a problem, though the situation is relatively better at Amba 1 *kebele* than at Ura *kebele*. The discrepancy of the results between the household survey and FGDs was due to the fact that the relative meaning of the phrase 'safe drinking water' was understood by the households differently during the household survey. For instance, rivers and streams may be considered as safe drinking water sources for some households, but not for others. During the FGDs, it was realized that many of the households collect water from unclean water sources.The women discussants in both *kebeles* also mentioned that many of the households have faced a problem of getting safe drinking water. Thus, lack of safe potable water was a problem for the sample households.

Based on the information obtained from key informants and focus group discussants, there are many human health problems which may affect the effective utilization of food-one of the components of food security. For instance, they mentioned malaria as the most common serious disease prevalent in the area. The prevalence of malaria can also greatly reduce agricultural productivity by reducing the working capacity of farmers.

iv) Training and Extension Services

To bring new technology, agricultural extension services are crucial (World Bank, 2003). Training and extension services are very important to strengthen the capacity of the farmers.

Out of the total survey households, the percentage of households participated in extension services was 37.1% (70.6 % of the indigenous and 5.6% of the resettler), showing that participation in extension package among the indigenous people seem considerably higher. This may be related to the availability of farmland size in Ura *kebele*. Farmers with larger landholding are likely to participate in extension (Beyene, 2000). Discussions held with key informants, however, revealed that participation in agricultural extension packages was very low in both sample *kebeles*. The extension packages that the government of Ethiopia is currently promoting through Participatory Demonstration and Training Extension System (PADETES) are almost non existent in both sample *kebeles*. In other words, packages promoted by PADETES, such as cereals, livestock, high economic crops, improved post harvest technologies, agro-forestry, soil and water conservation, bee keeping, etc are not adequately available for the farmers.

The frequency with which the farmers contact DAs is also important for the acquisition of informal education. However, more than half of the surveyed households (57.1%) were not contacted with the extension workers during the year 2007/08 (Table 5.15).

Table 5.15 Percentage Distribution of Households, by Frequency of Contact with Extension Workers and by the Level of Satisfaction with the Government's Provision of Extension Services

Household group	Frequency of contact with Extension workers (in the year 2007/08)					Level of satisfaction with Government's provision of agricultural extension services					
	None	Once	Twice	Three times	Four times	VH	H	M	L	VL	DK
Indigenous	60.8	15.7	11.8	3.9	3.9	0.0	7.8	13.7	58.8	7.8	11.8
Resettler	53.7	7.4	13.0	24.1	0.0	1.8	5.7	16.7	16.7	42.6	16.7
Total	57.1	11.4	12.4	14.3	1.9	1.0	6.7	15.2	37.1	25.7	14.3

Key: **VH**= Very High; **H**=High; **M**=Moderate; **L**= Low; **VL**=Very Low; **DK**=Don't Know

Sources: Household survey, 2009

About 14.3% and 12.4 % of the total households had contacted with extension workers three and two times a year, respectively. The other 11.4 % of the households contacted extension workers only once during the reference time. The frequency of contact with extension workers in both sample *kebeles* was generally too weak. In relation with this, the focus group discussants also confirmed that they did not get the required agricultural advices from the

development agents. The level of satisfaction with government's provision of agricultural extension service was considered to be low.

With regard to participation in farmers' training program, the household survey result shows that only 20 % (37.3 % of the indigenous and 3.7 % of the resettlers) had got training opportunities during the last five years. According to the responses of those who participated in the farmers training programs, the major issues on which the training programs delivered were soil conservation, utilization of improved seeds, post harvest management, watershed management, and compost preparation. From the discussions held with men focus group, it was understood that such trainings were usually provided by World Vision Ethiopia, Asossa-Homosha Area Development Project. It was realized that the local government was not delivering trainings in well organized and coordinated manner which fit with the farmers' needs.

5. 3.1.5 Social Capital

Social capital refers to the social resources (networks and connectedness, membership in institutions, relationships among members, trustship, kinships, reciprocity etc) upon which people draw in seeking for their livelihood outcomes (DFID,1999). Social capital has its own contributions (either negatively or positively) to food security. It can provide the basis for a range of livelihood opportunities, including customary access to land and natural resources and opportunities for the poor to sell their labor (Adams *et al*, 2000). The social network was found to be very strong among the indigenous people. Berta people are known for their communal way of life. They usually feed together. For instance, they have houses made for reception locally known as *kalewa* in which the guests (whether known or unknown by the owner) can freely take rest and feed together.

In the surveyed households, there are informal institutions /community based institutions/, such as *edir, equp, mehaber,* kinship, and formal institutions (*kebele* Administration and producers' cooperatives). From the key informants and focus group discussion, it was leant that *edir* and *equp* were more practiced by resettlers than the indigenous people, whereas kinship was stronger among the indigenous people. Membership to and producers' cooperatives was relatively stronger in Ura *kebele* than in Amba 1 *kebele.*

In principle, institutions help the households to access resources and services. In this study, an assessment was made in order to analyze the extent to which the existing institutions help those households who are members of the institutions. Based on the perceptions of the households, as shown in (Appendix F, Table F-3), institutions were generally more helpful for the indigenous people than for resettled people in accessing resources. The total weighted mean scores of helpfulness of institutions for the indigenous and resettlers were 3.49 and 3.14, respectively. However, based on the information obtained from key informants and focus group discussants, social institutions such as *edir* and *equp* were not as such functional and well organized to an extent that help the members access important resources like, savings and credit, and other services.

With respect to trustship among the members of the social institutions, the survey result showed that the total mean scores of trustship among the members of the institutions in Ura *kebele* and Amba 1 *kebele* were 2.60 and 2.32, respectively (See Appendix F, Table F-3). This shows that trustship among the members of the institutions were slightly better among indigenous people than that of the resettlers. Therefore, unless the trustship exists among members, the sustainability of the institution will be questioned.

5.3.2. Households' Livelihood Activities and Strategies

5.3.2.1. Agriculture: Crop Production and Livestock Raising

The livelihoods of the surveyed households are mainly dependent on agricultural activities. The majority of the households in both *kebeles* undertake mixed farming activities, involving both crop production and animal husbandry. As agriculture has multi functions, it has the potential to influence the factors that contribute to food security.

As it is shown in Table 5.16, all the surveyed households were involved in crop production. However, it was 66.7 % of the total households (51 % of the indigenous and 81.5% of the resettlers) who participated in livestock raising. Out of the total sample households, those who engaged in bee keeping and poultry were 17.1% and 40%, respectively. The result also indicates that livestock raising and poultry were more practiced by resettlers than by the

indigenous people. On the other hand, bee keeping was relatively more practiced by the indigenous people.

Table 5.16 Distribution of Households by Agricultural Activities

Livelihood activities	Indigenous		Resettler		Total	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Crop production	51	100.0	54	100.0	105	100.0
Livestock raising	26	51.0	44	81.5	70	66.7
Bee keeping	14	27.5	4	7.4	18	17.1
Poultry	16	31.4	26	48.1	42	40.0

Source: Household survey, 2009

The differences between the two groups of households under study in the extent of agricultural activities will have implications for the disparities in their food security status.

i) Crop Production

The survey result showed that both groups of the households cultivated different types of crops (cereals, pulses, oilseeds, fruits and root crops), However, there were some variations between the two groups of households in terms of the extent of cropping (diversification of crops and amount of production).

Table 5.17 Percentage Distribution of Households by the Type of Crops they grew during 2007/08 Cropping Season

Crop Type		Distribution of households by the type of crops they grew in 2007/08 (%)		
		Indigenous	Restettlers	Total
Cereals	Sorghum	96.1	90.7	93.3
	Maize	74.5	51.9	62.9
	Teff	13.7	9.3	11.4
	Millet	3.9	72.2	39
Pulses	Soybean	3.9	42.6	23.8
	Haricot Bean	78.4	44.4	61
Oil seeds	Neug	66.7	55.6	61
	Sesame	13.7	0.0	6.7
Fruits	Mango	70.6	33.3	51.4
	Banana	49.0	11.1	29.5
Roots and Tubers	Sweet potato	45.1	3.7	23.8
	Ordinary potato	23.5	3.7	13.3

Source: Household Survey, 2009

Crop production of the indigenous people was higher than that of resettlers in the 2007/08 cropping season (Table 5.18). In each of the crop types (cereals, pulses, oilseeds and roots and tubers) cultivated, there was wide difference in crop production. The two sample independent t-test also shows that the mean differences of crop productions in each crop type were statistically significant at 1% probability level. This may be mainly attributed to the farmland size differences. The availability of larger farm land in *Ura kebele* is believed to have relatively higher crop production.

Table 5.18 Distribution of Households by Crop Production in Quintal, 2007/08

Crop type	Kebele	Mean	SD	t-value	Max.	Min.	Sign. (2-tailed)
Cereal	Ura	6.44	5.80	3.722***	36	0.25	.000
	Amba 1	3.26	2.37		14	0.25	
Pulse	Ura	1.09	1.18	4.084***	5	0	.000
	Amba 1	0.38	0.47		1.5	0	
Oil seeds	Ura	1.60	1.86	4.864***	7	0	.000
	Amba 1	0.33	0.43		2	0	
Fruits	Ura	3.79	5.67	4.152***	22	0	.000
	Amba 1	0.53	0.98		4	0	
Roots and	Ura	1.86	3.32		12	0	
tubers	Amba 1	0.03	0.15	4.033***	1	0	.000

*** Significant at P<0.01

Source: Household survey, 2009

Difference in crop production may have implications for disparities in food security. This was confirmed by the survey result that crop production was also associated with food security status. Those households who were food secure had by far better than that of food insecure households in the mean crop production (See Appendix F, Table F-4).

Overcoming agricultural stagnation and food insecurity depends on increasing agricultural productivity However, the crop production and productivity in both sample *kebeles* was not as such adequate for the majority of households to be self sufficient due to several factors. The major constraints related to crop production were identified by the participants of the focus group discussions and key informants as follows:

Table 5.19 Summary of Key Constraints Related Crop Production

Ura kebele (indigenous)	Amba 1 *kebele* (Resettlers)
-Use of labor intensive rudimentary farming tools (crop farming mostly based on hoe cultivation), i.e lack of oxen for plowing. - Lack of or inadequate use of modern agricultural inputs (improved seeds, fertilizers, etc) -Poor working culture of men -High prevalence of crop diseases, pests and weeds (Group discussants highly emphasis the problem of the parasitic weed known as *Striga)* - Poor post harvest management (for example, poor storage facility, selling the crops immediately after harvest, etc)	-Shortage of farm land and poor soil quality - Lack of or inadequate use of modern agricultural inputs (improved seeds, fertilizers, etc) - Lack of oxen - Low agricultural extension support

Source: FGD and Key Informant Interviews, 2009

One of the serious problems for crop production is shortage of draft power. As the survey result confirmed, the vast majority of the households, particularly the indigenous people used hand digging tools (hoe cultivation) to produce crops (Table 5.20). About 78.4 % of indigenous people used hoe cultivation/ i.e., digging their land using hoes. Out of the total sample households, only 13.7 % households used their own pair of oxen for plowing, and 15.7 % used to cultivate by pairing an ox of his/her own with an ox of the other person. The rest 21.5 % exchanged their labor to get oxen in return. On the other hand, the majority of resettlers used exchange of human labor to get oxen in return as the main mechanism to get access to draught oxen. Although the regional government has put donkey-plowing as one strategy to be used by the indigenous people for cultivation, none of the households used donkeys for cultivation. One of the reasons for this was [as confirmed by key informant interview and participants of focus group discussion] that Berta people consider donkeys as 'prestige animals' which they believed that donkeys should not be used for traction. They prefer to use donkeys for transportation, not for plowing. Therefore, continuous awareness creation should be given to the indigenous

people so that they can use donkeys to the maximum benefits. As it was informed by the DAs, some resettlers used cows for traction purposes due to shortage of oxen.

Table 5.20 Distribution of Households by Means of Cultivation (Multiple Responses)

Means of cultivation	Indigenous (N=51)		Resettler (N=54)		Total (N=105)	
	No.	%	No.	%	No.	%
Own pair of oxen	7	13.7	7	12.9	14	13.3
Oxen exchange	8	15.7	12	22.2	20	19
Own donkeys	0	0	0	0	0	0
Exchanging human labor for oxen	11	21.5	35	64.8	46	43.8
Digging with hands/hoe cultivation	40	78.4	9	16.7	49	46.6

Source: Household survey, 2009

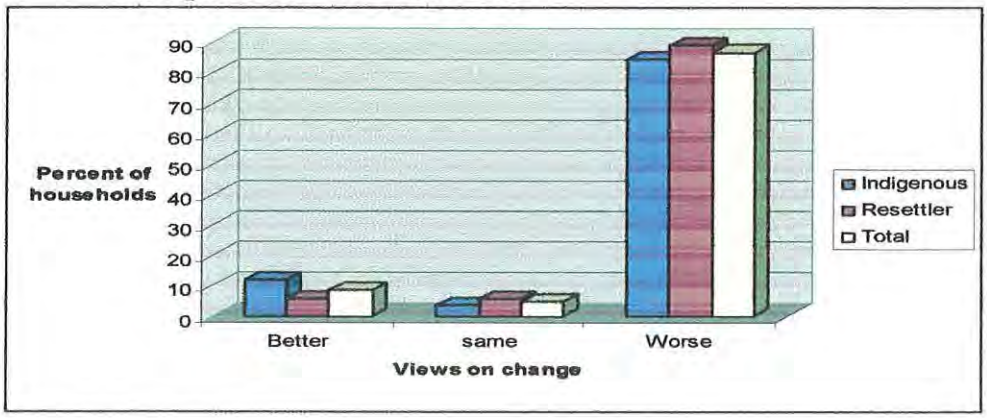
The survey result also revealed that there was serious shortage of modern agricultural inputs (chemical fertilizers, improved seeds, pesticides, etc). Out of the total surveyed households, only 10.5 % of the sample households (15.7 % of the indigenous and 5.6 % of the resettlers) used some of the modern agricultural inputs, such as chemical fertilizers and pesticides. The sample households mentioned that the main reason for not using these modern inputs was due to the lack of supply of modern agricultural inputs. The key informants indicated that the government, which was previously supplying inputs, has now stopped delivering the supply. There are no private suppliers of inputs in the region. Very recently, cooperatives are participating in supplying some inputs, particularly chemical fertilizers. However, the great majority of the farmers were not getting the inputs. During FGDs, participants also mentioned that the high price of chemical fertilizers did not allow them to purchase. Thus, in addition to the lack of supply, the lack of purchasing power of the farmers was the reason mentioned by the households for not adopting modern agricultural inputs. The survey result related to participation of extension package and use of modern agricultural inputs showed that the current status of technology adoption is too low and is stagnant. Therefore, with the current trend of technology adoption, it couldn't bring about the increased agricultural production.

Compared to the national and regional crop yield the CSA crop production forecast sample survey for 2007/08, crop production and yield in Asossa *woreda* was found to be very low (See Appendix F, Table F-5) and this obviously can contribute for the prevalence of household food insecurity. The differences in the constraints related to crop production that the

households faced with will have also differential effects on their crop production and hence may create disparities in households' food security.

Regarding to the trend of food supply and food crop price, the majority of the sample households felt that food supply at the local market was decreased whereas the food price has increased. This is obvious that as food crop supply decreases the demand for it increases and as a result, the price of food also increases. The low food crop supply is mostly associated with the low crop production. In support of this, when the surveyed households were asked to respond their feeling on the trend of their crop production of 2007/08 compared to two years ago, the majority of them (86.7%) perceived that it is becoming worse. Only 8.6 % felt that the trend of crop production was better. The rest 4.8 % believed that it was unchanged.

Figure 8. Perceptions of Households about the Changes of Crop Production in 2007/08 Compared to Two Years Back



Source: Household survey, 2009

Their perceptions agreed with the secondary data of crop production and crop yield obtained from Asossa WARDO (the data is presented in Chapter 3 on page 27, Table 3.1). This informs us how the crop production and yield is deteriorating over time due to several factors, causing for the decrease to food supply. This low crop production was also evidenced by the physical observation of the market at Asossa town and the informal conversations made with grain traders which confirmed that the majority of food grains, particularly *teff* were brought from other places (e.g Addis Ababa and Gojjam), indicating that the nearby farmers of Asossa town are not able to produce grains for market. Their own crop production couldn't even feed them through out the year. In such situations, the higher food prices can harm the households. High food price will

shift to feed low priced food crops but nutritionally less balanced, affecting households' food security situation.

ii) Livestock Raising

Livestock directly and indirectly contribute for food security. In this survey, out of the total survey households, 35.2 % of them (51 % of the indigenous and 20.4 % of the resettlers) did not possess any livestock at all. The distribution of households of indigenous and that of resettlers who totally lacked livestock were 51% and 20.4%, respectively. This shows that resettlers seem better than indigenous people in terms of livestock possession.

If oxen possession was considered separately, about 70.5 % of the households didn't have any ox. When the distribution of oxen possession was disaggregated by the household type, the distribution of households of indigenous and that of resettlers who totally lacked ox were 72.5% and 68.5 %, respectively. Only 18 % of the households (13.7% for indigenous and 22.2% for resettler) owned an ox, and 11.4 % of the sample households (13.7 % for indigenous and 9.3 % for resettler) possessed a pair of oxen, indicating there is serious shortage of oxen in both groups of households.

Table 5.21 Distribution of Households by Oxen Possession

Oxen owned	Indigenous		Resettler		Total	
	Frequency	%	Frequency	%	Frequency	%
0	37	72.5	37	68.5	74	70.5
1	7	13.7	12	22.2	19	18.1
2	7	13.7	5	9.3	12	11.4

Source: Household survey, 2009

According to the survey result, the total livestock population owned by the sample households in both *kebeles* was 150.3 TLU (58.79 TLU for indigenous and 91.51 TLU for resettlers), and the average holding was 1.4 TLU (1.2 TLU for indigenous and 1.7 TLU for resettlers). This shows that livestock production in the sample *kebeles* was found to be too low. On reason for this low production is the prevalence of animal diseases in the area. The most common animal diseases include *Trypanosomiasis* (diseases of cattle), *PPR/ Pestes de Petitis Ruminants* / (disease of sheep and goats), and *New castle* (disease of chicken). Another reason that can be mentioned as a reason for low livestock production could be shortage of animal feed (particularly in Amba 1 *kebele*), and poor animal handling system. Based on the information

obtained from DAs, there was no provision of modern animal feed (forage); no artificial insemination service; and no supply of improved livestock varieties (chicken, small ruminants and cattle).

Table 5.22 Distribution of Livestock Population by Species

Species	Indigenous		Resettler		Total	
	Number	TLU	Number	TLU	Number	TLU
Ox	21	21	22	22	43	43
Cow	15	15	37	37	52	52
Donkey	25	12.5	8	4	33	16.5
Sheep	10	1	6	0.6	16	1.6
Goat	40	4	34	3.4	74	7.4
Calf	5	0.5	27	2.7	32	3.2
Heifer	5	3	22	13.2	27	16.2
Bull	1	0.6	13	7.8	14	8.4
Chicken	119	1.19	81	0.81	200	2
Total		58.79		91.51		150.3
Mean		1.2		1.7		1.4
SD		2.1		1.7		1.9
t- value		-1.474 (NS)				

NS: Not statistically significant

Source: Household survey, 2009

Note: The conversion factor used to convert livestock heads into Tropical Livestock Unit (TLU) was 1 for ox/cow;0.5 for donkey; 0.1 for sheep/goat/calf;0.6 for heifer/bull; and 0.01 for chicken (Workneh, 2006).

Regarding the trend of livestock over time, the majority of both groups of households (49.5%) believed that there was a decrease in livestock holding. This was evidenced by the explanation made by one discussant of FGD at *Ura Kebele* as:

> *In earlier times, before 30 years, gendi [Trypanosomiasis] was not known. A rich person had up to 200 cattle. The disease [Trypanosomiasis] firstly emerged around the time before two years from the Revolution [Derge's coming to power]. Since then, it has become difficult to rear livestock because of gendi.*

However, the discussions held with DAs confirmed that *Ura kebele* is suitable for livestock raising due to the availability of grasses or natural animal feeds and water, and DAs complained about the poor livestock management of the indigenous people for the decrease for the livestock. However, both the DAs and the households of the indigenous people believed that the prevalence of the livestock diseases is the serious problem. In the case of resettlers, as explained by the FGD participants, in addition to the disease/ the prevalence of

Trypanosomiasis/, the problem of animal feed was considered as a challenge for livestock raising.

Although the area is proved to be suitable for honey production, the farmers engaged in bee keeping was few. In areas, like in these sample *kebeles*, where there is high potential of honey production, farmers should be encouraged to be participate in beekeeping along with other agricultural activities so that they are able to be food secure. Based on the key informants, in both sample *kebeles*, there was also no practice of animal fattening. Therefore, in order to help farmers secure their food security, interventions in animal fattening should be required.

In general, the survey result revealed that resettlers were relatively better than the indigenous people in livestock holding. However, the mean difference in livestock population in TLU between the indigenous people and resettlers was not statistically significant.

In both sample *kebeles*, food secure households owned greater TLU than food insecure ones (Table 5.23). Food secure households of the indigenous people and resettlers owned on average 2.72 TLU and 3.76 TLU, respectively, whereas the mean livestock holding in TLU of food insecure households of the two sample *kebeles* were respectively, 0.37 and 0.90, showing that food security disparity can be resulted from differential access to livestock holdings. The two independent sample t-test for equality of means also shows that there was statistical significant difference between food secure and insecure households in both sample *kebeles*.

Table 5.23 Distribution of Sample Households, by Livestock Holding and Food Security Status

Livestock holding in TLU	Indigenous People (N=51)				Resettlers (N=54)			
	Food secure (N=17)		Food insecure (N=34)		Food secure (N=15)		Food insecure (N=39)	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
0	3	17.6	23	67.6	0	0.0	11	28.2
0.10-1.55	4	23.5	8	23.5	1	6.7	20	51.3
1.56-3.00	5	29.4	3	8.8	3	20.0	7	17.9
3.01-4.60	2	11.8	0	0.0	7	46.7	1	2.6
4.61-9.50	3	17.6	0	0.0	4	26.7	0	0.0
Mean	2.72		0.37		3.76		0.9	
SD	2.96		0.66		1.44		0.87	
Minimum	0.00		0.00		0.60		0.00	
Maximum	9.50		2.00		5.92		3.71	
t- value	18.61***				4.06***			

*** Significant at P< 0.01

Source: Household Survey, 2009

iii) Agricultural Activities as Sources of Cash Income

For the majority of the rural households, the income sources are mainly from agricultural activities. They sell agricultural products to get cash income so that they can access to other necessities through purchasing. This is because households have many livelihood objectives to attain. They are not undertaking agricultural activities just for food requirements only. Households usually sell their agricultural products to fulfill other consumption (food and non-food) requirements. In this household survey, for example, about 80 % of the total households responded that they sold any of the agricultural products. Of those who sold, the sale of crops (temporary and permanent crops) accounted for the larger portion. About 70% of these households sold crops, followed by livestock (18.1%). Sometimes households sell one type of agricultural product and buy another agricultural product in exchange. From the sale of the agricultural products, the sample households earned total annual cash income of ETB 797.2 (ETB 1104.9 for indigenous and ETB 510.4 for resettlers). The difference between the two groups of households was statistically significant at less than 1% probability level. This income difference can create differential access to food, and hence contribute for disparities in food security. More cash income does usually lead to increased purchasing capacity of the households. The survey result also confirmed that from the sale of agricultural products, food secure households earned cash income better than that of food insecure household.

Table 5.24 Distribution of Households by Total Annual Cash Income Earned from the Sale of Agricultural Products (in ETB)

Household type	Food security status	N	Mean	SD	Min.	Max.	t-value	Sign.(2-tailed)
Indigenous	Food secure	17	1759.6	1928.8	326.00	8000.00	2.810***	0.007
	Food insecure	34	777.6	501.5	0.00	1840.00		
Resettler	Food secure	15	841.2	416.6	0.00	1637.00	3.928***	0.000
	Food insecure	39	383.3	370.9	0.00	1268.00		
Both	Indigenous	51	1104.9	1254.9	0.00	8000.00	3.281***	0.001
	Resettler	54	510.4	432.8	0.00	1637.00		

*** Significant at P<0.01

Source: Household survey, 2009

5.3.2.2 Off-and Non-Farm Activities

Despite the fact that on-farm activities are the main livelihood activities that the rural households pursue to survive, they are not the only ones. Apart from on-farming activities, households can be involved in off-farm and non- farm activities to earn income and hence access to food. In this study, the survey result revealed that some households were engaged in off-farm and non- farm activities. Out of the total households surveyed, the percentage of households involved in off- farm activities (as wage laborer on others' farms) was 22.9 % (0 % for indigenous and 44.4 % for resettlers). Some households also participated in non-farm activities. Petty trading was the commonly practiced non-farm activity. About 31.4 % of the total households (15.7 % of the indigenous people and 46.3 % of the resettlers) engaged in petty trading.

Table 5.25 Distribution of Households by Off-/Non- Farm Activities

Off-/non- farm activities	Indigenous		Resettler		Total	
	Frequency	%	Frequency	%	Frequency	%
Wage Laborer on Others' Farms	0	0.0	24	44.4	24	22.9
Non-Agricultural Wage Laborer in Rural Areas	0	0.0	8	14.8	8	7.6
Urban Daily Wage Laborer	0	0.0	11	20.4	11	10.5
Hunting/ Gathering Wild Life	2	3.9	0	0.0	2	1.9
Petty Trading	8	15.7	25	46.3	33	31.4
Sale of Firewood or Charcoal	15	29.4	3	5.6	18	17.1
Handicrafts	8	15.7	1	1.9	9	8.6
Local Drink Selling	0	0	10	18.5	10	9.5
Traditional Gold Mining	1	2.0	0	0.0	1	1.0
Government Employment	1	2.0	1	1.9	2	1.9

Source: Household survey, 2009

Differences were observed with respect to the participations of households in off-and non-farm activities. For instance, the percentage of households who participated in sale of firewood or charcoal was greater for the indigenous people than for resettlers. This may be related to the availability of forests in their *kebeles*. Similarly, more households of the indigenous people were involved in handicrafts and collecting wild foods than that of resettlres. For instance, some basketry products from bamboo, and other products such pottery (*alberik* and other home utensils) are produced by the indigenous people for sale. Resettlers were better in participating in off- farm activities (as wage laborer on others' farms) and in non-agricultural wage labor, urban daily labor, petty trading, and local drink selling. As informed by the key informants, the

indigenous people were not usually involved in off-farm activities. But, sometimes the youth go to Sudan and work there as wage laborers in agricultural activities, such as in harvesting groundnut and maize. It is not very common for the indigenous people to work locally as wage laborer either in rural or in urban areas, while engaging in such livelihood activities is common among the households of resettlers. This may be partly due to the shortage of farmland and declining soil fertility. Based on the information obtained from key informants, both men and women were involved in wage employment on others' farm, mostly on the farms of the indigenous people. Usually, they migrate to Asossa town (seasonally or on daily basis) to work as wage laborer.

The findings of the household survey were consistent with the perceptions of key informants that the working culture of the indigenous people was generally too poor. As a result of which, the income they generated from off-/ non-farm activities was smaller than that of the resettled people who are mostly engaged in diversified income generating activities. Thus, the differences in the extent of participation in the off-and non-farm activities can contribute for the disparities in households' food security. The household survey result confirmed this as shown in Table 5.26.

Table 5.26 Distribution of Households by Off- and Non-Farm Total Annual Income (in ETB)

Household type	Food security status	N	Mean	SD	Min.	Max.	t-value	Sign.(2-tailed)
Indigenous	Food secure	17	527.8	602.2	0	1789	1.741*	0.089
	Food insecure	34	288.5	376.7	0	1360		
Resettler	Food secure	15	1047.3	713.3	0	2148	2.078**	0.043
	Food insecure	39	680.4	523.9	0	2134		
Both	Indigenous	51	368.3	471.8	0	1789	-3.920***	0.000
	Resettler	54	782.3	598.9	0	2148		
	Total	105	581.2	577.1	0	2148		

*** Significant at P<0.01; ** Significant at P<0.05; * Significant at P<0.1

Source: Household survey, 2009

The income generated from the off-and non-farm activities were very limited. On average, the annual income earned from such activities by the sample households of the indigenous people and resettlers were ETB 581.2 (ETB 368.3 for indigenous and ETB 782.3 for resettlers). In areas where the annual food crop production is inadequate, such income can help households increase the ability of the households to purchase food from the market and hence contribute to food security. The status of food security was associated with the level of income of the households. Those who were food secure had earned relatively greater income from off-and non-farm activities than those who were food insecure.

5.3.2.3 Livelihood Strategies

i) Differential Livelihood Strategies and Implications for Disparities in Food Security

With regard to the livelihood strategies, the majority of the sample households pursue different livelihood strategies to survive. The results of household survey showed that there were wide variations in the livelihood strategies that the two groups of households followed, which can ultimately create disparities in household food security.

Table 5.27 Distribution of Households by the Livelihood Strategies Pursued

Livelihood Strategies		Indigenous			Resettler		
		Food secure (N=17)	Food insecure (N=34)	Total (N=51)	Food secure (N=15)	Food insecure (N=39)	Total (N=54)
Diversification	Frequency	9	17	26	13	32	45
	Percent	52.9	50.0	51.0	86.7	82.1	83.3
Agricultural intensification	Frequency	6	10	16	7	14	21
	Percent	35.3	29.4	31.4	46.7	35.9	38.9
Agricultural Extensification	Frequency	10	20	30	7	6	13
	Percent	58.8	58.8	58.8	46.7	15.4	24.1
Migration	Frequency	1	1	2	0	8	8
	Percent	5.9	2.9	3.9	0	20.5	14.8
Remittance	Frequency	2	2	4	2	6	8
	Percent	11.8	5.9	7.8	13.3	15.4	14.8

Source: Household survey, 2009

As it is shown in the Table 5.27, the percentages of households of the indigenous people and resettlers pursued diversification (use of agricultural and non-agricultural activities) as livelihood strategy were 51 % and 83.3%, respectively. About 37.4 % of the households indigenous people and 38.9 % of the resettlers used agricultural intensification (tried to increase agricultural production per unit of land either with use of more labor or modern inputs), whereas 58.8 % of the sample households of the indigenous and 24.1 % of that of resettlers followed agricultural extensification (tried to increase crop production by cultivating more land) as one of their livelihood strategies. The percentages of households of the indigenous people and resettlers who used to seek a livelihood by migration (by moving away temporarily or permanently to other places) were 3.9 % and 14.8 %, respectively. Some of the sample households (7.8 % of the indigenous and 14.8 % of the resettlers) used to survive with remittances as complementary means to other livelihood strategies.

Though the two groups of households have features in common in some aspects of the livelihood strategies, they show some basic differences with other aspects of their livelihood strategy they undertake. They both followed the livelihood strategies, such as agricultural intensification, agricultural extensification, livelihood diversification and/or migration. This doesn't mean that all the surveyed households used to follow all these livelihood strategies. The extent to which the households undertake the different livelihood strategies differ from one household to another depending on the asset status, background experiences and the objectives of the households. Based on the information obtained from the key informants and focus group discussants, the following basic differences were identified with respect to each livelihood strategy.

a) Agricultural Intensification

The indigenous people used their family labor to intensify their crop production as they are mostly engaged in hand digging tools, which demand more labor force. Resttlers also used their family labor input, but they used to cultivate their small plot of lands intensively without leaving land as fallow. Thus, such agricultural intensification with the use of labor input only will not increase crop production unless intensification through the use of improved varieties and production technologies is promoted.

b) Agricultural Extensification

Increasing production of food grains may be brought by expanding the farm land frontier. Indigenous people were more involved in agricultural extensification than resettlers did. Their main farming system is shifting cultivation due to the fact they have available land in their vicinity. They clear forests and change into farm land. This is evidenced by the household survey that about 59.5 % of the indigenous people had access to land through clearing forests. They have the opportunity to expand farmland, whereas resettlers do not have this opportunity. They are restricted to the farmland they obtained at the time when resettlement was established. However, the results of household survey as well as the key informant interviews and FGDs showed that many resettlers had access to land through sharecropping and other arrangements. The majority of resettlers (66.6%) got access to land through sharecropping-in. Thus, differential opportunities to expand farmland can contribute for disparities in crop production and hence disparities in food security.

c) Migration

Migration as livelihood strategy was also used by some of the sample households. However, it was more practiced by members of the resettled households than by those of the indigenous people. According to Amba 1 *kebele* chairperson, some farmers of the *kebele* (usually the head of the household migrated to other rural *kebele* in Asossa woreda, such as Kushmengel *kebele* (where there is unexploited land) to work in farming activities. Females from the poor farmers usually migrate to Asossa town to work as maids (home servants).

ii) Households' Coping Strategies to Food Insecurity

There are different coping mechanisms by which different households use as a means of getting through difficult times of food shortage. In the household survey, the sample households were asked to tell what coping strategies they pursued during times of food shortage, and the majority of them (97.1%) said that they used to food shortage by eating less preferred food