The Links Between Policy, Sustainable Food Security and Well-Being in Gelgele and Yetnora Villages in Ethiopia

By

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Abstract

This thesis is concerned with food insecurity issues in Ethiopia; where around 10 million people are currently considered to be food insecure. The African Union (AU) has clear food security policies in place which member states are now adopting and implementing. The assessment of food security policy formation in Ethiopia inspired by the African Union, its implementation processes and the effectiveness of the policies at a local level is the main interest of the thesis. The policy making process is analysed through three theoretical frameworks: discourse and narratives, politics and interests and actors and networks. A top-down approach has been used to analyse the policy implementation process. The effectiveness of the food security polices at the local level from the farmer's perspective has investigated through two case studies at the Village (*Kebele*) level.

The African Union food security policy is being managed through the New Partnership for Africa's Development (NEPAD) Agency and its Comprehensive African Agriculture Development Programme (CAADP) framework. The NEPAD agency and the CAADP framework have been created by few elite individuals through the AU. Ethiopia, as an AU member country has adopted these policies and is now implementing them at the ground level. The AU food security policy has been incorporated within the Ethiopian Government own policies to increase food productivity and food security in the country. The key policy is the Growth Transformation Plan. Initially set for 2010-2015, the policy was created by the politicians at the Federal level and has been implemented using a top-down approach through the administration system. The Ethiopian Research Organisations have very limited role in contributing to the policy making process; but play a great role in the implementation process delivering policy at the ground level through the agriculture extension system.

The Ethiopian Government is now commercialising the agriculture sector and investing in agricultural inputs to drastically increase the food productivity of the small-scale farmers. The Government claims that this is to increase food security for the people at national level but also to increase food export, earn foreign exchange, grow economically and reach a middle-income country by 2025. The main finding of the thesis is that even though the food security policy formation and policy implementation process is very efficient until it reaches the people on the ground, the effectiveness of the policy from the farmer's perspective is weak in delivering sustainable food security and increasing well-being. I have found that there is a huge gap between the policies in place and sustainable food security, human well-being and human development in Ethiopia from the study villages.

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Abbreviations

AAU	Addis Ababa University
ADLI	Agriculture Development Led Industrialization
AGRA	The Alliance for a Green Revolution in Africa
AGP	The Agricultural Growth Program
ATA	The Agricultural Transformation Agency
AU	The African Union
BoA,	Bureau of Agriculture
CAADP	The Comprehensive Africa Agriculture Development Program
CFA	The United Nations Comprehensive Framework for Action
CGIAR	The Consultative Group for International Agriculture Research
CIMMYT	The International Centre for Wheat and Maize Improvement in Mexico
CSMP	The Crash Seed Multiplication Programme
DRMFS	Disaster Risk Management and Food Security
DoA	Department of Agriculture
EG	The Ethiopian Government
ECX	The Ethiopian Commodities Exchange
ESE	The Ethiopian Seed Enterprise
EPLF	The Eritrean People's Liberation Front
ETB	Ethiopian Currency Birr
FAD	Food Availability Decline
FAO	United Nations Food and Agriculture Organisation
EARO	The Ethiopian Agricultural Research Organization
EIAR	The Ethiopian Institute of Agricultural Research
FED	Food Entitlement Decline
FYGTP	The Five Year Growth Transformation Plan
IAR	Institute of Agricultural Research
IARCs	The International Agricultural Research Centres
IFPRI	The International Food Policy Research Institute
IMF	The International Monetary Fund
IRRI	The International Rice Research Institute in the Philippines
GDPRD	The Global Donor Platform Rural Development
GMO	Genetically Modified Organism
GTP	The Growth Transformation Plan
GoE	The Government of Ethiopia
HAP	Household Asset Building
HDRs	Human Development Reports
HLTF	The Secretary General's High-Level Task force on Global Food Security
IFPRI	International Food Programme Research Institute
MVP	The Millennium Villages Programme
MDG	Millennium Development Goals
MoA	Ministry of Agriculture
MoARD	The Ministry of Agriculture and Rural Development
MoFED	The Ministry of Finance and Economic Development
M&E	Monitoring and Evaluation
MVP	Millennium Village Programme
MVs	Modern or High-Yielding crop Varieties
NSMDC	A National Seed Multiplication and Distribution Committee
NEPAD	The New Partnership for Africa's Development
NGO	Non-Government Organisation
OaA	Office of Agriculture

OAU	Organisation of African Unity
PASDEP	Plan for Accelerated and Sustained Development to End Poverty
PIF	Policy Investment Framework
PSNP	The Productive Safety Net Programme
RARCs	The Regional Agricultural Research Centres
R&D	Research and Development
RDPS	Rural Development Policy and Strategies
REC	The Regional Economic Communities
TPLF	Tigray People's Liberation Front
UN	The United Nations
SLMP	Sustainable Land Management Programme
SSA	Sub-Saharan Africa
SoS	Seed of Survival
UNSD	The United States Development Agency
UNCSD	The United Nations Conference on Sustainable Development
UNDP	The United Nations Development Programme
UNHCR	The United Nations High Commissioner for Refugees
USDA	The United States Department of Agriculture
USAID	The United States Agency for International Development
WB	The World Bank
WEF	The World Economic Forum
WFP	The World Food Programme
WHO	The World Health Organisation
WTO	The World Trade Organisation

Chapter 1. Background

1.1 Introduction

The main concern of this thesis is food insecurity. Taking Ethiopia as a core case study place, I have critically examined the Ethiopian Government (EG) current food security policy process through the African Union (AU), its implementation process and its effectiveness at a *Kebele* (village) level from the farmer's perspective. Selecting Ethiopia for this study was appropriate as Ethiopia has been known as one of the main food insecure countries of Africa since the 1970s, and the Government is still struggling to reduce the number of people food insecure.

Food is one of the most fundamental human needs and it is what we eat that sustains our health, our well-being and improves our quality of life. However, food insecurity for millions of people at a global level is still a great challenge. In 2015, according to FAO (2016), around 800 million people globally, 230 million in the Sub-Saharan African (SSA) region and 10 million people in Ethiopia were estimated to be food insecure. There are clear international, continental and country level policies in place with the aim to reduce the number of people food insecure, but the problem still persists.

Increasing food security in Ethiopia is one of the main objectives of the Ethiopian Governments' policy plan. Therefore adopting food security policies through the African Union and incorporating it with its own policies is the Ethiopian Government current high priority plan. Usually people at the ground level are the receivers of policies that are being initiated and made by very few powerful actors at the top level. Whether these policies bring positive or negative changes; or are effective after the implementation process at the ground level is one of the key factors that has been studied for this PhD work. What it means to be food secured from the perception of the farmer's that participated in this study is also assessed and discussed in this study.

Therefore, I have critically assessed, examined and discussed the African Union and the Ethiopian Government food security policy formation process, implementation process and the effectiveness of the policy at a ground level from the farmer's perspective. To be able to do this work, first I have undertaken the relevant food security policy theoretical study through desk research at Newcastle University. I then travelled to Ethiopia in April 2013 to conduct the

policy process and high-level implementation process data. I have also went back in April 2014 to collect data for the policy implementation process until it reaches the people at a ground level and assessed the effectiveness of the food security policy at the village level from the perspective of the people interviewed in the study. I have organized the chapters for this thesis in the following way.

Chapter One outlines the background desk-based research on global food security, the right to food, sustainable food security and briefly discusses the issue of food in Africa; including Ethiopia.

In **chapter Two**, I have discussed the theoretical frameworks and models I have used for assessing my results precisely. In order to critically analyse the food security policy making process of the African Union and the Ethiopian Government, I have used the theoretical framework (Discourse and Narratives/ Politics and Power/ and Actors and Networks) model that was developed by Keeley and Scoones (2003). I have also used the (Top-Down) policy implementation approach model as I have followed the African Union policy to Ethiopia; and Ethiopia implementing it through the decentralised system until it reaches the people on the ground. Assessing whether the policies are being effective; and what it means to be food secured from the people's perspective, I have adopted the (Sustainable Food Security Increasing Human Well-Being and Human Development Approach). I have discussed the Amartya Sen's (1998) freedom and entitlement concept and Max Neef's (1991) human needs approach in this section. In this chapter, I have also outlined the gap in literatures this thesis fills, my original contribution to this field of study and research questions that emerged from the literatures are also stated here.

In **chapter Three**, which is the methodology chapter is where I discuss the methods I have used in assessing the current food security policies and implementation process of the African Union and the Ethiopia Government to increase sustainable food security. I have also discussed how I assessed the effectiveness of the policy increasing sustainable food security on the ground from the people's perspective by using a case study approach and conducting a qualitative data in two selected villages in Ethiopia.

Chapter Four discusses the existing food security policy making and implementation process of the African Union and the Ethiopia Government. The role Research Organisations play in Ethiopia in bringing sustainable food security in a long term so that it helps people increase their well-being and enhance their human development is also discussed in this chapter.

Chapter Five discusses the African Union and the Ethiopian Government politics of food security policy making process. In this section; discourses and narratives, politics, power and interests and the actors and networks involved in the policy making and high level implementation process of the AU and Ethiopian Government related to food security policy are discussed. The opportunities and challenges of research and development sector in delivering research that is relevant to the people on the ground is also assessed here.

In **chapter Six** is where I have analysed the case study data findings I have collected from the two selected villages in Ethiopia. After following the top-down approach until policy reaches the people on the ground, I have assessed the Ethiopian Government food security policy; the Agriculture Transformation Plan (ATP); its efficiency and effectiveness at household levels from the perspective of the people interviewed for this study.

Chapter Seven discusses the sustainable food security concept connecting it to human well-being and human development in the selected villages. I have assessed this from the people's perspective and relating it back to the existing relevant literatures. What it means to be food secured for the farmers and the challenges and opportunities of the food security policies in place as perceived by the people is analysed in this chapter.

Chapter Eight then concludes the thesis by re-visiting the global food security and the right to food concept; this is by relating it back to the Ethiopian Government and the AU policy on food security. This chapter also re-visits sustainable food security, human well-being and human development in the two villages relating it back to the policies in place. And finally, I give further recommendations for further future study in this conclusion chapter.

The following section, 1.2 discusses the background study of food security including the right to food and global food security and sustainable development in order to give a broad perspective of the topic studied for this thesis.

1.2 Food Security

The concept of food security has been evolving over the last 40 years (Coates 2013). The most widely accepted definition of food security derived from the 1996 World Food Summit Plan of Action is:

"*Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life*" (FAO 2013).

Global food insecurity has been a growing problem since the 1970s. Most recently, the 2007-2008 economic and food crisis has attracted the international community's attention; as in 2008 it put around 1 billion people at high risk. The crisis has impacted especially the poor people who spend a large share of their income on purchasing food (FAO 2013). This has raised more concerns regarding the food insecurity issue (Brinkman *et al.* 2010). For instance, the United States Department of Agriculture (USDA) and the World Bank (WB) estimated that somewhere between 75 and 160 million people went below the hunger or poverty line from the impact of the 2007-2008 global food crisis alone (Verpoorten *et al.* 2013).

Governments, the United Nation agencies and many other social movements have assessed its causes and the ways to tackle it. As a result, a special high-level task force combining all UN agency heads has been set up in 2008 by the Secretary-General. This was with the goal of creating solutions to food insecurity, hunger, famine and malnutrition at the global level and aimed to improve people's right to food (Golay 2010). In order to clarify the food insecurity related terms, table 1.1 shows the common languages used in this thesis.

Table 1.1 Definitions of different types of food insecurity related terms, source: FAO (2012).

Food Insecurity	Is the state of being without reliable access to a sufficient quantity of affordable and nutritious food
Malnutrition	Is a lack of proper nutrition, deficiencies caused by not having enough to eat, not eating enough of the right foods or it is an outcome of food insecurity
Hunger	Is understood as a feeling of discomfort or painful sensation caused by insufficient food energy consumption
Famine	Extreme scarcity of food

1.2.1 The Right to Food and the Concept of Food Security

- **The Right to Food**

All humans, despite their racial background, the colour of their skin, their gender, religious belief, language, political view, country or social background origin, birth or other status have the right to be free from food insecurity and hunger and have the right to adequate and sufficient food (FAO 2014). In the 1948 Universal Declaration of Human Rights, the Right to Food has been recognised as part of the right to sufficient standard of living, and it is protected in the 1966 International Covenant on Economic, Social and Cultural Rights (FAO 2011). The Right to Food is also protected by Regional Treaties and National Constitutions. The right to adequate food according to the declaration is defined as:

"The Right to Adequate Food is realised when every man, woman and child, alone or in community with others, has physical and economic access at all times to adequate food or the means for its procurement" (Universal Declaration of Human Rights 1948).

The United Nations High Commissioner for Refugees (UNHR) (2013) has also defined the right to food as:

"The right to have regular, permanent and free access, either directly or by means of financial purchases, to quantitatively and qualitatively adequate and sufficient food corresponding to the cultural traditions of the people to which the consumer belongs, and which ensures a physical and mental, individual and collective, fulfilling and dignified life free of fear" (UNHR 2013).

The right to food does not mean a right to be fed; but it means mainly the right to feed oneself in a dignified way. Governments must ensure that people have the enabling environments in which they can use their capacity to obtain sufficient food for themselves and their family members. Moreover, UNHR added that individuals, households and communities must meet their own food need, using their own efforts and methods with the resources they have available. In order for this to happen, individuals or groups must be able to live in conditions that allows them, either to produce food or to buy it (UNHR 2013).

The Committee on Economic, Social and Cultural Rights (2014) stated that the right to food is a comprehensive right. It is not just a right to a minimum ration of proteins, calories and other particular nutrients in a food, but it is a right to all healthy and nutritional essentials that one requires to live an active, healthy and well-balanced life and it is also the means to have access to it. Food access, availability, adequacy, utilisation and stability factors are vital elements to food security. These factors are described as follow.

Food Availability; according to the United Nations Special Report on The Right to Food means that food should be available physically for the individuals, households or communities. This must be available from natural capitals either by food production through land cultivation or animal farming. Moreover, food sources must also be available from fishing, hunting or gathering. In other words, food availability tackles the supply side of food security and is influenced by the stages of food production and its availability for sale in the markets (FAO 2008).

Food Accessibility; means that being able to have the guarantee to access food physically and economically. Economic accessibility suggests that individuals, households and communities must be able to afford food or have the capacity to buy food in order to meet their dietary need without compromising any of their other fundamental needs. Physical accessibility means that everyone regardless of their gender, age or race must have access to food (UNHR 2013).

Food Adequacy; refers to food meeting dietary needs, taking into account the person's age, his or her living situations, health, culture or livelihood. Moreover, food must be safe for consumption and free from dangerous materials or chemicals such as contaminations from factories or agricultural wastes, this includes remains from chemical pesticides and fertilisers (UNHR 2013).

Food Utilisation; is how the body makes the most of the various nutrients in the food. The diversity of diet and the sufficient energy and nutrient intake is the key to individuals' health and well-being (FAO 2008).

Food Stability; is also one of the most significant factors to food security. Food intake might be adequate for an individual or families; however one can still be food insecure if food access is periodical. Political instability, discrimination, economic and environmental conditions are some factors that contribute to food supply instability (FAO 2008).

The issue of physical access to food, its availability, stability, utilisation and affordability must be taken very seriously in all the policy efforts that are set out to improve the right to food and advance human development at all levels. It is a fact that food security is one of the most vital elements to human development; and ensuring a sustainable future means making huge changes in how we produce, process, distribute and consume food (UNCSD 2012). For this to happen; policy, scientific and technological innovations must be taken very seriously and cautiously by the policy makers and the society.

- **The Concept of Food Security**

The concept of food security has been going through evolutionary changes in the last 50 years (FAO 2014). Food security in the 1950s was measured fundamentally in terms of production; it was assumed that if we produce sufficient food, food will be available in the market as well as in the household. However, in the 1970s there was a recognition that producing enough food does not actually lead to food security (Swaminathan 2001). Scholars such as Pinstrup Andersen (2009) stated that food security in its narrowest definition is that:

"*Enough food is available, whether at the global, national, community or household level*" (Pinstrup, 2009, p. 5).

Pinstrup (2009) added that when we talk about enough;

"Is it enough to meet economic demand and if so, at what price, or is it enough to meet energy and nutrient requirements? (Pinstrup, 2009, p.5).

According to WFP (2013), food security is not just about producing and supplying. For an individual, communities and societies to be food secured in a sustainable manner, food availability, accessibility, stability of supply, affordability and the quality and safety of food must be met (WFP 2013). WFP added that quality food must be available consistently and

sufficiently in quantities in a day-to-day basis if individuals, families and communities are to be food secured.

People must also have the ability and capacity to produce and stock up food and also governments must be able to bring in food from elsewhere to the people when needed. In other words, individuals, households and communities must be able to regularly acquire quality, adequate quantities of food through for instance, by purchase or and by home production to sustain their health and general well-being. Moreover, the food that is consumed by people must have a positive nutritional impact on the consumers' health. Not only that but the concept of food security also involves cooking, storing and sanitation practices, people's health, eating and sharing practices within the household (WFP 2013).

The United Nations Conference on Sustainable Development (2012) in the Rio+20 policy brief report specified that increasing food productivity will play an important role. However, creating an environment where people can have more accesses to food and having a more equitable and resilient food systems is the key to global food security. A food system is a system that involves activities such as producing, processing, distributing, marketing, preparing and consuming food. In time, the outcomes of these activities contribute to food security (UNCSD 2012).

Even though political actions are greatly increased by the setting up of agendas and targets, the multi-dimensional aspects of the right to food and food security makes it hard to measure at the global level. Some measurement guides are available in respect to food availability, access and utilisation; for instance, agricultural productivity, food prices, nutrition scales and childhood stunting (UNCSD 2012). Lessons are learnt across the wide food security literature that sees food security through different angles, from food production to environment and health and it provides a platform to outline key features and outcomes of a resilient and equitable global food security system (Misselhorn *et al*. 2012).

1.2.2 Global Food Security

Food is an intimate part of people's daily lives, and how we produce our food and distribute it so that all people have access and entitlement to it is fundamental to our existence (Cordell *et al*. 2009). Food is a basic biological necessity and it is a vehicle for the way people interact with family, friends and themselves. It is also connected with seduction, power, pleasure, pain, caring and sharing (Lang and Heasman 2015).

Food insecurity currently is a day-to-day reality for millions of people worldwide. This issue has been challenging policy makers and researchers at a global, regional and national level for a number of decades now (Godfray *et al.* 2010). Currently, at a global level around 800 million people have been denied their rights to food and are experiencing food insecurity (FAO 2016). The World Food Programme (WFP) (2013) mentioned that worldwide, more than two billion people suffer from a lack of vitamins and minerals that are essential in the food they consume. About six million children die every year from malnutrition or related diseases mainly in developing nations, and this accounts for about half of all the deaths that are preventable.

The specific group of people particularly suffer from food insecurity, malnutrition and hunger are smallholders or landless people, mainly women living in remote areas with less productive lands (FAO 2015). Usually, it is assumed that deaths from hunger generally occur in times of draught, famine and wars, but the fact is that only about 10 per cent of these deaths are the outcomes of conflicts, wars, natural disasters or extreme environmental conditions. The other 90 per cent of the deaths are related to long term food insecurity and persistent lack of access to sufficient food (Verpoorten *et al.* 2013).

The international community such as the United Nations and its member countries have been participating in international gatherings in an effort to find solutions to the unprecedented increase in the number of food insecure people globally for a few decades now (Golay 2010). Table 1.2 shows the international conferences held focussing on increasing food security for the global population.

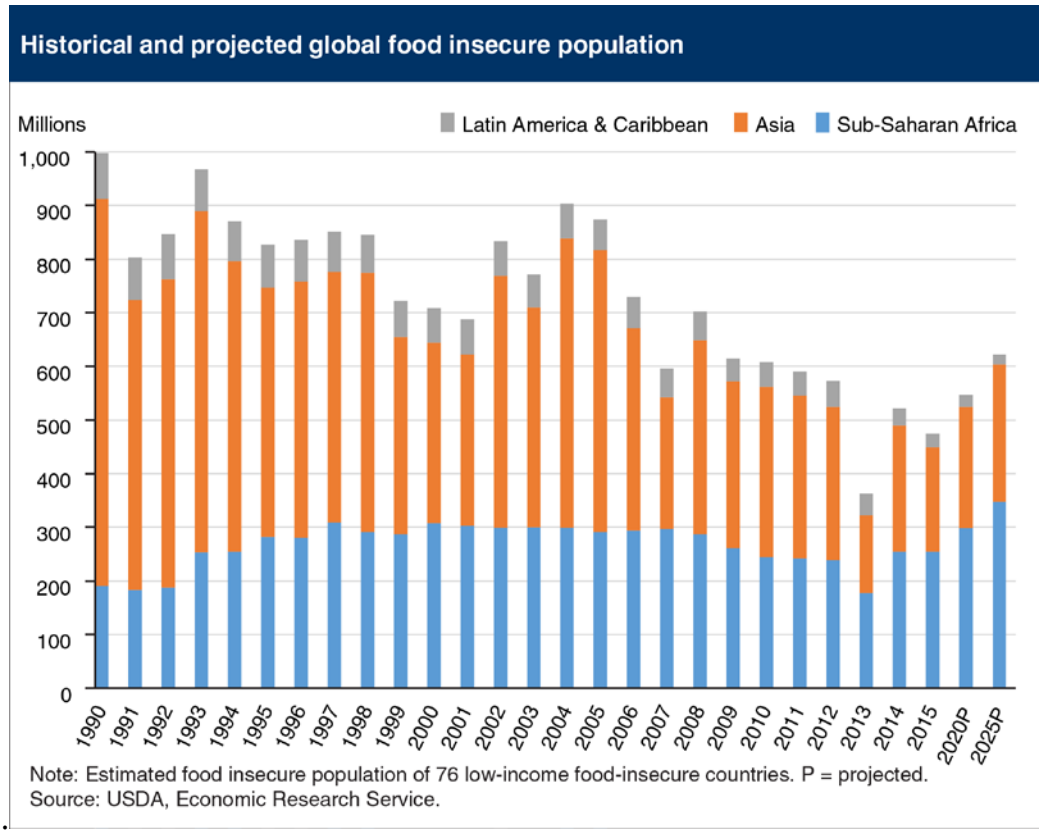
Table 1.2 The major international conferences to reduce global food insecurity and hunger, Source: FAO (2015).

Year and Topic	Number of Food Insecure People	Global Policy Agenda
1974: The World Food Conference	**500** Million People	To eradicate child hunger in 10 years.
1996: The World Food Summit	**830** Million People	To reduce the number of hungry people by half by 2015
2000: Millennium Summit (MDG)	**850** million People	To reduce extreme poverty and hunger by half by 2015
2008: The FAO High-Level Conference on World Food Security	**1** billion People	To finding solutions to hunger and malnutrition
2015: 2nd International Conference on Global Food Security	**800** Million People	To deliver state-of-the-art analysis, inspirational visions and creative methods coming from research from a wide range of areas
2015: Commission on Sustainable Development	**800** Million People	To implement new sets of agendas for Sustainable Development including improving food security

Since the 1970s, global leaders collectively made commitments with statistical targets for battling food insecurity and hunger. For instance, in 1996, in the Rome Declaration on World Food Security and the World Food Summit Plan of Action they promised to cut by half the number of food insecure people by 2015. Then four years later, in the 2000 UN Millennium Declaration, leaders have promised to halve the number of the food insecure and hungry by 2015 (UN General Assembly 2000).

In 1996, the international leaders pledged to decrease the number of food insecure people to 421 million by 2015, but, in the year 2000, their promise amounted to reducing the number of food insecure people to 591 million by 2015 (Golay 2010). However, there is evidence showing that these objectives have not be reached, as around 800 million people were still food insecure globally in 2015 (FAO 2016). Figure 1.1 shows the number of food insecure in the world in 2016.

Figure 1.1 The number of food insecure people in the Latin America and Caribbean, Asia and Sub-Saharan Africa (in millions), Source: USDA (2016).



According to figure 1.1, in the coming years, the number of food insecure people is expected to decrease in Latin America and Caribbean and Asian countries. However, on the other hand, it is estimated to increase in the sub-Saharan African countries by 2020 and 2025. The number of people currently food insecure globally is unacceptably high and the prediction for the coming decade shows that food will still be a great issue mainly for the Sub-Saharan African nations. The United Nations Comprehensive Framework for Action (CFA) presented two sets of actions to promote a comprehensive response to the food challenge and address the rights to food. CFA has planned to implement its goals at the national, regional and global level in the short, medium and long-term plan to improve food security (UN 2015).

The CFA stated that it is vital for countries to set out strategies to ensure that all people are able to enjoy the right to food and consume nutritional food by focusing on the needs of especially the most vulnerable communities such as smallholder farmers. Since the establishment of the Secretary General's High-Level Task Force on Global Food Security (HLTF) in 2008, member agencies have worked very hard collectively and individually towards the CFA outcomes. They scaled up support to nations affected by the food insecurity issue with urgent measures to mitigate and prevent hunger and increase food access and its availability (UN 2015).

The Secretary General's High-Level Task Force on Global Food Security short term plan has focussed on enhancing and improving access to emergency food assistance, nutrition interventions and safety nets. It was also to boost the smallholder farmer food production system, adjustment to tax policies and trade and managing macro-economic implications of food price instability. The long term plan was to expand social protection systems, sustaining growth in food production by smallholder farmers and improving international food markets (FAO 2015).

In recent years, there has been a debate among such as the UN policy makers about the current and future food needs. It is argued that food security cannot be met by the current levels of production therefore, there must be more food production to be able to feed the growing population of the world, which is estimated to reach 9 billion by 2050 (WHO 2013). Moreover, according to Freibauer *et al.* (2011), changing diets in the newly emerging economic countries such as China, India, Brazil and Nigeria will bring about a 70 per cent increase in food demand.

The use of the term food security at a country and global level tends to focus on the "*production*" side of the food agenda. However, one might ask that is there enough food being produced globally? There is a growing recognition that there is enough food in the world to be able to feed everyone adequately but the problem is distribution (Pinstrup 2009). According to FAO (2014), there is more than enough food in the world to feed everyone; for example there were record grain harvests in 2007. Moreover, over the past 20 years global food production has increased steadily at over 2 per cent a year, while the rate of the world's population growth has decreased to 1.14 per cent a year. This evidence is showing that population is not outstripping food supply.

If we find the answer is "*yes*" there is enough food that is being produced at the global level to be able to feed the world's population; then how does availability assure access and entitlement? According to Pinstrup (2009), the distribution of the available food is critical in this manner and if food security is to be a measure of individuals, households or community's' well-being, it has to address food access and entitlement. There is a recognition that the primary causes of food insecurity are economic and political segregation, social inequality and discrimination; and eliminating these issues would greatly enhance food security for people (Golay 2010). J. De Castro (1952), Chairman of the FAO Executive Committee from 1952 to 1956, quoted that:

"*Hunger is exclusion: exclusion from the land, income, jobs, wages, life and citizenship. When a person gets to the point of not having anything to eat, it is because all the rest has been denied. This is a modern form of exile. It is death in life*" (J. De Castro 1952).

Even though there are now clear evidences showing that food security is not just about production; but there is still a huge push by the international policy makers for more food production agenda. It is believed that the current level of production is not sufficient to meet the growing population food demand. According to IFPRI (2015), the current food production systems are highly unsustainable. The methods are creating widespread problems with land degradation, soil erosion, water extraction, over-fishing and the system heavily relies on fossil fuels derived energy for synthesis of nitrogen fertilisers and pesticides. Moreover, emission from the food production system to the air and water is a massive problem to the environment creating unsustainability

1.3 Sustainable Development and Food Security

Sustainable development currently is a very common phrase that is used internationally, nationally and locally and it has been a global agenda for some time. In the 1950s and 1960s the concern about environmental issues emerged. There was a huge concern over the patterns of economic growth and development that was taking place as it was increasingly becoming unsustainable and depleting the natural environment. Some of the fundamental works that articulated this matter included Rachel Carson's Silent Spring (1962), Garret Hardin's Tragedy of the Commons (1968), the Blueprint for Survival by the Ecologist magazine (1972) and the Club of Rome's Limits to Growth report (1972) (Sustainable Development Commission 2009).

This environmental movement did get an international recognition and has led to a first major United Nation conference on the Human Environment, that was held in Stockholm in 1972 (UN 2008). This conference did produce a series of recommendations that led to the foundation of the UN Environment Programme (UNEP) as well as other national environmental protection agencies at the national level (High Level Panel on Global Sustainability 2010). Between the 1970s and 1980s, the cold war had an impact on the differences between the North-South political issues and very little attention was given to the environmental issues that have arisen before. Throughout the Cold War, peace was sustained globally but conflicts persisted locally, often by replacement for the superpowers; many of these conflicts took place in Africa and the Middle East (UN 2008).

In 1987, the World Commission on Environment and Development published the very important document "*Our Common Future*" also known as the Brundtland Report. This report was when the term "Sustainable Development" became popularised. According to the United Nations Department of Economic and Social Affairs Division for Sustainable Development, "*sustainable development is development when it meets the needs of the present without compromising the ability of future generations to meet their own needs*" (Misselhorn *et al.* 2012). The report did merge environmental, social and economic pillars together and the emphasised solutions to be global. The report outlined that:

"*The environment does not exist as a sphere separate from human actions, ambitions, and needs, and therefore it should not be considered in isolation from human concerns. The environment is where we all live; and development is what we all do in attempting to improve our lot within that abode. The two are inseparable"* (High Level Panel on Global Sustainability 2010).

The report has been accepted by the United Nations General Assembly and led to one of the major international conferences held by the UN on Environment and Development in Rio de Janeiro, Brazil, in 1992. The conference was attended by many heads of states from all over the world to set out the principles of sustainable development in detail. The 1992 Rio declaration was inspired by the spiritual expression and principle of "*Harmony with Nature"* stating that:

"*Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature"* (UNCSD 2012).

The 1992 Rio Summit adopted an agenda for environment and development in the 21st century and coined it as "*Agenda 21*". This agenda required each nation to adopt a Programme of Action for Sustainable Development that contains the Rio Declaration on Environment and Development and it was accepted by 178 governments. Agenda 21 identifies each state's right to pursue progress economically and socially and it assigned to nations the accountability of adopting a model of sustainable development. In 1997 the UN held Earth Summit +5 that took place in New York. The General Assembly dedicated its 19th Special Session (UNGASS-19) to design a Programme for the Further Implementation of Agenda 21 (UNCSD 2012).

In 2000, the Millennium Summit also took place in New York United Nations headquarters and was attended by 189 heads of states from around the world. The purpose was to discuss the role of the UN in the 21st century, and the eight Millennium Development Goals (MDGs) were adopted with an achievement target of 2015. The eight goals were: Eradicate extreme poverty and hunger; Achieve universal primary education; Promote gender equality and empower women; Reduce child mortality; Improve maternal health; Combat HIV/AIDS, malaria and other diseases; Ensure environmental sustainability and Create a global partnership for development with targets for aid, trade and debt relief (UN 2012).

UNDP (2015) stated that even though generally poverty rates were still around 48 per cent, the most recent estimates shows that globally, most nations have made encouraging improvements on at least one MDG goals. For example, Ethiopia reduced its poverty rate by one third, by focusing on livelihoods and agriculture, while the Gambia reduced poverty by 32 per cent between 1990 and 2010. The UN also held the 20th anniversary of the 1992 conference in Rio de Janeiro, Brazil, from 20-22 June 2012. The Rio + 20 Summit has included five high-level and interactive sessions that has been planned and designed to present an opportunity for heads of states and other stakeholders to illustrate best practices, practical experiences and solid contributions in the implementation of sustainable development agendas (UNCSD 2012).

The Rio + 20 (2012) summit had seven priority areas, these were: decent jobs, energy, sustainable cities, food security and sustainable agriculture, water, oceans and disaster readiness. The Rio + 20 has included world leaders, NGOs, private sectors and many other stakeholders to help shape how these agencies can decrease poverty, increase social equity and protect the natural environmental at a global level (UN 2012). The conference has been one of the events were the international community made the commitment on food security, stating that:

"We reaffirm our commitments regarding the right of everyone to have access to safe, sufficient and nutritious food, consistent with the right to adequate food and the fundamental right of everyone to be free from hunger. We acknowledge that food security and nutrition has become a pressing global challenge and, in this regard, we further reaffirm our commitment to enhancing food security and access to adequate, safe and nutritious food for present and future generations in line with the Five Rome Principles for Sustainable Global Food Security adopted in 2009, including for children under two, and through, as appropriate, national, regional and global food security and nutrition strategies" (UNSD 2012).

The promise was to enhance global food productivity in a sustainable manner by improving the agriculture system and increasing agricultural diversity. It was also to strengthen and improve markets and trading systems, land management and rural development along with creating strong international cooperation and increasing private and public investments; particularly for developing nations. Sustainable agricultural practices, research and development related to sustainable agriculture technologies, rural infrastructure and rural-urban linkages, food storage capacities, developing strong agricultural cooperatives and value chains were key areas for investment and support discussed in this commitment to increase food production (FAO 2013).

Moreover, in order to increase food security and decrease hunger, commitments have been made to increase support in areas related to sustainable agriculture; including livestock, crops, fisheries forestry and aquaculture. This is at the same time by managing the land and water resources in a sustainable manner; as well as protecting plant and animal genetic resources, protecting biodiversity and ecosystems and enhancing resilience to climate change and natural disasters. The plan was also to significantly reduce post-harvest and other food losses and waste throughout the food supply chain. The natural way of food production system through ecological management has also been recognised by the UNSD team (UNSD 2012).

The global leaders and agencies such as the United Nations, World Bank, Asian and African governments, business, civil society, farmers s, development partners and other groups have taken the initiative to work together to achieve sustainable food through agricultural growth and management of the natural resources at Rio+20 conferences (WEF 2012).

The management of food production systems in a sustainable manner is one of the most critical challenges for the future of humanity (Naylor 2009). Putting great emphasis on the more food production agenda, the World Economic Forum stressed that there is a great concern and

challenge in feeding 9 billion people by 2050; and the global leaders would need a new way of thinking for agriculture to meet the global food demand. This new vision would require producing more food with the resources already available while strengthening economies in rural areas (WEF 2012). Moreover, the United Nations Development Programme (2010) stated that if we are to create a sustainable food production system, it will require improving poor people's access to land, water, energy and advanced technology.

For instance, the International Food Policy Research Institute (IFPRI) that is also working in partnership with global leaders, including the African Union, has initiated a framework of water, land and energy nexus for sustainable food production that will help increase food security and human well-being. The nexus management of the natural resources of water, land and energy; and managing them together not separate one from another is believed to be vital for a sustainable food production system, as this would help increase people's quality of life. Working closely with the natural resources, ecosystem has more benefits to both the environment and human beings in a long term (IFPRI 2012a).

Agencies, such as the UNSD encourage most countries to take action throughout their food system to increase supply, moderate demand, improve efficiency and governance, test against sustainability and meet the needs of the people. In doing this, it is also vital to understand the barriers of social and economic context of innovative public, private and third sector coordination. Moreover, it is very important to reduce food waste. For instance, about 30 per cent of all food produced is never consumed (Godfray 2012).

Even though food production is an important factor, food security cannot be met by just pushing a more food production agenda. According to IFPRI (2012), global food insecurity will remain a worldwide concern for years to come as millions of people around the world do not have access to sufficient protein and energy in their diet, and suffer from some form of micronutrient malnourishment.

1.4 Sustainable Food Security in Sub-Saharan Africa, Ethiopia

There were many efforts made by the international community to reduce food insecurity, such as efforts made in reaching the targets set out by the Millennium Development Goals. Even though the number of people living in extreme poverty and proportion of undernourished people in developing regions has declined by more than half since 1990; but unfortunately, millions of people were still chronically undernourished as of 2015. For instance, in the Sub

Saharan African countries, over 90 million children under the age of five were alarmingly underweight, and one person in every four still goes hungry (UNDP 2016).

Despite the many political, economic and social factors contributing to the food insecurity issues; according to FAO (2015), currently investing in the agriculture sector in order to increase food security is still the top of the international leaders' agenda. Supporting this, the United Nations in 2015 has laid down a set of new Sustainable Development Goals (SDGs) that replaced the Millennium Development Goals. At the United Nations Sustainable Development Summit on 25 September 2015, more than 150 world leaders including African leaders have adopted the "*2030 Agenda for Sustainable Development"* to end hunger and poverty, fight inequality and injustice and tackle climate change by 2030.

The goal brings together the three sustainable development; the economic, environmental and social aspects and consists of 17 goals and 169 targets that will apply to all UN member countries of the world. Goal Two deals with "*Ending hunger, achieve food security and improved nutrition, and promote sustainable agriculture*" (UNCSD 2015). The UN member nations including those in the Sub-Saharan African countries such as Ethiopia have adopted these new goals and are now implementing (FAO 2016).

Transforming the African Agriculture system in order to eradicate poverty, increase food security and reach a middle income earning region though the New Partnership for Africa's Development (NEPAD) agency using the Comprehensive Africa Agriculture Development Programme (CAADP) framework is the current key policy in place in Sub-Saharan Africa. In Sub-Saharan Africa, agriculture contributes around 25 per cent of GDP and about 70 per cent of the labour force is involved in agriculture. Moreover, it provides livelihoods for more than 65 per cent of the population (Scoones 2011).

According to the African Union leaders, under the African Union's Comprehensive Africa Agriculture Development Programme, some African Nations such as Ethiopia have promised to raise agriculture's share of their country level budget by 10 per cent in order to accelerate the Green Revolution for Africa programme. The Green Revolution for Africa was set up in 2006 by the Alliance for a Green Revolution in Africa (AGRA). Moreover, African Governments working with foreign private companies are also seeking to stimulate agriculture production (Hunt and Lipton 2011).

To address the food insecurity issue in the region, AGRA is already implementing agriculture intervention programmes in order to address farmers' lack of access to improved seeds,

artificial fertiliser and pest-herbicides to help small-scale farmers increase productivity. AGRA is also providing active support to African crop breeding teams to help them develop seeds with higher yields and it is also working with small seed companies to breed, multiply and market high quality hybrid seeds (AGRA 2016). Moreover, CAADP works with AGRA to improve road access for market and also to support research to enhance sustainable food security in the Sub-Saharan Africa region (Scoones and Thompson 2011).

In recent years, the Sub-Saharan African nations have sustained positive economic growth (Shimeles and Delegn 2013). Most countries have made some positive changes in achieving the MDGs, such as gender equality and access to primary education (FAO 2014). The World Bank (2016) stated that for the Sub-Saharan African countries, the poverty rate has been declining at about one percentage point a year. Moreover countries such as Ethiopia, Rwanda, Gambia and Malawi have seen declines of 25-40 per cent in under-five mortality in the last decade. However, this progress has been slowed down as most of the Sub-Saharan African countries including Ethiopia were worse hit by the global 2008 food and financial crisis (AllAfrica 2016). This has increased the number of people food insecure in the region, as in 2015, this number was estimated to be around 230 million (UNSD 2015). Therefore, tackling food insecurity remains one of the greatest challenges the Sub-Saharan African policy makers face.

Ethiopia is one of the African countries that is developing its economy at a fast rate; and in recent years, the country has made great progress in terms of health and education (UNSD 2015). However, food insecurity remains a great challenge for the Ethiopian Government. In 2015, around 25 million people were believed to be living in extreme poverty and 10 million people were suffering from chronic food insecurity in Ethiopia (FAO 2015). According to the WB report (2012), food insecurity problems of Ethiopia exist within the urban and rural population, urban food insecurity is caused according to Amare (2010) as a result of food price rises, unemployment and poverty. In the rural areas, food insecurity mainly derives from limited off-farm activities and diversification and limitations of rural land holdings; where more than one-third of the households cultivate less than 0.5 ha of land under rain-fed agriculture (FAO 2013).

Ethiopia is one of the African Union members of the 54 countries. As a member state, the country has been adopting the African Union's food security policy that is currently under the NEPAD Agency, CAADP framework. The Ethiopian Government also has its own food

security policy that is in place currently. The policy that deals with food security under the Growth Transformation Plan (GTP) is the Agriculture Transformation Plan policy (ATP); and this ATP policy focuses on the agriculture sector. Through the transformation of the agriculture sector, the Ethiopian policy makers believe that the country could become a middle income earner by 2025 and poverty and food insecurity would reduce greatly. Therefore, this study has critically assessed these policies in place, the implementation process until it reaches the people on the ground and whether these policies are effectiveness or not from the perspective of the people that participated in this study at a village level in Ethiopia.

1.5 Conclusions

Food insecurity has been an agenda for over 50 years now, and the need to feed the people that are currently food insecure worldwide is at the top of the agenda for the global leaders. This is to be achieved through more food production. It is argued that, in order to feed a growing population and increase their well-being whilst protecting the ecosystems, the world will need a new method to produce more food with the water, land and energy resources available and finding ways to increase quality and quantity of resources. It is clear that just producing more food does not guarantee food security. There is an argument that there is enough food in the world to be able to feed everyone on earth, therefore, food production alone will not secure food for communities or individuals. Producing food in a sustainable manner, its affordability, availability, accessibility, nutritional value, quality of food, self-reliant of food are all critical issues that need to be addressed if communities or individuals are to increase their food security status, meet their need and increase their well-being.

From the above discussion, it is clear that there are a number of frameworks and policies made by the international community and many conferences have been held to tackle food insecurity. Ethiopia, as a member of the African Union and the international community has been adopting the policies in place; however food insecurity remains a reality for millions of Ethiopians. This thesis therefore examined the links between policy formation, policy implementation process and effectiveness of the policies at a village level.

1.6 Research Aim and Objectives

Research Aim

The aim of the thesis is to understand the top-down food security policy process of the Ethiopian Government within the African Union and evaluate the implementation process and effectiveness from the people's perspective at the village level.

Research Objectives

1. To identify the African Union specific food security policies and its process
2. To identify the Ethiopian Government food security policy and assess its process
3. To explore the role of the Ethiopian Research Organisations in the food security policy making and implementation process and the organisations management system
4. To analyse the Ethiopian Government food security policy adaptation and implementation process until it reaches the people at a village level
5. To assess the effectiveness of the policies being implemented on the ground as perceived by the farmers
6. To examine what it means to be food secured from the farmers' perspective.

1.7 Structure of the Thesis

This thesis has critically examined the Ethiopian Government food security policy process inspired by the African Union and high level implementation process. The study has also looked at the implementation process, following the top-down policy implementation approach, starting from the African Union, following it to the country level, Ethiopia; how it reaches the people on the ground and its effectiveness once it reaches the people at a village level from the farmer's point of view.

Figure 1.2 shows the structure of the thesis using the top-down policy approach starting from the African Union, followed by the Ethiopian Government policy formation and implementation process and reaching the people in the village. Figure 1.3 presents the Ethiopian administrative system of policy implementation process; following the Federal, Regional Government, *Zone, Woreda* levels and the two selected *Kebele*s (villages) for this study.

Figure 1.2 Levels of Policy Formation, Implementation and Effectiveness Process.

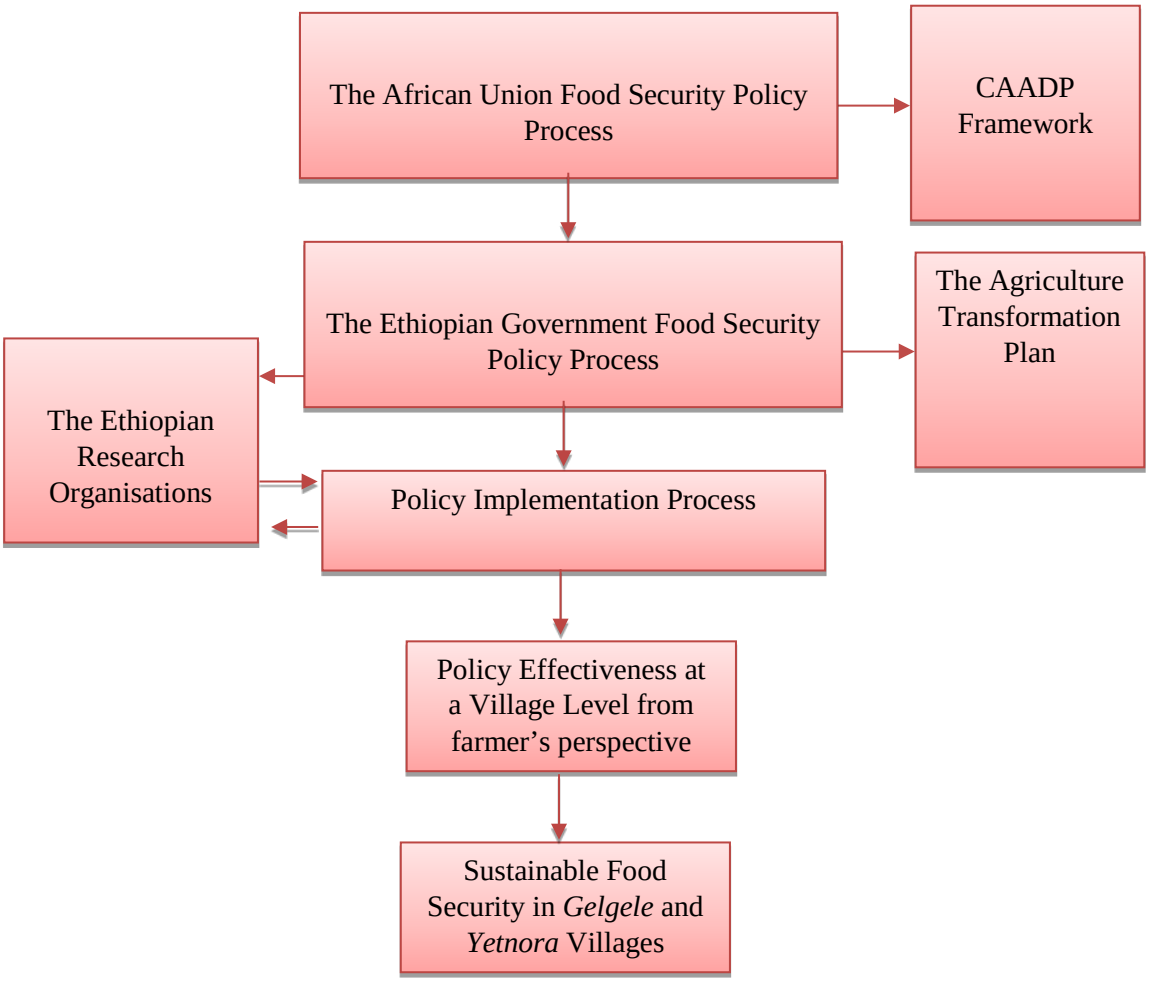
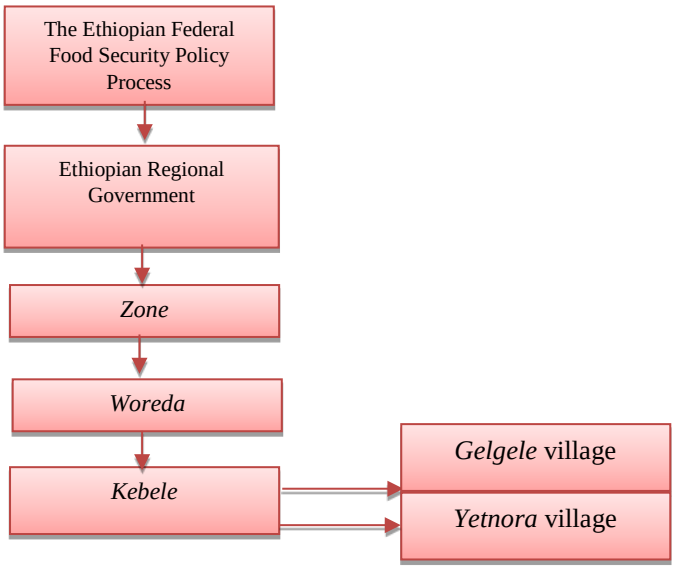


Figure 1.3 Levels of Policy implementation process of the Ethiopian Government administrative system.



The following section, which is chapter two discusses the theoretical framework used for the thesis in order to analyse the African Union and the Ethiopian Government food security policy making and implementation process and the policy effectiveness once it reaches the people on the ground from the farmer's perspective.

Chapter 2. Theoretical Framework

2.1 Introduction

In this chapter, I have outlined a number of theories that are relevant to my study and the frameworks I have used in analysing and discussing my findings. In order to be able to assess the African Union and the Ethiopian Government food security policy making process, I have adopted the theoretical framework developed by Keeley and Scoones (2003) for the analysis of African environmental policies. The key analytical categories used by this framework are "***Discourse and Narratives/ Politics and Interests/ and Actors and Networks"***. Analysis of policy implementation process was part of the aim of this thesis; and I have adopted a "***Top-Down Policy Implementation Process"*** method in order to assess the implementation process of the African Union and the Ethiopian Government food security policy. For critically examining the food security policy effectiveness at the ground level and discussing what it means to be food secured from the people's perspective, I have used the "***Sustainable Food Security for Increasing Human-Well Being and Human Development Concept***".

Literatures that are closely related to the food security issues in Ethiopia are discussed in this chapter. These are, the Malthusian approach, the Green Revolution programme and globalisation. I have selected and adopted these analytical framework methods, theories and literatures according to their close relevance with my own study and findings in Ethiopia. These are the issues of food insecurity and how policies are created at a top level and implemented top-down. Also, it is how sustainable food security and human well-being and human development are linked at a village level.

There were a number of other literature reviews related to the food security and policy and sustainability and well-being topic areas I have reviewed; however, it was after careful consideration from an in-depth desk study that I was able to select these particular theoretical concepts and used them in this PhD thesis. Literatures associated with food security within the AU and the Ethiopian Government policy environment has also been discussed in this section of the thesis for its close relevance. The next section discusses the theory of policy making process.

2.2 Policy Making Process Theory

The term policy is used in various ways, in different settings and places (Clark 1996). Policy is a broad term and it is hard to pin down to just one definition. Clark added that policy refers to a prescribed course based on guiding principles adopted and followed by governments, institutions or individuals. Torjman (2005) stated that policy can also be categorised as reactive or proactive. Reactive policy emerges in response to an emergency or urgent situation that must be addressed, such as health emergencies or environmental disasters. Proactive policies are introduced and pursued through deliberate choice. Similarly, it is also not straightforward to narrow a definition of policy processes in a precise way. Springate and Blaikie (2007) mentioned that policy process can be described as the means by which policy is conceived, negotiated, expressed and perhaps brought into law and the procedures of implementation and practice.

According to Sutton (1999), debates have been going on within political science on whether policy-making is a linear and rational process or a procedure that is more chaotic and is dominated by practical, socio-cultural and political forces. Furthermore in the past years, many models have been created to describe policy process (Sutton 1999). Juma and Clark (1995) stated that policy process studies see how decisions are made, and how they are organised by actors to make their decisions. Moreover, policy is created through debates and discussions between state and a broad range of actors such as civil societies. Juma and Clark (1995) added that through a policy process, ideas are being communicated and also certain political stance are being reflected and served.

The entire life of policy according to Sutton (1999) is a chaos of purposes and not intentional. It is not at all a theme of a logical implementation of the so-called decisions through selected approaches. However, Springate and Blaikie (2007) argiued that through an intentional policy making process, policy makers can shape social reality according to their outlook and ideology of life using policy creation as a process. According to Keeley and Scoones (2003), policy-making is a diverse, wordy and complex action, where sometimes it is challenging and not stable and other times it is consistent. Springate and Soussan (2002) emphasised that policy process analysis considers policy in a holistic and wide ranging context and it provides an opportunity to identify policy constraints and opportunities.

According to Keeley and Scoones (2003), policy positions are organised by many groups of actors, this includes, government officials, non-government personnel, scientists, politicians, civil societies and rural people. Springate and Soussan (2002) arguied that policy making process in reality is a complex, messy and challenging process and it involves negotiation and power play between diverse stakeholders. The policy making process according to Keeley and Scoones (2000) is linked to three central processes. This is *"agenda setting, decision-making and implementation process*"; and the links between the three stages are firmly linear. In this method, Keeley and Scoones (2000) added that reality is measured, issues are identified, different ways and solutions are assessed, and decisions are taken by political representatives and agents who are competent experts.

However, in many cases policy making process involves complicated procedure and it involves policy learning, changes and shifts along the way to its implementation process. One of the policy making process models in a policy environment I have considered in using to discuss my findings was the linear model. The linear model outlines policy making as a "*problem solving process which is rational, balanced, objective and analytical*" (Sutton 1999, and Juma and Clarke 1995). The linear model has been called the conventional, common sense or logical model, it is the most extensively held view of the way in which policy is created (Sutton 1999).

According to Isaac (2006), decisions are made in the linear model in a series of sequential stages, beginning with the recognition of an issue or a particular problem, and ending with a set of actions to solve or deal with the problem. Isaac arguied that the linear model presents policy process as a straight-time line such that the process starts at the agenda phase and ends at the implementation phase. The linear model according to IDS (2010), is very straightforward and is still very influential in theorising about policy processes. IDS added that in this model, it is assumed that policymakers are able to consider all possible options, be able to calculate the economic, political and social advantages and disadvantages of public policy.

However, I have found that the linear model was not a suitable model for analysing the African Union (AU) and the Ethiopian Government (EG) food security policy making process. The AU and EG food security policy making process was not a straightforward process that follows an "*agenda setting, decision-making and implementation process"* stages. It is a more complex process, as the policy making process involves politics and power, the use of discourse and narratives and the involvement of different actors before it even goes to the implementation process.

I have found using the discourse and narratives, politics and interests and actors and networks model by Keeley and Scoones (2003) fits very well with the AU and the EG policy making process analysis. I have chosen this model because I could identify and use in my discussion the links between discourse and narratives that are being used and created by politicians at a top level within the African Union and the Ethiopian Government policy political environment. In this model, I could also use the links between the policy makers political interest and actors involved and their networks when making a policy within the AU and the EG policy environment. In the following section are some of the main important terms found in policy making process and are selected for their relevance to this study.

- **Discourse**

The term discourse as mentioned by Jørgensen and Phillips (2002) is a general phrase with different definitions covering areas from philosophy, linguistics, sociology and other disciplines. The term could mean conversation, dialogue, language, and speech, or as a specific way of discussing an idea and understanding the world or an aspect of the world. Fairclough (2011) stated that as a universal way of experiencing the world, discourses refer to expressing oneself using language. It can also be described as a broad idea that language is planned according to many patterns that individual's words and sounds follow when they take part in different areas of social settings.

According to Jørgensen and Phillips 2002), political discourse and discourse analysis' is the analysis of these patterns. Hewitt (2009) added that ddiscourse is used in a day-to-day language interchangeably with discussion or dialogue. For example, Keeley and Scoones (2000) arguied that the object of discourse analysis is the story of a dialogue; such analysis aims to expose the hidden language use and how language is used and narratives are created. In affirming knowledge and power and for resistance and evaluation, discourses can be identified. Moreover, Keeley and Scoones (2003) mentioned that the person in a power position can express her or his way of thinking and ideology in texts or linguistic forms using discourses.

- **Discourse Analysis**

Discourse analysis as stated by Hewitt (2009) is a research method which involves examining communication to gain new insights about the topic studied. Apthorpe (1986) emphasised that it is an effort to break down, deconstruct and identify discourses so that the outlook they bring to for instance, the development process can be understood, and the analysis of discourse encourages the investigation for alternative methods to the resolution of policy issues.

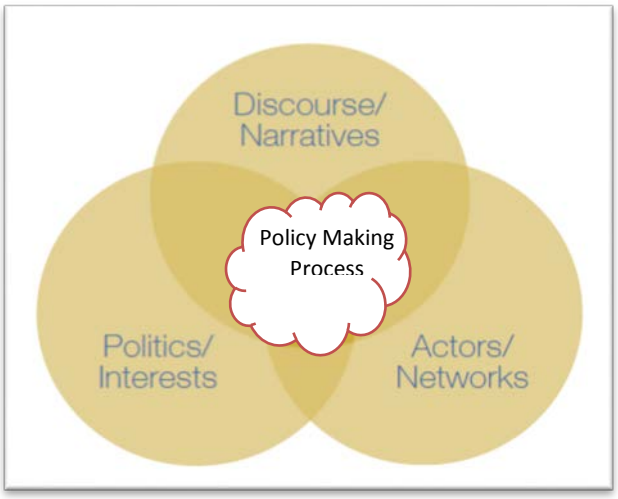
Discourse analysis according to Sutton (1999) can be divided in to two; political and development discourse. Sutton added that development discourse involves a specific way of thinking and arguing which involves the political action of naming and categorising and it usually eliminates other methods of seeing situations and perspectives. Bayram (2010) argued that political discourse is a result of politics and it is determined by history and culture. Bayram added that political discourse is thematic as it primarily related to political ideas, relations and activities. Section 2.1.1 discusses the Keeley and Scoones (2003) model I have used to analayse the AU and the EG food security policy making process and the pros and cons and more details of using this model is discussed below.

2.2.1 Discourse and Narratives/ Politics and Interests/ and Actors and Networks

Keeley and Scoones developed the discourse and narratives/ politics and interests/ and actors and networks model for the Environment Group of the Institute of Development Studies (IDS) after considerable analysis of all different kinds of themes, approaches and perspectives on the analysis of policy making processes (Van Der Lee 2010). One of the reasons why I have used this model is because Keeley and Scoones have done a lot of policy related analysis work based in Ethiopia and therefore, their work relates closely to my work in Ethiopia too. Secondly, this model fits very well with the food security policy making process analysis work I have done in Ethiopia that deals with politics and power, discourse and narratives and actors involved and their networks. This therefore has given me an advantage for using this model.

There were other models I have considered as discussed above such as the linear model before deciding what model to adopt for discuss the policy making process data. However, the Keeley and Scoones model has helped me expand my examination and analyse the issues of food security policies and the politics involved in making these policies in place, by whom and for what purpose. The figure below, 2.1 shows the three different but overlapping arenas of the Keeley and Scoones (2003) model I have used for assessing policy making process. I focus upon the middle point were the three aspects of policy making process overlap in discussing the African Union and the Ethiopian Government food security policy making process.

Figure 2.1 Discourse and narratives, politics and interests and actors and networks policy process, Source: IDS (2006).



It is in the centre point where I have found the links between discourse and narratives, politics and interests and actors and networks within the African Union and the Ethiopian Government food security policy making process. Through this focus, I was able to discuss the issue of food security and policy creation. The disadvantage I have found in using this model was that the fact that it was constrained by the three aspects of policy making process. I have found it difficult to expand the issue of policy making process in Ethiopia as the country has a complicated political, social and historical background. For this, I have tried to go outside of the three aspects mentioned by Keeley and Scoones when I discuss the Ethiopian historical background related to food security policy making process of the country.

The model has been used to assess the African Union; NEPAD Agency and its CAADP framework and the Ethiopian Government ATP policy plan. The politics and actors involved and their influence through their power and the use of narratives in the food security policy making process is analysed in chapter five. This model is discussed in more detail below.

- **Discourse and Narratives**

According to Van Der Lee (2010), understanding why policy takes a particular shape is very important. Van Der Lee added that it is very important to capture the scientific framings to how knowledge is passed from the research to the policy sphere of specific issues creating "*narratives*" that tell the policy stories. In politics, the use of language is very important.

According to Jones and Peccei (2004), language has a power to represent or misrepresent realities. People's thoughts, ideologies and beliefs can be applied not only to guide them but also to restrict or misguide them by the use of a discourse. Bayram (2010) argued that language can be used to intertwine ideas and imaginaries to alter people's realities. In some cases, it can help improve people's well-being, but it can also systematically obscure realities and interpret them ideologically to serve unfair power relations. According to Sutton (1999):

"A discourse is a group of ideas, concepts and categories through which meaning are given to phenomena. Discourses shape certain problems, distinguishing some aspects of a situation and marginalising others. As dominant discourses set out ways of classifying people and defining problems, they have serious material consequences on the process of policy-making" (Sutton 1999, p.13).

Keeley and Scoones base their model on the theory that policy change is naturally related to the creation of specific types of knowledge (Van Der Lee 2010). Often, the use of narratives suits specific political interests and these narratives are communicated in easy terms. For instance, according to Van Der Lee (2010) it is easy to define complex problems through the use of story-telling methods. Van Der Lee emphasised that most of the time, this creates specific solution to the issue while marginalising other choices. Through the story telling method, Keeley and Scoones (1999) stated that narratives and solutions that are available already can have long-lasting control or pressure on the policy-making process.

- **Politics and Interests**

Policy making process involves politics and interests (IDS 2010). According to Bayer and Veldhuizen (2004), in the political and bureaucratic culture, many different actors try to pursue their own political interest when designing a policy. IDS (2006) stated that through an understanding of the political structure of an organisation, one can understand why certain knowledge influences and prevails the outcome of a policy process. Apthorpe (1986) argued that a critical feature of all policy practice is essentially and specifically "*what*" and "*who*" is included. Sutton (1999) added that policy process is impacted by different interest groups that use power and authority over policy-making. Bayram (2010) argued that:

"*It is common knowledge that politics is concerned with power: the power to make decisions, to control resources, to control other people's behaviour and often to control their values* (Bayram 2010, p.28).

Moreover, Keeley and Scoones (2003) added that many politicians are mainly interested in convincing their audience and validate their political claims. The influence of politics starts from the implementing of resources in order to form the values and behaviours of others. Through the ways in which discourses are expressed, it is possible to recognise networks of actors who, through their actions, promote and create specific discourses (Keeley and Scoones 2000).

- **Actors and Networks**

Understanding how policy is deeply rooted in networks of actors is very important (Van Der Lee 2010). For instance, whether actors from government bodies, funding agencies, professional and other relationships and specific institutions enable or constrain power dynamics in policy process needs understanding. Keeley and Scoones (1999) emphasised that by assessing the relationships between actors in a network, it is possible to examine the micro level and see how the policy making process can be manipulated by groups and the power of individuals; as actors can be either individuals or those that are connected with networks. Within a network, there often exists a common idea about a certain theme between actors (Keeley and Scoones 1999).

It is argued by Keeley and Scoones (2003), individuals are collectively making up policy and it is individuals who can apply their power and influence others. Keeley and Scoones added that to understand how the interactions between actors and their networks work can have a role that is significant in the spread of knowledge during the policy making process. Moreover, highlighting the importance of actor-oriented approaches is also vital. According to IDS (2006), to understand a policy processes, it is very important to look at all the three and the overlapping perspectives together.

- **Policy Space**

The concept of policy space creates an understanding of the reasons why some policy and institutional changes are created and implemented successfully in some situations but not in others (Keeley 2001). According to Grindle and Thomas (1991), politicians and elites have agencies set up to control the timing and content of policy reforms so that their prospects are increased for success. Moreover, Grindle and Thomas added that through the interactions of actors and networks, the norms of what is "*good*" and what is "*bad*" get formed and the narratives can be kept alive or new narratives are created. Keeley (2001) emphasised that by having un understanding of policy networks; it is easy to see why specific types of knowledge

stay in place; and this gives a chance to grasp if there is space in the policy area for possible change.

According to Keeley and Scoones (2003), discourses simultaneously have a structuring ability; as they can provide the boundaries within which people act and shape the way actors influence the world around them. These networks are as stated by IDS (2006), the methods through which knowledge is exercised through policy. What joins the network together is a sharing of some common goals (IDS 2006). Keeley and Scoones (2003) added that actors and networks are able to set up discourses in actual policy by taking advantage of policy space.

- **An Area of Overlap**

I have used the three concepts but overlapping point of Keeley and Scoones' (2003) model for assessing the AU and the Ethiopian Government food security policy making process. According to IDS (2006), the model particularly outlines the policy process and reveals three comprehensive approaches to help understand policy-making process. The link between political economy and the interactions of state and civil society and different interest groups can be articulated in this model. The model asses the histories and traditions linked to changing discourses, the use of language and how these form and direct policy problems and courses of action through narratives. It also highlights the capacity and role different actors play to make a difference in policy making; or how actors make and form policy narratives and introduce or push their interests.

Moreover, the framework outlines the political and bureaucratic context in which many different actors attempt to push their own political agendas. I have adopted this model by mainly focussing on the overlapping area. This area in which I am focussing on is not hard edged; but an open space area that allows me to go back and forth in all the three different aspects of policy making process. This has assisted me to analyse the African Union and the Ethiopian Government food security policy making process.

2.3 Policy Implementation Process Theory

Research on policy implementation has been a vital discourse among social scientists since the early 1970s when, according to Paudel (2009), Pressman and Wildavsky (1973) brought the issue of policy implementation to the fore. There is an assumption in most policy studies that once a policy has been formulated, the policy will be implemented (Burke *et al.* 2012). Which in reality is not the case, as implementation is a complex process.

Policy implementation as arguied by Paudel (2009) in most cases takes different shapes and forms in diverse cultures and institutional settings. Birkland (2001) stated that once the policy designers have settled upon a policy design and one or more tools to carry out the goals; the various actors in the policy process turn their attention to its implementation. According to Burke *et al.* (2012), in a policy implementation setting, a number of activities undertaken by government and its institutions are included in achieving the aim and objectives stated in policy agendas. Implementing a specific policy includes policy design, policy delivery, and policy review; the whole forms the "*policy cycle*". However, Burke *et al.* (2012) argued that in reality, the lines between these stages in the policy cycle can become rather vague.

Moreover, there is a general view that policy implementation is a process that is complicated, as implementing must manage multiple challenges across many levels. These are according to Burke *et al*. (2012) the transformation of systems, the changing policy service provider behaviour and restructuring settings. Schofield (2001) argued that it is vital to stress policy making and implementation processes are not necessarily "*sequential processes"* but in many occasions are "*parallel processes"* where a design or a re-design and revision of a policy can take place even throughout the official implementation steps of a policy.

Policy implementation research according to Brynard (2006) has been too restricted at times. For instance, it has been restricted as it gave more importance on cross-sectional against longitudinal studies, it was very limited in number as an influence on case study against comparative study and it has also been too restricted in policy type in a way that there was more importance on single policy nature against various policies. Moreover, it was also too limited in defining the notion of implementation, restricted to a single assessment method versus multiple methods and it was too limited in its approach, as the process was either top-down or bottom-up approach versus both (Brynard 2005).

According to Brynard (2006), the theory of policy implementation research has been evolving over time. At first, the problem of policy implementation came as something of a surprise to planners and analysts (McLaughlin 1987). In the mid-1960s and early 1970s, fundamental theories of governmental action and administrative behaviour assumed away implementation issues or overlooked them altogether (McLaughlin 1987). The evolution of policy implementation theory research has been divided in to three generations. In the early 1970s, which is known as the first generation; the idea was that policy implementation starts with a

hypothesis and implementation would occur automatically once the proposed policies had been confirmed (Brynard 2006).

Brynard added that in the 70s, theorists suggested that a political methodology of a policy implementation process could be labelled as a single-authority, top-down approach and too political. DeLeon (2001) also criticised arguing that implementation studies were generally focused on case analyses. Moreover, Schofield (2001) emphasised that there were some misassumptions that policy formation and implementation was a "*rational, linear process*. Brynard (2006) citing (Hjern and Hull, 1982) stated that in the 70s administration was subsequently seen as being "*scientific, rational, predictable and ultimately machine-like*".

In the so called the second generation, Schofield (2001) stated that literature was intentionally more analytical. It aimed to create analytical typologies for predicting policy outcomes, but mainly it focussed on the variables which affected implementation either positively or negatively. Some of the important works which can be classified into the second generation literature were Barrett and Fudge (1981) and Mazmanian and Sabatier (1983) of which both dealt with complex public sector areas extensively (Schofield 2001). Matland (1995) stated that criticism of the first and second generation models was their failure to develop testable and explanatory theory.

The second generation model was criticised for being focused on too many case studies, not enough validation and repetition. According to Schofield (2001), both models failed to provide a comprehensive blend or a unifying approach to the policy implementation analysis. Later on, as stated by Brynard (2005) also known as the analytical generation (third generation); compared to the two previous models has been less concerned with particular implementation failure and more with understanding how implementation works in general and how its prospects might be enhanced. The literature, according to Schofield (2001) was very heavily influenced by Goggin *et al*. (1990) and the justification of the model was based on the principle that the latest research addresses the dynamism of implementation processes.

According to Brynard (2005), the assessment of policy implementation has moved away from the stages of selected case studies and practical knowledge to the design of research so that understanding from research in different policy sectors can be linked. This has emerged in the third (analytical) model. Moreover, Brynard added that what helped in the view of the third generation on implementation was the awareness of the absence of and the need for causal awareness, arranging frameworks, conceptual models, analytic approaches and finally

descriptive and predictive theories. Moreover, Schofield (2001) stated that for an effective policy implementation process, a balanced pressure that is strategic, that incorporate the macro and micro world, that involves individuals at each stages and uses a top-down and bottom-up approach is vital. McLaughlin (1987) arguied that policy implementation that is based on local responses and individual motivations and beliefs are critical.

This PhD study have looked at the top-down policy implementation process, starting from the African Union, follwoing it to a country level Ethiopia. Ethiopia has a hierarchical administrative policy implementation system. It startes at the federal level, follwing the regional and *zone* level, it then goes down to *woreda* and *kebele* (village) level. For this reason, the top-down approach was suitable; and I thefore have follwed these steps to assess the policy implmentation process. The thesis has also assesed if there were bottom-up policies emerged and reach the top level policy makers.

2.3.1 The Top-Down Approach

According to Brynard (2005), the important feature of a top-down approach is that it begins with a decision of a policy by governmental, usually central government officials. Often it identifies the degree and the actions of implementing officials and target groups (Sabatier 1986). Matland (1995) argued that the top-down or bottom-up approach should be utilised depending on the type of the policy and the mission it has in which the policy is being implemented. Matland added that a top-down implementation process involves a carrying out of a policy decision by law, executive order, while the commanding decisions are located centrally by actors who seek to create the required effects.

This approach as Schofield (2001) noted also contains clear and steady goals created at the top of the hierarchical system assuming knowledge of cause and effects and it involves hierarchy of authority. On the other hand, Matland (1995) stated that the bottom-up implementation approach starts with the target groups and programme deliverers, since it is found that the target groups are the actual implementers of policy. According to (DeLeon (2001), a bottom-up model is more likely to be reflective of community interests more realistic, practical and democratic, while a top-down approach is more likely to enforce policy targeting specific interest groups.

DeLeon added that if policy is supposed to pressure people's behaviour, subsequently the bottom-up approach may go further telling people about the planned policy action to influence their behaviour. A bottom-up approach may also gather the consent of the target group before

their representatives' vote for the law. Table 2.1 shows the differences between top-down and bottom-up policy implementation approaches.

Table 2.1 Comparison between top-down and bottom-up aproach, Source: Sabatier (1986).

	Top-Down (Sabatier & Mazmanian	*Bottom-up (Hjern et al.)*
Initial Focus	(Central) Government decision, e.g., new pollution control law	Local implementation structure (network) involved in a policy area, e.g., pollution control
Identification of major actors in the process	From top down and from govt. out to private sector (although importance attached to causal theory also calls for accurate understanding of target group's incentive structure)	From bottom (govt. and private) up
Evaluative criteria	Focus on extent of attainment of formal objectives (carefully analyzed). May look at other politically significant criteria and unintended consequences, but these are optional.	Much less clear. Basically anything the analyst chooses which is somehow relevant to the policy issue or problem. Certainly does not require any careful analysis of official govt. decision(s).
Overall Focus	How does one steer system to achieve (top) policy-maker's intended policy results?	Strategic interaction among multiple actors in a policy network.

The two intellectual leading characters in the top-down and bottom-up discussion according to Schofield (2001) are Paul Sabatier, as the supporter of top-down explanations, and Benny Hjern for the bottom-up approach. Unifying the top-down and bottom-up approaches illuminated the situations when each would be most useful. Moreover, top-down policy makers use dominant bureaucratic actors who influence policy implementation from the highest level. In addition, usually, these actors are analytical (Matland 1995). Top-down policy implementation structure seeks to minimise actors, minimise change and appoint concerned agencies to implement policy. Schofield (2001) also stated that the top-down approach fails to recognise the role of political effectiveness in policy making and it fails to address the pre-legislative phase of policy creation.

Moreover, the top-down approach may implement policy with standards that citizens do not understand which might also by-pass their rational preferences. On the one hand, the bottom-up approach is concerned with the intentions and actions of actors (Schofield 2001). According to Matland (1995), a bottom-up approach can be characterised in three ways. Firstly, it focuses on the actions of local implementers in contrast to the high-level government. Secondly, no particular attention has been given to the goals of a policy, but the nature of the problem which

a policy is designed to address gets more attention. Thirdly, it tends to explain networks of implementation and in doing so, has made a vital methodological contribution to the analysis of policy implementation (Matland, 1995).

However, one of the criticisms of the bottom-up research is that it fails to recognise the factors that are responsible for local situations are central actors and central policy. This is a reversal of the top-down logic. Nevertheless, neither the top-down nor the bottom-up supporters bring up research access and practicalities (Schofield 2001). The top-down perspective starts with a policy decision, while bottom-up starts with an analysis of the multitude of actors who interact at a grass-root local level on a specific issue (Sabatier 1986). In the process, Sabatier added that the common policy stages of formulation, implementation, and reformulation tended to disappear. Birkland (2001) argued that it is very important to understand policy implementation process. This is because it is a key feature of the policy process; and learning from implementation problems can foster learning about better ways to structure policies to ensure that they have the effects that policy makers desire.

According to Brynard 2009a), policy formation and policy implementation process is not a linear process, it is a complex process, and it involves a number of stages, actors and resources for it to be effective. Brynard emphasised that policy implementation experiences should foster policy learning; in that the gradual evolution of policies should have a collective effect on policy learning. Equally, it remains an open question whether policy learning serves as a foundation for improving policy-making and policy implementation and therefore ultimately for improved programme delivery (Brynard 2009a). Birkland (2001) stated that it is therefore vital to assess the success, challenges and learning of the policy introduced to the people on the ground.

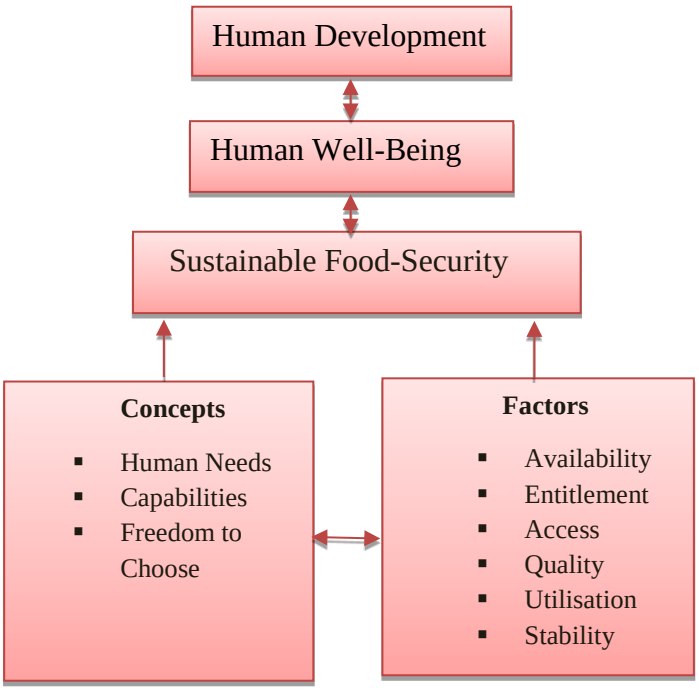
A top-down policy delivery through different types of extension systems tend to be strongly hierarchical; where the general population at the ground level is the receiver of knowledge and technology (Bayram 2010). This is the main reason for adopting the top-down approach to discuss policy implementation process of the African Union and the Ethiopian Government food security policy process. The Ethiopian Government implements its food security policy through different types of extension systems using hierarchy for the policy to reach the people on the ground.

While I was on the ground assessing policy effectiveness at a village level, I have assessed whether policy emerges from the bottom-up and reaches the policy makers at the high level. The findings are discussed in chapter six and seven in detail

2.4 Policy Effectiveness and Sustainable Food Security at a Ground Level

Once a policy is formulated, it goes through different stages of implementation before it reaches the people on the ground. After it reaches the people at a ground level, it is when it becomes extremely important to assess whether the policy is benefiting the public that plan to serve, changing their life for the better and increasing well-being from the people's perspective. I have therefore assessed the effectiveness of the food security policy at the village level in Ethiopia from the farmer's perception. At this level, I have focused my study on how these policies have contributed to sustainable food security, improved the people's life, increasing their well-being and their human development aspect from the perspective of the farmers that participated in this study. To help me assess these factors, I have used a sustainable food security, increasing well-being and human development concept. Figure 2.2 shows the links between sustainable food security, human well-being and human development.

Figure 2.2 Sustainable food security, human well-being and human development links.



Using the diagram above, I have assessed the links between sustainable food security, well-being and human development in the case of two selected villages in Ethiopia. The intention of this part of the study was not to generalise human development, well-being and sustainable food security in Ethiopia; but it was to examine this link in the two selected villages from the perception of the people participated in the study. I have mainly focussed my research at this level on how the Ethiopian Government food security policies in place are increasing sustainable food security; and how this is improving well-being and leading to a better human development prospect from the people's perspective. **The analysis of this is my contribution to knowledge to the relevant literatures.** The following section discusses the theory around sustainable food security, well-being and human development.

2.4.1 The Sustainable Food Security, Increasing Well-Being and Human Development Concept

According to the United Nations (2016), in the year 2015, around 800 million people were estimated to be food insecure at a global level. In the Sub-Saharan African region, this number was recorded to be 230 million; and 10 million people in Ethiopia were food insecure in that year. This is an urgent issue; and great concern and major changes in the current food system and political structure must take place at a global, regional and national level to increase food security. It is a fact that food security increases the health and well-being of a society; and a well-nourished society can take on to its maximum capacities and can develop its own community, area or country (Rotter and Van Keulen 2008).

The concept of food security has evolved and is now frequently accepted as; access by all people at all times to enough healthy food for an active and healthy life (FAO 2008). This thesis holds a philosophical view that food is a fundamental human need and people must have the freedom and capabilities in getting the healthy and adequate food they desire for their well-being to increase their human development. Helliwell and Putnam (2004) defines human well-being and Sen (1998) describes human development as:

"*Human well-being is defined by the individual herself*" (Helliwell and Putnam 2004, P.1435).

"Human development is defined as the process of enlarging people's freedoms and opportunities and improving their well-being" (Sen 1998, P.2)

One might ask why is it that the people who produce food suffer from food insecurity and their well-being and human development aspect is at risk? The human development and food security relationship can be traced back to the influential work of Amartya Sen on "*poverty and famines*" (Sen 1981, Sen 1982) and his succeeding work with Jean Dreze on "*public interventions to avoid hunger*" (Dreze and Sen 1989). According to Ryan and Deci (2001), human well-being refers to a best psychological functioning and experience of a person. This does not focus only on the day-to-day greeting exchanges among individuals such as "*how are you*?" but also of deep scientific study.

Ryan and Deci (2001) argued that theorists have found the problem of well-being to be difficult, controversial and the debate has many implications. Since the start of the intellectual history, there has been substantial debate about what defines the best experience and what composes "*the better, the good or quality of life*".

Veenhoven (2000) emphasised that "*quality-of-life*" and "*well-being*" indicate different meanings; because what is "*the better life or quality of life*" is defined by individuals based on their way of life and their outlook. Ryan and Deci (2001) stated that how human well-being is being defined influences the practices of government, education, parenting, teaching and general day-to-day activities. One can agree that according to Sen (1981), food is a basic need and if this need is met adequately, it would help improve the individual's quality of life; mental and physical health for better improving his or her well-being and human development prospect.

Sen based his work on a critical framework in which food insecurity, hunger and poverty is seen as a consequence of *"entitlement failure,"* or the incapability of people to demand and access food through lawful means (Conceição *et al.* 2011). Sen (1985) showed that food insecurity happens when a specific group of people could not purchase food, either because of high prices, a fall in wages, or both. He added that people face food insecurity not because food is not available, but because they have no access and entitlement to it and as a result they are forced to decrease their demand for food.

Conceição *et al*. (2011) argued that for human development, increased food security could have a tremendous impact. For example, by just basically freeing up household spending resources

other than food but spending on other necessary resources such as health and education; it is possible to increase human development. Sen (1982) added that increased food availability, accessibility, entitlement, quality and utilisation can increase human-well-being and human development. Human development can be strengthened through interventions to boost food production, continuous access to food by the poorest and most vulnerable and nutritional security to enable human development.

Anderson (2008) stressed that democratic involvement in food system choices affects more than one area. Having a truly transparent and just access to all necessary resources by farmers for food production and marketing is vital. Anderson stressed that a true sustainable food system is only that can be truly leading to sustainable human development. Misselhorn *et al*. (2012) mentioned that a fair food system ensures adequate amounts of nutritious food that are affordable and accessible to all people at all times. It also provides an equal playing field for farmers and is furthermore maintained by research and development (R&D) and innovation systems that provide to the needs of the well-off and the less-off people equally. Misselhorn *et al*. (2012) also argued that it also encourages vital elements that support a more balanced human development prospect.

According to Alkire (2002), several authors have written and listed a collection of ingredients of what they think contributes to the human quality of life, basic human needs and aspects of well-being that contributes to human development. The human needs approach by Max Neef (1991) is one example that links human needs and well-being to increase human development. Max-Neef *et al.* (1992) stressed that being able to achieve the transition of an object-person into a subject-person is in the process of development and is a challenging issue.

In the current increasingly globalised world, Max-Neef *et al.* (1992) stated that a system that is organised hierarchically and where decisions flow from top-down, there is no possibility for people to have free active participations according to their will. Development must nurture local spaces, facilitate micro-organisations and support diversity of cultural environments comprising civil society. This type of development must unite, rediscover and integrate the diverse collective identities that make up the social body (Max-Neef *et al.* 1992).

- **Human Needs**

One of the most fundamental human needs is food. When we talk about food being one of the fundamental human needs, how does one's need can be met without sacrificing other needs?

A theory by Max Neef in his book "*Human Scale Development*" 1991, defined needs as being fulfilled by satisfiers, which themselves are defined as:

"*Everything which, by virtue of representative forms of being, having, doing and interacting, contributes to the actualisation of human needs*" (Neef 1991, p.14).

Max Neef identifies nine fundamental human needs. These are; 1) Subsistence, 2) Protection, 3) Affection, 4) Understanding, 5) Participation, 6) Idleness, 7) Creation, 8) Identity and 9) Freedom. Neef's concept sees people or societies as "*poor*" when one or more of the needs mentioned above are not met. Making sure each of these needs will always be fulfilled in the now and in the future will increase people's well-being. Moreover, the needs articulated by Neef are psychological; and achieving them requires the establishment of social arrangements, the use of materials and will power and process.

Max-Neef argues that the human needs approach changes how choices are perceived. For instance, producing food using a method that distracts the ecosystem is not food versus ecosystem; but it is a choice between two human needs "*subsistence and understanding*". It is very important to have an understanding of food security in detail to avoid trade-offs. Instead of a trade-off between needs, the needs approach seeks synergies so that one act can secure as many human needs as possible. When looking at food security, it is therefore crucial to find ways to link it with other securities as much as possible using synergic satisfiers.

Food can be grown using various methods. Some methods provide more opportunity to satisfy human needs than other methods (Neef 1991). The main purpose is to deliver all human needs and not replace one need for any of the others. Neef argued that synergic satisfiers, not only satisfy one specific need, but also lead to satisfaction in other areas. For example, food secured mother breast-feeding meets needs such as self-managed production; popular education; democratic community; preventative medicine; meditation and education.

Neef stressed that when dealing with food security, it is very important not to isolate any of these other securities and jeopardize the aim of maintaining healthy societies, physically, psychologically and socially. According to Max-Neef *et al.* (1992), researching the relationships between food security and other securities in terms of the physical entities, psychologically and social arrangements are required to understand fundamental needs that secure well-being now and for the future. This methodology according to Neef and his colleagues gives an in-depth insight into the main issues that hinder the achievement of fundamental human needs in the society or community.

- **Capability and Freedom**

Amartya Sen in his 1998 "*Development as Freedom*" book argued that:

"*Development can be seen as a process of expanding the real freedom that people enjoy*" (Sen 1998, P.2).

Sen's definition of freedom is that:

"*We should evaluate development in terms of the expansion of the capabilities of people to lead the kind of lives they value and have reason to value"* (Sen 1998, p.2).

Sen argued that a focus on people's capabilities in the choice of development is one of the core values. The main feature of the capability approach is its focus on what people are effectively able to "*do"* and to "*be*", that is, on their capabilities. The capability approach is a theoretical framework that involves two core standard claims. These are:

"*The freedom to achieve well-being is of primary moral importance* and *freedom to achieve well-being is to be understood in terms of people's capabilities, that is, their real opportunities to do and be what they have reason to value" "* (Sen 1998, p.1).

Furthermore, Sen (1993) stressed that the capability set of an individual is considered as significant positive freedoms, the types of life between which she or he can choose. Sen added that the freedom to lead different types of life is reflected in the person's capability set. According to Qizilbash (1996), the capability approach is very important for the evaluation space for assessment of the quality of life and well-being. As Sen articulated, the procedure of economic development is best seen as an extension of people's capabilities; and development is seen as a process of freeing people from the imposed necessity to "*live less and be less*" (Sen 1984).

Sen's theory very much links to Neef's approach to needs of "*being, doing, having* and *interacting"*. Unlike increases in income, Sen argued that the expansion of people's capabilities depends both on the elimination of oppression and on the provision of facilities such as food security. Economic growth cannot be considered in itself as the ultimate measure of human's well-being and human development. But it is only likely to expand people's capabilities, especially at lower levels of income (Sen 1998). According to Sen, development theory defines development from an economic growth perspective, but not from a human development point of view. However, the human development report (2004) defines development as:

"People are the real wealth of nations. Indeed, the basic purpose of development is to enlarge human freedoms. The process of development can expand human capabilities by expanding the choices that people have to live full and creative lives. And people are both the beneficiaries of such development and the agents of the progress and change that bring it about. This process must benefit all individuals equitably and build on the participation of each of them" (HDR 2004, p.127).

Moreover, Sen expressed that:

"*Development is about removing the obstacles to what a person can do in life, obstacles such as illiteracy, ill health, lack of access to resources, or lack of civil and political freedoms*" (Sen 1999, p.5).

Sen emphasised that the capability of an individual, a household or a community can be infinite and varies by what each of these groups can have and the choices that can help to expand them. However, setting up a policy that identifies priorities in human capabilities that are vital for human development and well-being is very important. According to the Human Development Report (1990), these capabilities should be globally accepted. Equally they are fundamental to existence and their missing presence would reduce people's freedom and choices. For these reasons, the Human Development Report (2012) focuses on four important capabilities to increase human development. These are: to lead a long and healthy life, to be knowledgeable, to have access to the resources needed for a decent standard of living and to participate in the life of the community.

The idea and purpose of development as argued by Sen is and must be to improve human lives and reaching well-being by expanding the dimensions of human development factors (Sen 1999 and Sen 2005). The Human Development Report (2012) added that human development is all about increasing choices for people. In the day-to-day basis, people make a series of choices, for instance some people make social choices, some economic, some cultural and some political. The report added that:

"*Human development is both a process and an outcome. It is concerned with the process through which choices are enlarged, but it also focuses on the outcomes of enhanced choices"* (HDR 2012, p.25).

The report emphasised that for a nation to be developed, its people must be the main focus of developmental strategies. These strategies should be planned to increase the range of people's

choices targeting all human beings (Human Development Report 2012). The United Nations Development Programme (UNDP) (1990) stated that human development is linked to two critical issues. Capabilities and functionings on the one hand, and on the other hand opportunities, these are the two essential issues in relation to enlarging human choices. Functionings of a person refer to such as being well-nourished and enlarging choices for an individual implies to the formation or improvement of a person's capabilities. Human capabilities can be enhanced through the development of human resources, for instance, by better and healthy nutrition. Moreover, economic opportunities can be created through better access to productive resources (UNDP 2012).

- **Sustainable Food Production and Resources Management**

Food security is now inseparably linked to the management of the natural resources of water, land and the energy sector in a sustainable manner. According to Anseeuw *et al*. (2012), global food security is being significantly affected by the way we use land, water and energy resources. There has been a recent wake-up call in the management of water, land and energy sectors to increase sustainable food production. IFPRI (2012) stated that it has become clear that, there needs to be ways to produce food with less resource and eliminate wasteful practices and policies. For that to happen, IFPRI added that we must establish a new socioeconomic model that is sustainable and that pays attention to the poor people around the world. The *European Report on Development (2012) stressed that:*

"*The tight interconnections between water, land and energy makes it clear that the management of each of them cannot be considered in isolation but must be seen as part of an integrated system*" (The *European Report on Development 2012, p.20).*

The report added that in the fast changing and globalised world, were agricultural and economic growth is becoming a forefront agenda for many nations of the world, the degradation of the natural resources has generally come an afterthought. IFPRI (2012) argued that the pace of global consumption rate surpassing the world's population growth has been a difficult task to slow, testing the capacity to meet the basic needs of people. The World Economic Forum (2012) stressed that in recent years, the food security crisis and financial collapse have emphasised on both the urgent need and the potential for developing a sustainable agriculture system or food production system.

According to Godfray (2012), the challenge ahead is the cost of food and price rises in many countries and also consumption growth and competition for water, land and energy resources. Godfray added that the current food system is not sustainable. It uses 70 per cent of global water; much non-renewable, 24 per cent of vegetated land suffers soil degradation and 30 per cent greenhouse gas emissions come directly or indirectly from the current global food system. Anseeuw *et al*. (2012) also stressed that the recent global high oil price rise is also a contributor to demand more search for land in a global scale for bio fuel production. As a result, land degradation in many African countries including Ethiopia is a huge challenge.

The World Economic Forum (2012) warned that the world's population is estimated to increase at a high rate, and the push for more agricultural products are expected to increase. WEF stressed that the global agricultural systems will be increasingly challenged by water and energy scarcity, land degradation, climate change and instability and shortfalls food products.

The rising global energy prices according to FAO (2016) are creating more demand for agricultural land and water for crop production; and this is an issue that needs urgent solutions as it is a threat to food security by increasing food prices. Moreover, FAO stressed that higher energy prices are also increasing agricultural input costs, such as the cost of fertiliser, pest/herbicide and groundwater pumping and machinery, creating more pressure on the natural resources. For instance, according to Diao *et al*. (2010), in Ethiopia, around 70 per cent of the population live in rural areas and they heavily rely on the natural resources to produce food. However, these resources are increasingly becoming scarce (Ashley and Maxwell 2001).

As stated by FAO (2012), in different regions of the world, land productivity, water and energy availability and food production methods vary enormously. There is a huge potential in increasing the general use of resources efficiently, advance food production and improve consumption at a global level by a sustainable resources management method. For instance, FAO added that addressing intensive agriculture method; such as lowering the high use of water and by lower energy consumption. In other words, reducing the water and energy-intensive food production methods is vital in managing the natural resources in a sustainable manner.

IFPRI (2012) stressed that policy change urgency is needed in the areas of land, water and energy inseparably if we are to have a sustainable food production system and increase food security. When we manage these resources together, it is called nexus management. The nexus management of the natural resources of water, land and energy as stated by FAO (2012) is

therefore believed to be vital for a sustainable food production system, as this will help increase well-being. UN (2016) added that working closely with the natural resources; ecosystem has more benefits to both the environment and human beings in a long term.

- **Conclusions**

To conclude the policy making, implementation process and effectiveness theory; understanding policy making and policy implementation process is a complex political process. The complicated nature of policy process makes it difficult to study and untangle its complexity as it goes through implementation. The most important factors in understanding policy so that it meets its goals include; studying how policy changes itself in a process and how it influences its surroundings. Policy making, and its implementation process is an evolutionary process. They go hand in hand, they are intertwined and cannot be separated; for instance, when a policy gets implemented, the nature of policy changes. Moreover, currently policy implementation process appears to be focussing mainly on a top-down approach. The merging of top-down and bottom-up approaches in implementing a policy would benefit the success of policy delivery at a ground level.

Moreover, in the world that is increasingly becoming totalitarian and globalised, the most fertile lands are increasingly being transferred to big corporations, energy and water resources are becoming scarce, the food market prices are unstable and the right to have access and entitlement to food are denied for the many. Currently, it is very difficult for individuals securing the food they need and improve their well-being and advance their human development prospect as a result of these challenges.

Therefore, becoming self-sufficient, having easy access to local food markets and producing one's own food in a small place available with minimum natural resources has become increasingly vital. Increasing the capabilities and freedom of individuals or a community; having the access and entitlement to the food they need in order to be food secured and increase their quality of life is also crucial. The next section discusses the literatures that are relevant to food security and specifically discussing the context of the African Union and the Ethiopian Government system.

2.5 Food Security Relevant Literatures

There are many theories around the topic of food security. Two examples are those of Thomas Malthus (1798) and Ester Boserup (1965). According to Malthus "*if the human population*

continued to grow, food production would not be able to keep up with demand and there would not be enough food to go around". Clawson *et al*. (2007) stated that Malthus warned that the outcome would be a terrible famine that would kill many people. Verhoeven (2011) mentioned that according to Malthus, if growth continues, surplus populations will be reduced by war, disease, and famine.

On the other hand, Boserup in her work "*The Conditions of Agricultural Growth: The Economics of Agrarian Change Under Population Pressure"* (1965), challenged Malthus's conclusion. She argued that increase in the size of the human population would encourage scientists to intensify the food production system. Boserup suggested that food production can, and will, increase to match the needs of the population (WFP 2010).

The green revolution is one of the current programmes that is visible in Ethiopia through the African Union. The Malthusian theory and the green revolution programme have similarities; as both claim that population growth would lead to limited food availability. On the hand, Boserup's theory also links to the green revolution programme; as both claim that technological innovation and adoption could increase food production to meet the population demand.

2.5.1 The Green Revolution Programme

The green revolution as stated by Patel (2013) emerged in the 1940s, 1950s and 1960s with the response that growing populations and failing per capita food production will result in major food gaps that must be filled by advancing research, development and a serious of technology transfer to aggregate food production. The green revolution is led by Norman Borlaug the "*Father of the Green Revolution*", who received the Nobel Peace Prise in 1970, for saving over a billion people from hunger (FAO 2010). According to the African Union (2016), the green revolution involved the development of high-yielding of cereal grains such as rice, distribution of synthetic fertilisers, pesticides and improved seeds to farmers, expanding the infrastructure of irrigation systems and modernising the management techniques to accelerate food production.

The green revolution has first started in the South American countries such as Mexico, and then Asian countries such as China and India adopted the programme later on (Patel 2013). Thompson *et al*. (2007) emphasised that it was an expression pinned to refer to the development of the so-called "*miracle seeds*" the high yielding, which held out the vision for great increases in cereal production and the transformation of the agriculture system of the developing world.

Accroding to Chinsinga (2015), agricultural input subsidies were a major feature of agricultural development policies in rural economies from the 1950s to 1980s. In particular, Chinsinga added that large-scale agricultural input subsidies were a common and major feature of agricultural development policies in poor rural communities between those years. African countries adopted a new green revolution for Africa in 2006. This is discussed in section 2.6 in detail.

Patel (2013) stated that conventional arguments for subsidies in agricultural development focused on promoting agricultural productivity by making adoption of new technologies more attractive to smallholder farmers. The development of Modern or High-Yielding Crop Varieties (MVs) for developing countries began intensively in the late 1950s. As stated by CGIAR (2016), currently, there are 16 research centres that function under the support of the Consultative Group for International Agricultural Research (CGIAR). CGIAR is active in Africa and its research is committed to decreasing poverty, increasing food and nutrition security and enhancing ecosystem services and natural resources (AU 2016).

The green revolution programme according to Das (2002) has made a possible revolutionary increase in food production in the developing nations. Thompson *et al*. (2007) stated that it proposes a market and technological fix, new seeds that can resist harsh environmental conditions and pests and fertilisers to aggregate growth as a solution. According to GrowAfrica (2013), it is argued that technological adoption encourages farmers to grow new varieties of staple crops that significantly reduce losses and advance yields stability. It is also to enhance agricultural productivity through the increasing use of chemical fertiliser, pest/herbicide and soil management systems. This is to present sufficient plant nutrients and create additional efficient input markets and also to supply improved seeds, fertiliser and other inputs to farmers so that they can get profit from it (GrowAfrica 2013).

In recent years, as stated by Jewitt and Baker (2007) the "*green revolution and top-down development initiatives*" have been criticised heavily as part of a post-development reaction against their tendency to talk for the so called the "*Third World"* and thus silencing peoples own voices. Jewitt and Baker (2007) argued that the green revolution large scale experiment has pressed nature to the edge of ecological adversity and has also affected people socially. The high prices of fertilisers and pesticides coupled with the environmental deprivation have created major issues for the farmers. Moreover, those controlling the supply of the agricultural

inputs have taken exclusive control over the seed system as their way to link the seeds, fertiliser and pest/herbicide together. According to Thompson (2012):

"*Private ownership of seed rejects the International Treaty for Plant Genetic Resources for Food and Agriculture, protecting farmers' rights to save, breed, and exchange seeds, a law that honours farmers as the innovators and providers of food biodiversity over millennia. This international treaty recognises farmers' role as seed breeders to sustain genetic resilience of the human food supply*" (Thompson 2012, p.345).

Biotechnology is one of the main part of the green revolution programme. In the 21st century, Azadi and Ho (2010) stated that biotechnology has been used as one of the eco-techno-political technologies. Around the world, mainly in the developed world many nations have been developing their biotechnological capacity to increase their food productivity. In countries such as those in Africa, where infrastructure, scientific and technological bases are not as strong, AU (2016) stressed that the creation of new biotechnology organisations has not been possible. Therefore, the entry of biotechnology in such as Ethiopia is through aid, imports by the Government and multinational corporations.

Azadi and Ho (2010) stressed that the main benefit of genetically modified (GM) seeds is their potential to increase food security, especially for small farmers in African. Moreover, as stated by Azadi and Ho, the main arguments of genetically engineered supporters are for instance, GM foods help create safe food security, advance food quality, and extend the shelf-life of food. Moreover, it is also believed that GM foods benefit farmers, consumers and the environment. The African Union Food security specialist (2013) argued that there are both potentials and constraints in introducing genetically engineered seed technology in relation to advancing the agricultural outcome for smallholding farmers in Africa.

According to Godfray et al.(2010), a number of reports have highlighted the need for a major change in the world food system. Agriculture has to meet the challenge of feeding a growing population while at the same time minimising its global environmental impacts. The global food security crisis raised important questions about future directions for agriculture and has given fresh incentive to a long-standing argument about the possible role of organic farming and agricultural biotechnology to food security. According to Dibden et al. (2013), supporters of GM crops argue that the technology can make a vital contribution to increasing agricultural production, improving livelihoods, and enhancing food quality in the developing world. But on the other hand, critics believe that agricultural biotechnology could weaken food security.

There is a great amount of debate going on now whether or not organic farming is a way for future agriculture. According to FAO (2016), with the world population expanding, the argument over the ability of organic farming feeding the global population is increasing. Most of the time, as mentioned by Shiva (2004), huge biotechnological corporations mainly those who gain from the use of improved or genetically engineered seeds, chemical fertiliser and herb/pesticides question whether or not organic agriculture can meet this demand. According to Greenpeace (2015), the issue is also whether organic farming is a lower-cost technology and better for humans and the environment.

The most obvious advantage of organic farming as stressed by Pretty *et al.* (2003) is the small-scale farmer's deep knowledge of the natural ecosystem. According to Closter *et al.* (2004), the critics of organic farming claims that organic farming and crops are more expensive and therefore, low-income families and people in developing nations despite their aspiration, cannot afford it. Moreover, improved seeds or GM crops give higher yields. Contradicting with the argument, Pretty *et al.* (2003) stated that implementing organic farming in some developing countries caused higher yield of productions.

This implies that organic farming can increase the food supply in these nations where a better knowledge in farming techniques have been introduced. According to Parrott (2004), organic farming has some potential. It can help avoid crop failure, increase productivity and give better food quality for the people. Moreover, Closter *et al.* (2004) added that the diversity of crops grown in organic farming reduces the risk of crop failure from particular pests and diseases, increase self-sufficiency and thus a more secure and steady supply of food for the people.

The World Health Organisation (2005) stressed that the intensification of food production methods has caused losses in natural resources and has been changing the ecosystems' functions. These changes to ecosystems have happened erratically, often worsening the access to ecosystem services by the farmers and increasing poverty. Having equal access to safe water, fertile land and other public services is vital to the farmers. WHO added that it is perceived that organic farming does reduce water and soil pollution, as well as reduce the use of chemical inputs in farming practices; in a sense that organic farming creates minimal harm to the ecosystems, animals and humans.

Greenpeace (2015) argued that the new industrial chemical intense agriculture system under the green revolution programme is not sustainable. Greenpeace added that our current agriculture system through the green revolution programme depends on the use of vast amounts

of chemicals, as well as fossil fuels; and it is controlled by a few large corporations. Moreover, Shiva (2004) argued that the system relies heavily on a few key crops, undermining the basis for the sustainable food and ecological systems upon which human life depends.

Sustainable intensification (SI) of agriculture is also on the rise in many countries under the green revolution programme to increase environmental and social impacts sustainably (AU 2016). Sustainable intensification is to increase food production from existing farmland while minimising damage on the natural environment (AGRA 2016). According to Juma *et al*. (2013), sustainable intensification is a system that is in place now that offers a robust solution in many African nations. Juma *et al*. (2013) added that the system is helping many African smallholder farmers produce more with less impact on the environment while also improving agriculture's sustainability. In the next section, I discuss food security literatures that are relevant to the AU and the Ethiopian Government.

2.6. The African Union Food Security Policy Relevant Literatures

The Sub-Saharan African region according to UN (2016) remains one of the regions in the world where food insecurity and hunger still prevail. Currently in the continent, around 230 million people are considered to be food insecure; and in the last 20 years, the number of people who live below the global poverty line ($1 per day) has gone up by more than 50 per cent (FAO 2015). There are different discourses and narratives used by different political groups and individual actors around the issue of food production and food insecurity in Africa. Each suggests different pathways to reach sustainable food production and sustainable food security systems for the people on the continent.

Ever since many African countries have gained their independence from the colonial powers, according to Leach and Mearns (1996), the dominant narrative for the issues such as food insecurity in the continent has been the Malthusian Narrative. Malthus' narrative has been influencing the argument over the natural resources and agricultural practices in many African countries. Moreover, Thompson (2012) mentioned that there is an argument that the problem with African food production is neither technology such as wrong crops, nor environmental factors such as irregular precipitation. Nor is it that the African governments are hesitating to engage in the agricultural sector. But Thompson added, it is assumed that the issue is very much linked to small-scale farmers who are the producers of most of the food in the continent but struggle with poor soil, unreliable local water supplies, low quality seeds and having the lack of market linkages to their crops

Currently, it is argued by the AU policy making representatives, producing more food for a fast growing population in the coming decades is a major priority for African governments if the people are to be fed in a sustainable manner. Thompson (2012) stated that key initiatives in the continent are attempting to solve these issues through the "*market-led technology adoption theory of change*". In response to these needs and challenges, the Alliance for a Green Revolution in Africa (AGRA) was set up in 2006. It was created with a narrative that food secure and prosperous Africa will be achieved through rapid, sustainable agricultural growth based on smallholder farmers. Patel (2013) stressed that AGRA has a mission to generate an exclusively "African Green Revolution" that transforms agriculture into a highly productive, competent, competitive and sustainable system that guarantees food security and lifts millions of Africans out of poverty.

According to GrowAfrica (2008), AGRA is chaired and directed by the former UN secretary-general, Kofi Annan, and it is mainly funded by Bill & Melinda Gates Foundation (BMGF) and the Rockefeller Foundation. These are powerful actors that have been involved in the AGRA creation and policy making process. AGRA, as stated by AU (2016) is working with the CAADP framework plan and deals very closely with NEPAD to ensure that Africa's Green Revolution helps to achieve the targets that have been set; such as the aim to double the income of 20 million smallholders by 2020.

According to Bond (2002), NEPAD is initiated by an elite-Africa's new answer to the Continent's crisis. NEPAD was originally initiated by the South African president Thabo Mbeki and his two main internationally oriented cabinet colleagues, finance minister Trevor Manuel and trade-industry minister Alec Erwin. These individuals Bond added, have had great place of power, probably no other African rulers have had such systematic power at home and abroad.

This narrative, the narrative that puts agriculture as the main tool to end food insecurity in Africa is being made by few selected elite individuals at high level meetings. For example, as stated by the Young Famers Foundation (2014), the High-Level Meeting for Africa on Zero Hunger, Towards African Renaissance: Renewed Partnership for Unified Approach to End Hunger in Africa by 2025 within the CAADP Framework; that took place in Addis Ababa, Ethiopia from 29 June to 1 July 2013; Da Silva celebrated what he described as "*the commitment, at the highest level, of an entire Continent*". The African Union Summit adopted the target launched by United Nations' secretary-general Ban Ki-moon in 2012.

The narrative, according to Zimmermann (2009) has mainly been put forward by technical scientific elite in research stations and laboratories, supported by economists in the agricultural and development sectors such as, FAO, The Consultative Group for International Agriculture (CGIAR), World Bank, IMF and African politicians. For instance, CGIAR which is working with the African Union is focussed in achieving "*a food secured Africa*".

According to Patel (2013) the green revolution was one of the main programmes that has been present for a while now related to food security in Africa. The programme has been created in Africa mainly in response to the increasing higher food prices. Patel added that as a result of the threat of climate change combined with an increasing food consumption rate and the increasing food insecurity issue in the past decades, African leaders and political elites have called for *a Green Revolution for Africa*. Kofi Annan, a powerful actor, using persuasive words, power and politics to influence policy articulated that:

"*Africa needs a Green Revolution of its own. But our Green Revolution must be grounded firmly in present-day African realities, while drawing lessons from the positive and negative experiences of the past. It must recognise smallholder farmers as the key to increasing production, promote change across the entire agricultural system, and put equity and protecting the environment at its heart. Indeed, we need a uniquely African Green Revolution*" (Kofi Annan, the former UN secretary-general; current head of the Alliance for a Green Revolution in Africa, AGRA 2013).

The African Union (2011) stated that the Green Revolution for Africa has been introduced mainly by emphasising the promotion of agricultural inputs of improved seeds, chemical fertilisers and pest/herbicide for African nations to increase food productivity. The AU added that this was based on some success stories of the Asian Green Revolution of the 1960s and 1970s and with the plan of implementing the Green Revolution through networks of local entrepreneurs, characterised by the small-scale suppliers or agro-dealers in Africa through the Alliance for a Green Revolution in Africa.

For instance, Thompson (2012) stressed that the Millennium Villages Programme (MVP) and the United States Government's new Feed the Future Programme working with the AU programme; AGRA, are all planning many elements on the acceleration of the African Green Revolution Agriculture Agenda. Thompson added that the Comprehensive Africa Agriculture Development Programme under the programme of the Africa Union's New Partnership for

Africa's Development, African nations are signing up to the "*compacts*" with the plan of expanding further funds in the support of the African agricultural sector.

Some questions arise as to why some specific narratives come to dominate arguments in the African agricultural policy such as the adoption of biotechnologies for more food production agenda plan; while others remain hidden or marginal such as, organic farming that is more sustainable environmentally. As stressed by Moseley (2011), the food insecurity narratives in Africa are promoted by particular actors usually, very few elite individuals with specific agendas. Some of these individual elites have more power and influence and others have considerably less and embody different goals and values.

Moseley added that there are some with political or economic interest that push the green revolution programme on the continent. For instance, the Unites States is a place to some of the world's major synthetic fertiliser, pesticides and seed companies; and by pushing an input intensive approach to agriculture that is dependent upon imported technologies, American agricultural input companies are destined to profit.

The African Green Revolution was based on the success stories of the Asian Green Revolution; however, the reality was different. According to Shiva (2004), while Asian countries such as China and India's' agricultural production has increased dramatically from 1960 to 2000, it has also caused many environmental and social destructions. For instance, China faced declining production and yields which are most likely are associated to soil degradation related to the overuse of nitrogen fertilisers (Moseley 2011). Moreover, Shiva (2004) stressed that while the agricultural reforms of the late 1970s and 80s have allowed some farmers to produce more crops in India, these reforms have also led to wealth inequality in many villages dramatically.

The fact that the African Green Revolution follow the Asian green revolution success stories and planned to improve what failed in places like India, Larson *et al*. (2004) mentioed that the green revolution in Africa has been a controversial topic amongst researchers and policy makers internationally and in Africa. Some policy makers have proposed that the green revolution technologies, through the widespread adoption of modern input packages with improved seed, fertilisers, pest/herbicide, irrigation and improved production practices would reduce the instability of subsistence agriculture caused by weather, pests and diseases. On the other hand, researchers such as Shiva (2004) argued that much of the increased instability in food grain production for instance in India can be attributed to the widespread adoption of green revolution technologies (Larson *et al*. 2004). Despite the arguments around this topic,

many African nations such as Ethiopia are now adopting the policy and have been implementing it at a ground level.

2.7 The Ethiopian Government Food Security Policy Relevant Literatures

In Ethiopia, there have been conflicts among different parties in the country and international bodies concerning food security and its agriculture and development policies. For the last 20 years, there have been many narratives suggested by different groups related to the food insecurity issues in Ethiopia and ways to fix the problem. For instance, one of the narratives according to IDS (2006) is that the reason for drought, famine and food insecurity to exist in the country is because the environment is degraded. It was also suggested by FAO (2010) that the food issue in the country is believed to be very much linked to small-scale farmers.

According to UN (2015), soil infertility, unreliable water sources and the lack of market linkages to their harvests are some of the issues faced by the Ethiopian farmers that affects their food security status. Environmentalists such as Greenpeace (2015) stated that increasing farmers' incentives to invest on their own land is more important. Bill & Melinda Gates Foundation have also argued that the promotion of green revolution technologies in the marginal areas of Ethiopia is the only way of boosting food production and to resolving the present food insecurity issues of the country (UNDP 2012).

On the other hand, Keeley and Scoones (2000) stated that conflicts have arisen in Ethiopia over strategies for environmental rehabilitation, with the Government suggesting that large mass-mobilisation schemes are the only way to address the long-term challenge of combating drought and soil erosion in the country. Moreover, Keeley and Scoones (2000) added that more incorporated, low external input solutions based on the values of conservation agriculture are more suitable ways of dealing with the environmental degradation issues and shortages of food in the long run in Ethiopia. These are some of the main arguments and debates about food security, environment and rural development policies in the country.

Historically, according to Adem (2012), the Ethiopian agricultural culture has narrow, deep institutional roots and political interests. Emperor Haile Selassie governed for almost half a century through close relationships with a hierarchy of regional and local elites preoccupied with controlling land for their personal political power rather than increasing agricultural productivity for the farmers. Adem added that the Derg military regime, which overthrew the

Emperor in 1974, governed for about two decades through a unitary state structure, concerned more with applying central control than advancing people's well-being and serving them sincerely.

The current leadership, that is ruling for more than two decades now has pushed to end this arrangement by adopting a new constitution that restructured the country in a broadly decentralised, ethnically based federal system. The Ethiopian Government as stressed by Lavers (2012), argued to have moved to a market-based growth strategy, even though in practice the Government has kept tight control over the country's economy. Moreover, Adem (2012) emphasised that the Government maintains close control over the actual implementation of the decentralisation system; in ways that shows continuity with authoritarian rule.

The Ethiopian Imperial regime as stated by Berhanu (2012) has been active in commercialising the agriculture system at a large scale through the "*First Two Five-Year Plans*" (1957-1962 and 1962-1967). The dominant line of thinking, narrative of the Imperial Government was that increased food productivity can be achieved through accelerated investment in large scale farms. It was through this modernisation of the agriculture system that the regime gained some of its currency. However, the regime underwent a policy move, emphasising the modernisation of small-scale agriculture in the "*Third Five Year-Plan Period"* (1968-1973).

Berhanu (2012) added that the position and influence of political hierarchical and other conventional centres of power on policy have been abolished after the revolutionary up-rising of the mid-1970s. It was then replaced by the Derg leadership, which passed a declaration that gave land ownership to the societies. The military regime (1975-1991) after it got in to power governed based on the socialist path of development. The current ruling Government EPRDF's agricultural policy, in the mid-1990s introduced the Agricultural Development-Led Industrialisation (ADLI) Strategy. Berhanu stressed that the main narrative justifying ALDI was that an influential economic policy would enhance the small-scale farmer's performance and potentially would lead to an increased food security, reduced poverty and increased farmer's income.

There are key actors with their networks that are politically powerful in Ethiopia that shape the food security policy process. Lavers (2012) stated that ever since coming to power, the current Government development strategy has been based on the argument that since 85 per cent of the Ethiopian people are depending primarily on agriculture, growth requires rapid agricultural transformation and development. The Growth Transformation Plan (GTP) five-year

development plans under the federal policy framework of Agricultural Development-Led Industrialisation pursued a strategy of promoting the commercialisation of small-holder farmers and large-scale commercial agriculture but also involving the private sector. Berhanu (2012) stated that the Ethiopian agricultural policy has experienced many changes in the past several decades in terms of its policy focus and goals. However, Berhanu added, its major objective stayed similar and it focuses on the improvement of agricultural performance and food productivity through mainly the emphases on seeds.

According to Alemu (2011), the beginning of the Ethiopian Government top-down, centrally designed state-directed seed production and allocation approach can be traced back from the Imperial regime to the Derg leadership and to the current political structure. Alemu (2010) stressed that in Ethiopian, the seed sector that was set-up since the early 1990s was structured by policies specified in the different public declarations and set of laws. The Ministry of Agriculture and Rural Development (MoARD) has the central duty of implementing these policies at the federal level and at a regional level, the Bureaus of Agriculture and Rural Development (BoARDs) is responsible for implementing.

The Ethiopian Governance structures according to Yewondwossen (2012), varying from the federal to the grassroots levels were placed in descending order of hierarchy. Policy making process in Ethiopia is very high-level and implementation is top-down. Starting from powerful international bodies such as the United Nations, the World Bank, and the African Union to Ethiopian Ministers. After decisions are made at these high levels, then the implementation process is passed down to Regions, *Zones*, *Woredas*, *Kebeles* and finally reaches the people on the ground at household level. Yewondwossen (2012) added that there are several administrative layers that constitute Ethiopia's policy implementation process. Berhanu (2012) stressed that the creation of two levels of parliamentary government at federal and regional levels, which was later expanded to the local (district) administrations in 2001/02, was officially authorised.

Critics doubt the Ethiopian agriculture policies efficiency by arguing that the main problem of Ethiopian agriculture is low labour productivity; but ADLI tends to disregard labour productivity by focusing too much on land productivity (Yewondwossen 2012). The policy also pays very little attention to the purchasing ability of the rural people and the small size of the urban population; but on the other hand specifically articulates the supply side. Berhanu (2012) argued that increased production alone would be able to bring higher farmer incomes

and increase food security is still a big question in Ethiopia. The Ethiopian Government claims that growing populations and food production declining per capita will result in major food gaps which must be filled by aggressive food grain production. According to the Ethiopian Policy makers, the answer was therefore adopting the New Green Revolution for Africa Programme.

Ethiopia, adopting and accelerating the Green Revolution Programme for Africa is a controversial issue. There are some concerns raised by Ethiopian scholars about the adoption of the new technologies such as the improved seeds through the green revolution programme in the country. As stressed by one of the Addis Ababa University social research officer I have interviewed (2013a), the main argument of supporters of biotechnology specifically, genetically modified crops, is higher agricultural yield. However, the researcher added, the negative and positive effects have not been studied prior to actually implanting them on the ground level. Historically, the Ethiopian seed system has been highly political. It involves the Ethiopian Government, the international bodies and private sectors (Addis Ababa Research Officer 2013c).

Some of the arguments related to the seed sector in Ethiopia is that according to Alemu and Tripp (2010), a high level top-down driven but decentralised locally "*crash programme*", is promoting "*a farmer-based*" seed production and marketing schemes. The Ethiopian Seed Enterprise (ESE), working closely with the regional office, the Regional Bureau of Agriculture and Rural Development is implementing the plan. Alemu and Tripp (2010) also stated that the recently created "*seed enterprises*" are also encouraging seed production, mainly for "*open-pollinated crop varieties*" through a related plan. As stressed by Sahlu *et al*. (2008), these programmes are planned to advance the potential of seed production varieties locally; and possibilities of producing and marketing seed has increased within communities reducing seed costs.

Alemu (2011) emphasised that the seed system in Ethiopian in dominated and controlled by the Government. Each aspects of the seed system such as from breeding to source seed preservation and multiplication, to basic seed and certified seed production and supply to price setting, with its permission for production and allocation, as well as guideline is all under the control of the federal Government. Alemu (2011) added that in terms of the involvement of the private sector, the Government highly encourages the sector to play a more active role in the seed system.

The Economist (2000) stressed that the Ethiopian traditional seed system has seriously been affected by the 1984-85 Ethiopian famine. Responding to the food crisis, the previous Ethiopian Government through the Plant Genetic Resource Centre in partnership with Seeds of Survival (SoS) did implement a programme to protect Ethiopia's seed biodiversity. According to Walsh (2000), Ethiopia receives food aid from the Western countries such as the US and UK. This aid started mainly in the 1984 famine in the country; however, it has now become increasingly common as the country does not receive aid as an emergency only, but as common phenomena too; and this too has affected the Ethiopian seed system.

Moreover, Walsh (2000) highlighted that Ethiopia receiving seed as aid, but also in some cases grain surpluses being sold to the Government from countries such as the US has served to weaken the agricultural system. For instance, in 1999-2000 the relief agencies USAID and WFP donated around 500,000 tons of maize and maize products in collaboration with the US Department of Agriculture to the Ethiopian Government. The 30 per cent of these shipments obtained under the contract with US agribusiness were additional genetically modified seed grains. Wallegreen (1999) argued that the entry of genetically modified seeds as food aid to Ethiopia had contributed to the degradation of Ethiopia's genetic pool of indigenous seeds. At the same time also, the food giants, the private sectors were gaining control over the Ethiopia's seed bank.

The Ethiopian Government Seed Enterprise Agency as stressed by Demissie (1999) has joined the Pioneer Hi-Bred Seed Agency in the supply of hi-bred and genetically modified seeds, along with "*hybrid resistant herbicide*" to small scale farmers in the country. With the financial and technical assistance of the World Bank, Demissie added, the marketing of seeds had been transferred on to the hands of private seed enterprises and contractors. The farmer-to-farmer informal seed exchange has been converted in to the formal, market oriented system of private seed producer-seller by the World Bank programme.

The Ethiopian Government claimed that seeds farmers are now using are improved seeds, not genetically modified seeds. However, according to Walsh (2000), the US surpluses of genetically modified maize which has been banned by the European Union were being dumped in the Eastern part of Africa, including Ethiopia, as a form emergency aid. Demissie (1999) argued that the Ethiopia's widespread indigenous varieties seed reserves such as *Teff*, barley and sorghum were being "*appropriated*", genetically manipulated and patented by the

multinational corporations. Ethiopia receives bills from foreign agencies that have patented Ethiopia's native species and demand fees for their use.

The Economist (2000) claimed that this has eventually displaced "*the traditional varieties and landraces reproduced in village-level nurseries"*. The system was supporting many farmers through a method of farmer-to-farmer exchange. According to Omaar (2000), the continuity of food insecurity issue in Ethiopia has led to a further depletion of local level seed banks. The reserves of grains the farmers normally store to help them through difficult times have been emptied. Omaar added that local level seed banks have been increasingly depleted by commercial hi-bred and genetically manipulated seeds with the weakening of the traditional seed exchange methods that has been going on for many generations. The supply of seeds to local farmers in turn has been integrated with the food aid programmes and the Ethiopian agriculture extension systems.

In recent years, according to Alemu *et al.* (2011), one of the main policy agendas of the Ethiopian Government is the supply of improved seeds to the farmers through the New Green Revolution for Africa Programme under AGRA. The seed sector is one of the most important sectors to the Ethiopian agriculture system. The sector has a major role in the Ethiopian economy, as it represents about 45 per cent of the GDP and 85 per cent of cash is earned from agriculture product exports. It also provides livelihoods of 85 per cent of the population of around 80 million people; these people depend their entire livelihood on agriculture. The acceleration of the agriculture system in Ethiopia is therefore, using the seed system is one of the top agendas of the Ethiopian Government within the African Union food security policy plan.

According to the Ethiopian policymakers, the Ethiopian agricultural system could not supply the substantial expenses of capital necessary for the industrial investments that Ethiopia requires to renovate its national economy. The Government as a result has been active transforming the agriculture system through the commercialising of the small-scale farmers and through the engagement of the large-scale big farmers. Moreda (2015) stated that the Ethiopian Government has been putting so much emphasis on the commercialisation of the agriculture sector and increasing active participation of the private sector for fast economic growth and food security.

Currently according to FAO (2016), the Ethiopian economy is one of the fastest growing in Africa. The reason for this growth include the expansion of areas, coupled with the use of

agricultural inputs increasing; particularly improved seeds, fertiliser and herb/pesticides. The Ethiopian agriculture policy implementation system follows the top-down approach, for instance the farmers are now adopting the new green revolution programme through the agriculture extension system. According to Adem (2012), the top-down approaches of policy implementation system of the current Ethiopian regime are reflected clearly in the mechanisms that is absent for farmers to participate in raising their own concerns and voices.

In Ethiopia, as stressed by Azadi *et al.* (2011), most farmers are subsistent and classified as peasants; and most of these farmers cultivate for their own consumption. Most of the fertile lands now in Ethiopia are been sold to the private sectors or are large state farms. If farmers have access to higher quality and bigger farm lands, the Government usually will sell it to investors. These farm lands as stressed by Negash (2013) are vital to the small-scale farmers; as higher quality and bigger farm lands normally leads to greater productivity. This makes it feasible for farmers to sell a huge part of the crops at the market, which helps them get more profit and consequently leads to better livelihood and improve their well-being.

Food is one of the most essential human needs and when this need is met adequately, it increases human well-being and elevate human development. In order to increase sustainable food security for a community, a household or an individual, increasing the entitlement, freedom and capability to access the food that people need is vital. Currently, the Ethiopian Government is pushing a more agricultural expansion system to be able to produce more food for the so called “growing population” and also to use agricultural products to advance economic growth through exports. The idea that population growth will lead to shortage of food has come from the Malthusian narrative. According to the Addis Ababa University research officer (2013c), this theory does not apply to Ethiopia as other factors contribute to food insecurity, hunger or famine issues in Ethiopia. These factors include; political issues and instabilities and the issues of entitlement and access failure are some to mention.

For instance, according to Keller (1992), the famine in 1984/5 in Ethiopia was not caused by population expansion or the lack of food being available in the country, but people were denied access and entitlement to the food that was already present. Grierson and Munro-Hay (2000) stressed that the Derg Government imposed a restriction of movement on goods and aid to the famine affected regions at the time of the famine. Many people have died because the regime refused to allow food to be transported to the regions affected by the famine that were controlled by the rebel groups in the Northern part of Ethiopia. Instead, Derg was using “*food*

as a war weapon"; and the regime applied a policy of resettlement in the famine affected areas as a cover so that the people would stop supporting the rebels' causes (Munro-Hay 2000).

Shiva (2004) argued that one of the main reasons for food related issues in many developing countries is that the policy structures that protected rural livelihoods entitlements, access and increased incomes and access to markets and resources are being systematically destroyed by globalization and the structural adjustment programmes. This was driven by the World Bank and by WTO rules that imposed trade liberalization. Shiva stressed that the only way to protect incomes and entitlements in poor countries is to bring back controls on imports; as there is a reverse relation between increasing agricultural exports and declining food consumption locally and nationally.

The Ethiopian social researcher (2013a) stressed that, Ethiopia now is increasingly participating in the globalised world and the Government is mow pushing commercial crops such as flowers and coffee for exports for economic gain. According to Shiva (2004) when countries grow flowers and vegetables for exports, they also sow the seeds of hunger. The Ethiopian research officer (2013c) added that in Ethiopia, Globalisation is changing the dynamics of food security. Chopra and Shetty (2004) stated that the integration of world cultures and global economy may have led to the increases in average incomes globally, but it has also created a wealth gap and greater inequality between the wealthy and the poor. According to Dercon (2010):

"*Globalisation has also led to an increase in volatility of global food prices as characteristic economic shocks can affect the whole global food system, and can be aggravated by speculative forces able to trade at the global level. Household and individual levels food price instability further damages vulnerable livelihoods. At broader scales, this can lock regions and countries into low human development pathways*" (Dercon 2010, p.9).

According to Lavers (2012), despite the implementation of the Ethiopian Agriculture Transformation Policy (ATP), pushing biotechnologies and intensive agriculture system at the ground level for some time now, cereal markets stayed unstable and food prices have gone up rapidly in recent years. Lavers argued that for many farmers in the rural areas of Ethiopia, food production and food supply issues have increased food insecurity greatly. In urban areas, high food prices and the rural, limited production of crops used as industrial inputs are among the barriers to growth. Azadi *et al.* (2011) stressed that the manipulation of plants genetic structure is at an experimental level, it is therefore a risky method for farmers to adopt. Moreover,

weather biotechnologies are able to narrow the gap between the rich and poor farmers are not fully studied yet in many countries in Africa including Ethiopia. If the relationship between food security, human well-being and development are not studied in great depth, it could have a huge consequence on societies of the coming generations.

The relationship between food security, human well-being and development as stated by Conceição *et al.* (2011) is huge. They are intertwined greatly, and their results are co-determined to a significant degree. FAO (2009) stated that for an individual, households or communities to have a productive and healthy life, they must have the physical and economic access to adequate and enough food to meet their nutritional needs. Food factors such as availability in sufficient quantities, suitable quality, supplied through local production methods and easy access by individuals, households and communities to adequate resources to obtain suitable foods for a nutritious diet is vital. Moreover, the utilisation of food through adequate diet, access to water, sanitation and health care services must also be met. Avoiding factors such as the instability of local or global food prices is therefore vital.

2.8 Conclusions

There are extensive amounts of work that has been done to understand the issue of food insecurity in Ethiopia as it is one of the food insecure countries of Sub-Saharan African region. The issue of food in Ethiopia is usually associated with environmental issues such as draught and soil degradation, political instability of the country, lack of technology such as improved seeds and roads for market linkages used by the farmers and not enough food being produced to feed the growing population of Ethiopia. For these narratives, solutions are created as policy by elite individuals at high level meetings and policy gets implemented from top-to-down reaching the people on the ground. Then people at household levels have to adopt these policies and it is assumed that these policies bring food security for the people.

In this thesis, I identify and make an original contribution to related literatures. My original contribution in this thesis is that; after policy reaches the people at a ground level; critically examining the effectiveness of the policy from the people's perspective in the selected *Gelgele* and *Yetnora* villages in Ethiopia. Whether the policies identified through narratives and designed by the politicians at high level actually bringing sustainable food security for the people at the ground is a less studied topic in Ethiopia. Bottom-up policy emerging, and policy change based on the people's ways of life, their need, and priority and perspective is almost

non-existence in the policy making process of the Ethiopian Government system. There is a clear disconnection between policy makers at a high-up level and the people on the ground when making a policy. The Ethiopian policy makers have a much closer relationship with the African Union elite politicians, the international communities such as FAO, G8 and powerful individuals such as Bill Gates rather than the farming community when designing and making a food security policy that is to be adopted by the farmers' themselves at their household level.

Priority given by the Ethiopian Government is that the country needs to accelerate its agricultural growth rate so that it meets the growing population food demand and to earn foreign earnings from agriculture products to accelerate economic growth in the country. It is assumed that as a result of economic growth, people can make more earnings and be able to buy the food they need. Based on this idea, the Government believes that people can eat at least three times a day and this increases their state of food security. However, when interviewing the people at the ground level, those the receivers of the food security policy tell a different story all together. The analysis of what it means to be food secured from the people's perception is also a big part of this thesis work.

The food security policy that is in place is one direction only, top-down and the people on the ground had no say on its creation. Even after it reached their door-step, the policy assessment team come to do research just to check if the policy is being adopted and not whether the farmers are happy with it and it is bringing them sustainable food security from their perspective. There is clear frustration going on amongst the farming community towards the country's policy makers. The farmers feel that the Government is not interested in listening to their story and not willing to change its policy based on the needs of the people on the ground.

The farmers feel that the policy is in fact putting them in a trap position and controlling them politically; and this is affecting their well-being deeply. Therefore, the current Ethiopian food security policy is used as a political weapon and not a genuine policy that is designed for the people to bring sustainable food security; and is not flexible based on their needs. Based on this, there are three research questions emerged and I have addressed them all though out the thesis. The questions are:

1. Why is that the Ethiopian policy makers are disconnected with the people that adopt the policy in their day-to-day life at the ground level?
2. Why is that the bottom up level policy has no place in the food security policy making process in Ethiopia?
3. How is the policy in place related to food security affect people's well-being and their human development in *Gelgele* and *Yetnora* Villages?

In chapter three, I have outlined the methods I have used to collect the desired data for this thesis. This is discussed below.

Chapter 3. Research Methodology

3.1 Introduction

This chapter presents the methodological approach I have used to collect the data for this PhD study. The study integrates macro and micro level data collection methods; covering policy making process, policy implementation process and effectiveness of the policies at the ground level from the people's perspective.

I have undertaken this PhD study in-to two phases to collect the primary data. The first phase of the data gathering took place in Ethiopia in April-June 2013; and it focused on food security policy making and high level implementation process of the African Union and the Ethiopian Government. The second phase of the field research also took place in Ethiopia in April-July 2014. This part of the study focussed on policy implementation process until it reaches the people on the ground and the effectiveness of the policies at the local level from people's perspective.

For this thesis, I have conducted 160 interviews in total. This is including the AU and EG policy making key informant interviews, the Ethiopian Research Organisations officials' interviews, policy implementation key informants and ground level; household interviews, focus group discussions and in-depth interviews in April 2013-July 2014. In this chapter, I have discussed how I did conduct the primary and secondary data, the challenges I have encountered while collecting the data, recording, translating and making sense of all the information I have gathered to be able to address my research aim, objectives and research questions.

This material is organised in the following way. Firstly, I have discussed how I conducted data from the African Union followed by the Ethiopian Government; assessing food security policy making and high level implementation process. Then, the data collected from the Ethiopian Research Organisations in relation to food security policy making and implementation process is discussed. I have then outlined the specific methods I have used to generate data from the AU, the Ethiopian Government bodies and from the ground level. Moreover, research ethics, policy making process research limitations and ground level research limitations have been discussed in detail. Finally, how I have analysed my data is also discussed in this chapter.

3.2 Food Security Policy Making Process

3.2.1 The African Union

In the first phase of the study, I have critically examined the African Union food security policy making process and how it flows into a country level food security policy. In order to help me analyse objective one of the thesis which was (***to identify the African Union specific food security policies and its process***), I have conducted semi-structured face-to-face interviews with **five** key informants from the African Union‘s headquarters in Addis Ababa Ethiopia. (Please refer back to appendix 3 for detailed information about interview participants and interview questions). I have adopted the snowballing sampling method to help me identify the participants from the AU in Addis Ababa in April 2013. I have first identified the participants for the interviews through an internet search when I was still in the UK, I then have sent emails to the identified persons. Initially, I have sent the emails to the AU, NEPAD Agency three representatives in Addis Ababa, Ethiopia.

After I have arrived in Ethiopia, I exchanged a few more emails to arrange interview times and dates with the three previously identified persons. In one case, one in-depth interview has been held with one of the people I have already identified. However, after initial meetings, the other two people have referred me to other four relevant persons for further detailed interviews. The following table, 3.1 shows the participants I have interviewed and their department within the African Union.

Table 3.1 The interviews conducted with the AU, NEPAD Agency and CAADP Framework representatives in the African Union Headquarter Ethiopia, 2013.

Department	Interviewee
AU, NEPAD Agency	The NEPAD Agency Expert The Water Management Department Expert The Land Management Department Expert
CAADP Framework	The Food Security Specialist The CAADP Framework Representative

These interviews were small in number. However, each participant were key informants; in key positions within the African Union and they have given me an in-depth insight in-to the African Union policy making and policy implementation process related to food security in the continent. Each interview lasting between 2 to 3 hours and I have managed to get a clear understanding on how policy was formulated, by whom and how it was passed on to member countries so that they can incorporate these policies in place with their own national level policy. I have also used secondary data from the AU website and official papers available from the offices. For this PhD study, I have followed this high level food security policy implementation process to Ethiopia, which is discussed in the following section.

3.2.2 The Ethiopian Government

To be able to assess how Ethiopia as an AU member country incorporates the African Union food security policy with its own country level policy, I have adopted a qualitative approach for the primary data collection, which involved **Six** key informants. I have used the snowballing sampling method for identifying the participants of the Ethiopian Government food security policy representatives after arriving in Ethiopia. This was by going directly to the main Government offices after identifying the venues. I have held semi-structured face-to-face interviews consisting open-ended questions with the relevant key individuals in order to

address objective 2 of the thesis; which was ***(to identify the Ethiopian Government food security policy and assess its process)***.

In order to help me gather more data, I have also used direct observation and recorded a diary during and outside the interviews; this method was used at the AU level too. I did gather secondary data from the Ethiopian Ministry of Agriculture and other relevant Ethiopian agency offices and from their website to enrich my data. All the information I have gathered has supported me in getting more insight in to the research objective I was addressing. The following table, 3.2 shows the Ethiopian Government interviewees and their department I have collected the data from.

Table 3.2 The department and interviewees involved for the Ethiopian food security policy process study.

Department	**Interviewees**
The Ethiopian Ministry of Agriculture	The GTP Policy Representative The ATP Policy Representative The ATP Extension Service Officer
The Ethiopian Food Security and Emergency Preparedness Agency	The Agency Department Director
The Ethiopian Seed Enterprise Agency	The Agency Department Director
The Ethiopian Development Agency	The Agency Department Representative

For this part of the study, six people have participated, and these key interviewees presented in table 3.2 did give me a deeper understanding and information about the Ethiopian Government food security policy making process and how the country adopts the AU policy and

incorporates it with its own policy. The data was rich in its content as each interview lasted between 2 to 3 hours and this has enabled me address objective two of the study. To be able to get a much deeper understanding of the food security issue in Ethiopia, I have also assessed the role of the Ethiopian Research Organisations in policy making and implementation process and how these Organisations manage their research in relation to knowledge contribution based on the people's need at a ground level related to food security. Section 3.2.3 discusses the methods used to address objective 3 of the study.

3.2.3 The Ethiopian Research Organisations

In order to address objectives 3, which was ***(to explore the role of the Ethiopian Research Organisations in the food security policy making and implementation process and the organisations management system***), I have collected primary and secondary data from the Ethiopian Research Organisations in Addis Ababa, Ethiopia in April 2013. Initially while still in the UK, I have identified two key persons, one from the Ethiopian Agriculture research institute department office and one from Addis Ababa University research institute office. After a number of email exchanges, I have secured and held interviews with the two people after arriving in Addis Ababa.

Using the snowballing sampling method, these two persons have then referred me to more potential interviewees related to my interview questions. I have adopted semi-structured face-to face interviews which consisted open-ended questions with **Eight** key participants to get the desired data. Eight participants were small in number; however, each interviewee was a key informant, and I held in-depth interviews with each, lasting between 2 to 4 hours. Participants varying from organisation directors to researchers and extension workers have given me rich information to be able to address objective 3. Data from extension workers has been collected in 2014 during the time collecting data at a village level.

Moreover, I have used secondary data and collected relevant information from the research organisation offices and from their website that has helped me strengthening my data. I have also kept a research diary and used direct observation to get more information on the topic researched. Below, table 3.4 shows the relevant people participated in this part of the research and their departments.

Table 3.3 The participants interviewed from the research organisations in Ethiopia.

Department	Interviewees
The Ethiopian Agriculture Research Institute	The Institute Department Director The Water and Soil Management Director The Ethiopian Seed Enterprise Agency Director
4 Kilo Addis Ababa University	The Research for Ethiopian's Indigenous Trees Founder Director
6 Kilo Addis Ababa University	The Ethiopian Social Research Officer (a) A Guest Lecture from Newcastle University in the Architecture and Town Planning Department
The Ethiopian Research and Development Institute	A Social Research Officer (b) A Social Research Officer (c)

One of the main interest of this thesis, objective 4 was assessing the implementation process of the Ethiopian Government food security policy starting from the federal level until it reaches the people on the ground. Section 3.3 discusses the methods used to collect the data.

3.3 Food Security Policy Implementation Process

The Ethiopian Government has a decentralised hierarchy system when implementing a policy. Specifically to address objective 4, which was ***(to analyse the Ethiopian Government food security policy adaptation and implementation process until it reaches the people at a village level),*** I have assessed the food security policy implementation process in April 2014. Starting from the Federal Office in Addis Ababa, I then went to Bahir-*Dar* (the *Amhara* Regional Government Office), then *Debre-Markos* (the *Zone* Office). I then continued my research in *Dejen* (the *Woreda* Office) and then *Gelgele* and *Yetnora* (the *Kebele*, Village Offices). Below

is the map of Ethiopia, highlighting the *Dejen Woreda* were *Gelgele* and *Yetnora* villages are based in.

Map 3.1 Ethiopian Administrative State, *Amhara* East *Gojjam Zone*, *Dejen Woreda*, Source: GADM (2012).

I have used the snowballing sampling method in identifying the participants. **Six** key informants have been interviewed that were representatives of the policy in place at each level by using open ended questions; that lasted between 2 to3 hours each. The table below, 5.4 shows the top-down policy implementation process of this part of the study.

Table 3.4 The Ethiopian administrative policy implementation representative key-informants.

The Ethiopian Federal GTP Office →	**The Region, *Amhara Gojjam*, *Bahrdar* Office** GTP →	**The East *Gojjam Zone Debre-Markos* Office** GTP →	***Dejen Woreda* ATP Office** →	***Gelgele* and *Yetnora Kebele s* Office**
The Federal GTP Officer	The Regional GTP, ATP Representative	The East *Gojjam Zone* GTP, ATP Representative	*Dejen Woreda* ATP Representative	*Yetnora Kebele* and *Gelgele Kebele* ATP Representatives

The top-down, snowballing sampling procedure included; referral from the Addis Ababa, main office of the Ministry of Agriculture GTP, ATP representative official to the *Amhara* Region *Gojjam* main office *Bahrdar* GTP, ATP representative official. This referral continued to the East *Gojjam Zone* main office *Debre-Markos* GTP, ATP representative official to *Dejen Woreda* ATP representative official, flagship plan representative. The *Woreda* representative did then refer me to *Gelgele* and *Yetnora Keble* ATP representatives. Then permission was granted from the *Woreda* officer to interview households, farming participants at the ground level. From the ground level, I have collected the data to assess the effectiveness of the policy at the village level from the people's perspective. The following section discusses this in detail.

3.4 Food Security Policy Effectiveness at the Village Level

For this PhD study, one of the core interests, objective 5 was ***(assessing the effectiveness of the policies being implemented on the ground as perceived by the farmers)***. I therefore have examined the food security policy effectiveness at the village level from the local people's perspective; assessing what it means to be food secured. To be able to do that, I have used the case study approach selecting two villages (*Gelgele* and *Yetnora*) in Ethiopia from the *Amhara Gojjam* Region, *Dejen Woreda*.

I have selected these villages because I am from the area; as I was born in *Dejen Woreda* and I have a local knowledge and understanding of the social and cultural settings of the villages. More reasons for selecting the specific sites is discussed in detail in the site selection part in chapter six. In-depth, qualitative data has been gathered involving the household level

researcher administered interviews using open and closed questions. It has also involved focus group discussions, in-depth, semi-structured interviews and key informant interviews with community elders and other residents from the two villages. Direct observation and research diary methods I have used has also generated me a much richer data from the two villages.

This qualitative data was supported by the information gathered from the Dejen *Woreda* and the two *Kebele* representatives, while most of it was achieved during the time spent in each *Kebele*, with direct contacts with the residents. Before approaching the participants at the village level to collect the desired data, I have initially met with the Dejen *Woreda* representative official to find out about the number of households that were in each village to help me decide how many household interviews to undertake. Moreover, I have also collected information on each *Kebele*s social structure such as, when the market days were on, when the farmers were off from the farming activities and when they hold their cultural, social events for both men and women. I have got this information from the two *Kebele* representative officers. The table below 3.5 shows the people I have interviewed for this part of the study.

Table 3.5 Details of the data collected in the *Yetnora* and *Gelgele Kebele*s.

Gelgele Kebele	***Yetnora Kebele***
Household Interviews 30 participants	Household Interviews 30 participants
Focus group Discussions 6 Groups (consisting 4 to 7 people each group)	Focus group Discussions 6 Groups (consisting 4 to 7 people each group)
In-depth Interviews 10 Participants	In-depth Interviews 10 Participants
Key-Informant Interview 5 Participants	Key-Informant Interviews 5 Participants
Direct Observation	Direct Observation
Research Diary	Research Diary

The policy making and high level implementation process part of the study, revising policy documents and policy implementation interviews with the Government official representatives, from federal to *Kebele* levels has helped me shape the interview questions for the ground level participants. I have used the information I have gathered to understand the concept of the policy focus in order to increase food security through the agriculture intervention systems in place.

Prior to actually collecting my data, I have tested my interview questions by conducting a pilot study in *Gelgele Kebele*, and some questions had to be removed as they were found to be politically sensitive. For instance, ("H*ow do you feel about the policies in place in relation to politics?")* has been removed.

I have undertaken the pilot study to help me test the interview questions and to understand the social settings of the area studied. Even though I have come from the area and have a good understanding of the ways of life, I still had to get an in-depth understanding from an academic perspective. Based on this, I have changed or re-worded some of my questions according to the feedbacks I have received from the pilot studies I have undertaken using 2 focus group discussions and 3 individual interviews with the *Gelgele Kebele* residents. These data however have not been used in the study.

After the pilot studies, I have been able to form my interview questions for the household level data collection. From the household level interviews, I have developed more questions for the focus group discussions that further led to the in-depth interview questions with key informants. In both villages, data has been collected from 60 households, 30 in each village, 12 focus group discussions, 6 in each and 20 in-depth interviews, 10 in each village. And finally, 10 key-informant in-depth interviews, 5 in each village with the self-selected individuals had been held in order to gather a rich information about the Ethiopian Government food security policy effectiveness from the local people's perspective.

At each *Kebele*, the household level self-administered questionnaires have been carried out using the systematic sampling method. The first household was selected by choosing a random direction from the centre of the community in *Gelgele* Village, counting the houses along that route and picking one. After that, I used the pattern interviewing every 5^{th} -7^{th} household, depending on the availability and willingness of the person to be interviewed. The pattern of the households has been decided based on the village number of households, and every 5^{th}-7^{th} household has been the pattern in order to get an insight from the whole villages. From each *Kebele* representatives, I have found out that there were around 200 households in the *Gelgele Kebele* and 210 in *Yetnora Kebele.*

The household semi-structured interviews were designed to get the general point of view from the *Kebele* s households, however, an in-depth outlook of the research questions have been gathered from the in-depth interviews, focus group discussions and key informants in detail from participants in both villages. Participants for the focus group discussions were selected

opportunistically, based on the identification of female participants, male participants and male and female mix participants to be able to get a gender-based perspective about the policy in place.

For the in-depth interviews, participants were selected from the household interviews, based on their willingness to give a more in-depth interview. Most of the participants for the in-depth interview were self-selected. Some of the participants were interviewed straight away after the short household interviews; however, sometimes appointments had to be made for me to return, for the interviews to take place. This was time consuming as the villages were far to walk from where I was staying, usually 2-3 hours walk as there were no road links for transport and I was relying on the respondent being available and on time.

Moreover, semi-structured in-depth-interviews did also take place with the focus group discussion participants, based on their willingness to give an individual in-depth interview. Some of the interviews took place after the group discussions had finished and, in some cases, appointments had to be made. For the focus group discussions, the female groups were identified based on social events, where there were female cultural meetings and market days. Men were also identified based on social events and male market days. From these events, participants were selected. Firstly, I have explained what the study was about, and I then have asked them if they were willing to participate in the focus group discussions for the study.

The procedure included going to the women's social meeting in the *Gelgele* village, after I identified, the day, time and place of the meeting, I have asked the women from the group to participate in a focus group discussion. There were around 30 women in the social meeting and I organised two groups from the participants willing to participate in the groups, the groups consisted between 4-7 people. Another female group was organised from the women's market day. I have asked the women to participate in the discussion after they finished the market day in a specific place. The group had around 6 women involved.

For the male focus group discussions, I followed the same principle, I identified when and where men held their meetings and socialise after their meetings. I have asked the people to participate in the study after I explained what the thesis was about. From the total of 25 people in the meeting, I have organised two groups consisting of between 4-6 people in the discussions. Another group had been selected from the male market day. This was organised to take place in specific time and place to fit with most of the willing participants.

For the male and female focus group discussions, I went to the market day where both men and women were available, and I have asked the selected women and men to join in the group discussions in a time and place suitable for most willing participants. I used the same principle in both villages. In total, twelve groups have been organised in both villages, four women groups, four men groups and four men and women groups. Each group consisted from four to seven people, discussions lasting from around one and half to more than two hours each. The following section, 3.3 discusses why I have adopted the selected methods in this study, including the advantages and disadvantages of the methods used in collect the desired data.

3.5 The Research Methods Used for This Study

I have used a number of data collection methods in order to help me generate a rich PhD thesis that has addressed the study's' aim, objectives and research questions. Even though all research methods have advantages and disadvantages, I have selected my methods after careful considerations of other research methods and to the best of my ability, I have found the methods I have applied were appropriate. These methods are discussed below.

- **Snowballing Sampling Method**

The snowballing sampling method was one of the main approaches I have applied in identifying the key informants from the African Union, the Ethiopian Government offices and the Ethiopian Research Organisations. The snowballing sampling method also known as chain referral sampling is considered a type of purposive sampling and I have found it appropriate in approaching participants that I would have difficulty in accessing those in office positions otherwise. The benefit of this method according to Denzin and Lincoln (2000) and Mack *et al.* (2005) is that informants with whom connections has already been made use their social networks to transfer or refer the researcher to other people who could contribute to the research.

On the other hand, according to Noy (2008), in snowballing sampling method, information about informants is supplied exclusively by the informants themselves and this usually has a critical consequence in the sampling process. For instance, in this sampling method, the researcher gives-up a substantial amount of control over selecting the informants. However, the researcher has the option to direct the informants how many referents to whom they refer and the researcher can chose the potential participants later (Noy 2008). In my experience, even though I was relying on referents to refer me to other participants, but using this method has supported me a great deal in finding participants that were relevant to my study.

- **Interview Methods**

In order to assess the policy making process, I have collected qualitative, primary data adopting face-to-face semi-structured in-depth interviews with key informants of the African Union NEPAD and CAADP representatives and Ethiopian Government food security policy making representatives. The study included key-informants in-depth interviews with the Ethiopian Growth Transformation Plan and the Agriculture Transformation Programme policy implementation representatives at each Government level. I have also held in-depth interviews with the Ethiopian Research Organisation Officers. At the ground level, semi-structured closed and open ended question in-depth interviews were held with household participants, key informants and group participants in both villages.

The advantage of adopting semi-structured interviews according to Steele (1981) is that they mainly consist of open-ended questions, and while the interview focuses around key topics, there is also the opportunity to discuss some area of interest in more detail. Moreover, the researcher has the opportunity to explore answers more widely or other areas of discussion introduced by the interviewee. Moreover, in-depth interviews can provide rich and deep information about the experiences of individuals (DiCicco-Bloom and Crabtree 2006).

While I was collecting data, the advantage of using semi-structured open ended question interview method were for instance, the participants were free to respond in their own way, unrestricted and were free to express any other issues related to the questions asked. However, the disadvantage of this method was for instance, some participants were talking for a long time, which means it was time consuming. In some cases, I had to tell the participants that I must go on to the next question in a polite manner.

In *Gelgele* and *Yetnora* villages, I carried out the household level interviews by first selecting the first household randomly. I chose the first household randomly because there was no particular way of selecting the households. In total, I have interviewed 60 household participants in two villages. When I designed these interviews it was to help me get an insight of the Ethiopian Agriculture Transformation Plan (ATP) policy adaptation at the village level. Most of the interviews lasted between 10 to 45 minutes and included open and closed questions. Using this method, I have found interview times were shorter as it mostly consisted closed-ended question; however, it was time consuming as I had to go house to house counting in a systematic manner. The difficulty was that sometimes some people were not available,

sometimes they were not willing to participate. In a worst case, there were dogs that were barking at me and my research assistants and it was a bit dangerous to some extent.

Focus group discussion was another sampling method I have used in both villages to help me gather more in-depth information. According to Nkwi, Nyamongo and Ryan (2001) in focus group discussion methods it is possible to gather the respondents' reactions and feelings and their beliefs and experiences in a way in which would not be feasible using other methods, for instance one to one face-to-face interviewing, or questionnaire methods. The participants' outlook, beliefs and feelings may be partly independent of a group or its settings of social structure, but are more likely to be shown via the social meetings and the interaction from being in focus group gatherings.

Moreover, focus groups can help to discover or produce hypotheses and develop questions or ideas for future interview guides. They are, however, restricted in terms of their capacity to simplify findings to a whole population (Nkwi, Nyamongo and Ryan 2001). The disadvantage of focus group discussion method in my experience was that some participants were afraid to speak up their mind in front of other people. There was a sense of tension that I have felt during some focus group discussion sessions; because some participants were hesitating to answer some questions freely. From the pilot study, I have understood that some participants would be speaking less, not answer questions or not even participate if sensitive topics arise, such as topics related to politics or if they feel that they would be judged by their peers.

I have also used key-informant interviews at the ground level. Key-informant interviews are essentially qualitative interviews (Kumar 1989). These interviews are extremely important materials as they provide direct witness to support information revealed by documentary evidence. Key informant interviews are qualitative in-depth interviews with people who know what is going on in the community (UCLA 2006). This research method involves interviewing a specific group of individuals who are likely to offer essential information, data, and insights on a specific subject. The disadvantage of this methods is that only a small number of informants are interviewed. Such informants are selected because they possess information or ideas that can be asked by the researchers (Kumar 1989).

In *Gelgele* and *Yetnora* villages, I have used the snowballing sampling method to find key-village informants, such as elderly people and people with knowledge of the issues and the area to be able to get an in-depth view of the questions asked. The fact that this type of method is

time consuming, only small number of people were interviewed for this study, however, the information was rich in its content.

When I was developing my research questions, I have included open and closed-ended questions to get a wider picture of the questions I was asking. Using open-ended questions has the ability to stir up answers that, for instance, are in some cases were silenced, unexpected by the researcher and rich and explanatory in nature (Cohen and Crabtree 2006). In this method, data analysis preferably happens simultaneously with data gathering so that the researcher can produce an emerging understanding about research questions, which in turn inform both the sampling and the questions being asked (DiCicco-Bloom and Crabtree 2006).

More reasons why I have used open-ended questions is because this presents participants with the opportunity to answer in their own way, rather than encouraging them to decide from fixed answers, as closed questions usually do. Even though respondent answers are most of the time richer in quality, the amount of effort it takes to digest the information provided through open-ended questions can sometimes be overwhelming (Cohen and Crabtree 2006). Using this method has helped get a rich information from the participants, however it was a huge amount of information that I have found difficult to process and took me some time to get the best out of all the information I had gathered.

- **Direct Observation and Research Diary Methods**

Additionally, I have used direct observation and research diary data collection methods to help me record more information during the interviews and outside of the interviews. The diary I have kept has helped me to record information which would otherwise not be recorded. According to Zikmund (2000) diaries are excellent as an additional source whilst undertaking research, generating substantial amount of data with a comparative minimal amount of effort required from the researcher.

After finishing off an interview, I would take some time to sit down and write information that I have observed prior, during and after the interview. This includes unspoken body languages, office settings, group settings and any additional comments I got from other people that were not interviewed. For instance, in one occasion, after finishing an interview with the AU NEPAD representative, I was walking in the building looking around and a young gentleman approached me, and he said that he was a driver of the AU officials. He has mentioned that there was corruption in the office system with in the AU. This was an example of the direct

observation I was taking notice of and this kind of conversations and observations have enriched my understanding of the AU high level bureaucratic issues.

- **Secondary Data**

Secondary data were also collected from the Ethiopian Government offices, the AU, NEPAD Agency and already existing CAADP policy papers available from the office in Addis Ababa and via their website. Moreover, I have collected more data from literatures extensively such as from journals, books, reports and websites to be able to get an insight of the issue studied and I have used these data in my discussion chapters. The advantage of secondary data is of its availability. This type of information is already available to others for use by extracting certain theories and data from the existing information for the researcher's appropriate research questions (Kervin1992).

3.5.1 The Case Study Approach

At a ground level, I have adopted the case study approach in order to get a deeper insight in to the food security policy effectiveness from the peoples' own perspective; their reality. Case study methodology is mainly guided by two key approaches, one proposed by Robert Stake (1995) and the second by Robert Yin (2003, 2006) (Baxter and Jack 2008). Both authors make sure that the topic of interest is well explored, and that the essence of the event is shown clearly. Moreover, both Stake (1995) and Yin (2003) base their method to case studies on a "*constructivist paradigm"*. Constructivists claim that" *truth is relative*" and that it is dependent on one's viewpoint (Stake 1995 and Yin 2003). The people participated in this study also had the chance to tell their stories from their perspective and their reality. According to Yin (2009), the core of a case study is the main trend among all types of case study methods and it tries to reduce a decision or set of decisions, why they were made, how they were implemented and with what outcome (Yin 2009).

Case study research method is determined according to Yin (2009) by the type of research question posed, who, what, where, how and why factors, the extent of control an investigator has over actual behavioural situations and the degree of focus on the existing as opposed to historical situations. Yin (2009) mentioned that case study designs need to maximise four conditions related to design quality. Four tests that needs to be taken in to account when designing a case study are: construct validity establishing correct operational measures for the concepts being studied, internal validity establishing a causal relationship, external validity

establishing a domain to which a study's findings can be generalised and reliability demonstrating that the operations of a study can be repeated with the same results.

When I designed my case study, as I have discussed above I have used different data collection methods such as household interviews, focus group discussions and key in-depth interviews in order to construct, internal, external validity and reliability of data. I have used my local knowledge, social and cultural settings as an opportunity to gather the desired data for this thesis. Brady (2014) stated that opportunity sampling uses the knowledge and qualities of the researcher to discover a sample, for instance, using a researcher's local knowledge of a place on which to base a study or using a researcher's previous experiences to contact participants or gatekeepers.

Brady added that the main disadvantage of the opportunity sampling method is its biased nature. Because the members of it have self-selected and are all similar in at least one way, any results will only be truly generalizable to that specific group of people. Even though using this research method in *Gelgele* and *Yetnora* to some extent was biased, but it was also a great opportunity for me to learn about the issue I studied, as people were open to me and were very keen to tell me about the issues they had related to polices of food security in their area.

This PhD study was considered a qualitative research and a number of different data collection methods have been applied at the policy making and implementing process administrative level and in the two villages to strengthen the study. In the data generation of this thesis, there were a number of complex demands I have faced in developing my argument as it required a wide range of data collection method. Furthermore, linking the macro and micro level research was needed to combine the existing literature of the AU and Ethiopian Government and reach a conclusion for the thesis.

I have made great efforts to bring the validity, reliability, credibility and relevance of study together in when designing, conducing, analysing and concluding this study. In doing so, I have used a number of data collection methods such as adopting a case study approach to enrich my study. According to Yin (2008) a case study method has the potential to create data by adopting different data gathering methods. Each data creating methods cannot provide an exact image of the whole case. Different techniques are necessary to build up an advanced image (Byrne 2001). One of the strategies I have used to strengthen the research at the ground level was collecting another data in another village. This means that by repeating and applying the same method in a different village not only have given me a greater understanding of the policy in

place being adopted by the people and its effectiveness, but it has also strengthened my PhD thesis at the ground level.

In-depth interviews and focus group discussions compose important sources of information on people's experiences of the policies in place and their impacts on the households and individuals helps strengths the data gathered for the thesis. The data gathering methods such as household interviews, focus group discussions and in-depth interviews have been used to help me structure the validity of this study. Based on the knowledge I gained from the literature reviews and the information I gathered from reports and desk studies that is already available from the AU and Ethiopian Government Agencies, the data gathered can compare the constructive validity.

However, I have found it difficult to measure the external validity because this data gathering was small in its size. The effectiveness of the food security policy at the ground level was examined from the tested participants' perception only and it does not represent the whole population. The internal validity of the research establishes a causal relationship between the policy in place and the impact it has on the people at the ground level. This is measured through the interviews gathered from the farmers and this was based on their description and perspective, how the agriculture intervention policy directly affected their day-to-day life and changed it for better or for worse. This has been discussed in detail in the analysis chapter.

3.6 Research Ethics

When undertaking a qualitative research, there are serious moral issues that needs to be considered (Seidman 2013). Questions arise as to what intent the research is done, by whom, for what purpose and what benefits; and all these questions needs to be addressed before doing a sensitive subject research topic (Seidman 2013). According to Flick (2014):

"In the wider public, a sensitivity for ethical issues in research is growing due to scandals" In many domains, research has become an issue of ethics (Flick 2014, P.54).

Practicing ethical code of conduct was the core and central part of this research throughout its life cycle. I have made number of efforts to get a deeper understanding of ethics and its code of conducts through desk study and by talking to my supervisors discussing the University's rules and regulations related to research ethics prior to undertaking the field study. According

to Flick (2014), codes of ethics are created to regulate the relationship between researchers and participants.

I therefore have followed **Newcastle University's Ethical Code of Conduct** procedure prior to my field trip. The process I have followed involved; first downloading the online Ethics form from the University's website. The form has a series of questions, which aim to assist the researcher identify whether the research project is "high risk" and requires further formal ethical review by a Research Ethics Committee. After completing the form I and my supervisor have signed it and sent it to the University's Research Ethics Committee for approval. Based on the answers I have provided in the ethics form; **the University was satisfied that the project meets the University's ethical expectations and the committee granted my project its ethical approval**. I have also completed **Newcastle University Risk Assessment Form** before my trip.

Moreover, I have printed out C**onsent Forms** that explains "**the research topic, its purpose, confidentiality and their right to withdraw from the research at any time**" for the interview participants to complete before each interview. It was only after this process I went to my field trip to Ethiopia to undertake my research work. Throughout my filed trip, I have followed the Ethical code of conduct rules and regulations of Newcastle University and tried to minimise any risk to myself or to the participants to the best of my ability.

Once in the field, I had to translate the English consent forms to *Amharic* (local language); so those who do not speak or read English could read and understand it. For the office level participants, I have given the English version of consent forms because they could read it; and I had their approval. However, at the village level, most of the time I had to read the *Amharic* version consent form to the farming participants. This was because most of the farming participants could not read. I have also assured that all the information the participants have given will be confidential and their answers used in the thesis would be attributed anonymity and they gave me their consent.

For this study, four ethical issues related to the interview process as mentioned by DiCicco-Bloom and Crabtree (2006) were considered. These were: reducing the risk of unexpected harm, protecting the participants' information, notifying interviewees about the nature of the study and reducing the risk of exploitation effectively (DiCicco-Bloom and Crabtree 2006). The researchers' duty is to acquire information while listening and encouraging another person to talk. Whenever people conduct research on people, the well-being of research participants

must be the researcher's top priority. The research question is always of secondary importance (Zikmund 2000 and Mack *et al.* 2005).

According to Seidman (2013) people in relative power position usually undertake research and often it serves the researcher's personal achievement. Flick (2014), stated that when undertaking a research, it is vital that researchers avoid harming participants in any ways, such as physical or psychological in the process. Mack et al. (2005) cited that research ethics deals primarily with the interaction between researchers and the people they study. Research ethics ensures and considers the needs and concerns of the people the researcher studies. Moreover, it establishes trust between the researcher and study participants (DiCicco-Bloom and Crabtree 2006).

Therefore, prior to each interview session, I have explained the purpose of the research to each participant and they were asked for their permissions. Also they were told their rights to choose not to answer any questions if they do not wish to. Moreover, participants were told about how the information they give will be obtained and how it will be used as part of the study. I have also encouraged the participants to speak about their experiences and opinions in terms of the questions, and I did not interfere in the answers. The information provided by the participants was recorded mainly on paper and in some cases in an audio and camera recorder.

Even though I have followed the ethical code of conduct regulations while in the field, in practice I have had a number of issues I had to deal with related to ethics when undertaking my research at an office level and in the field too when interacting with farming participants. For instance, many of the challenges I have faced conducting interview data at office levels were that participants were usually key people such as the directors of a specific department and during the interview, most have made it clear that I was not allowed to video or tape record the interview session. And in some cases, I had to show my bag that I was not hiding any kind of recording machine and secretly recording them. This has made the interview session a bit awkward; as I have felt that there was no trust between me and the participant. However, as I have understood the ethical code of conduct, I have managed to get over this kind of issues successfully.

More office level ethical difficulty I had encountered was related to sexual harassment; the use and abuse of power from some officials. In one occasion, A British NGO worker which was one of the interview participant I have come across with from a referral from another official have tried to use his power and position in his job to patronize me and harass me sexually. He

has done this by trying to make interview times and places at night and in bar and calling me after mid night and texting me. This was a very sensitive issue and upsetting for me at the time. But with family and friends support I have come out of it fast and continued my research in a calm but more conscious manner. I have not used his interview answers in this thesis as it was inappropriate.

Moreover, while in a village some of this issue I have faced related to ethics was that for instance, some faming participants would give me an interview and would allow me to record their answers. However, after I have finished the interview session and if the interview was taking place for instance in place where you can have a drink such as tea or traditional alcohol, I would offer them a drink and have a general conversation. In some occasions, some participants have started talking more openly after few drinks of alcohol. The conversation would heat-up and sensitive political issues would emerge.

The actual people that have given me interviews just 30 minutes before and have said that they have no problems related to politics or Government political issues, they were now very angry, frustrated and even swearing the leadership and said that there was so much oppression and political issues in their area. And they have told me to go and tell the world about it. This has made me upset in some occasions, as I have understood that, they would tell me what I wanted to hear during the interview, however they have a different side to their story, especially once they have opened up after a few drinks or when we develop more trust between us.

In practice, I had to follow the ethical codes precisely and I understand its principles, but in this case, I had to use the observation and information I have gathered from these occasions in my discussion as they were rich in their content and they show the contradiction of the situation or the issue I was studying in great detail. In doing so, I did not expose or put any person in danger as I did not use any names or any other specific detailed identity. I have used these observations and information and some unfortunate occasions in my discussion because they were very important and add more information to issue I was studying and to show the reality of research in action encountered by researchers.

Therefore, ethics in research is a very serious issue, it is not straight forward thing as it is "*what to do and what not to do*". In my experience, it has come across as very sensitive and I had to be very aware, alert and constantly try practice it throughout the time I have spent in the field; but in some cases, I had no control over it, even for my own safety.

3.7 Policy Making Process Research Limitation

When I was conducting my data for this PhD study, I have had many opportunities to enjoy the process, but I have also faced a number of challenges both at the macro and micro level. At the macro level, the positive being that I have learnt so much about the food security policy making and implementation process from the bureaucracy side of it and I have also met many great people in the process.

"*There are no perfect research designs. There are always trade-offs*" (Patton 1990, p.162).

However on the other hand, policy based data collection method can be very difficult as it could be sensitive, time consuming and difficult to get access to the key people. According to Dickson et, *al*. (2007), when researchers undertaking a study that involves sensitive topics, they experience many challenges though out the research process. For instance, one of the main issues I have had was accessing the relevant key informant policy representative participants, it was time consuming.

For instance, after an initial email communication with two of the AU NEPAD and CAADP policy representatives, I had to go meet them in the AU headquarter office, Addis Ababa. However, I could not get inside the building, as the gatekeepers did not allow me in with the letter I had from Newcastle University, a letter confirming that I was a research student. Hood et al., (1996) and Lennox, (2005) cited that gaining access to participants in order to gather data in many cases involves going through a hierarchy of facilitators or gatekeepers.

I have been told by the gatekeepers to go back and bring another letter from Addis Ababa University. This has caused me a lot of problems, because I was not a student of Addis Ababa University and getting in to the university to talk to staff to help me write a letter to the AU building gatekeepers was another issue. I had to make a number of efforts to finally get in to Addis Ababa University and get a supporting letter.

Some of the other challenges I have faced in order to secure interviews with such as the Ethiopian Government bodies including those at the Federal, Regional and Zone level was getting a hold of the relevant persons. I had to go to offices many times before finally meeting the identified person and arranging an interview day and time. In one occasion, a gatekeeper was very helpful in assisting me as he said that he would call me when the person I was wanting

to see actually comes in the office. Therefore, gatekeeper might create a challenge, but they can also bring solutions too; as Munford et al. (2008) stated, gatekeepers may also facilitate access.

There were similar problems encountered at the *Woreda* and *Kebele* levels too. This was time consuming and expensive. On the other hand, securing interviewees with some of the identified key informants of the Ethiopian Research Organisations was straight forward.

As I had limited time, securing interviews with the relevant key AU and Ethiopian Government policy representatives and research institute participants was very crucial and a number of attempts had to be made before finally securing interviews with most of the respondents. There was also no time for a pilot study in order for me to re-design my interview questions as the respondents were only available for the interviews once. Therefore, I had to make a number of efforts to make sure I have asked the right questions and prepare the questions well before the interviews took place. In some cases, some questions have emerged during the interview, based on the responses I got from the respondents.

3.8 Ground Level Research Limitations

As a female Ethiopian, coming from the study area and speaking the local language, *Amharic*, I have had the opportunity to be accepted in the community to undertake the study. However, I have also experienced some difficulties while collecting data in both villages. One of the main issues I had was that it took some time to build trust among the *Kebele* security officers and some participants. To gain their trust, I had to convince them that I was just an independent research student and did not have any specific agenda

Another challenge I encountered was that after finishing the interviews with the policy implementation representatives of the *Kebele* administrative, I did not take an *Amharic* official letter to interact with the ground level household participants. Therefore, I was asked by the *Kebele* security officers for an official *Amharic* letter from the *Woreda* office before I was allowed to interact with the people on the ground. I went to the *Woreda* office to get the official letter, one each for the *Kebele* gatekeepers and for the village participants to show if they require seeing the letter. After that I was able to move freely and interact with the community without being watched by the gatekeepers.

During the interviews at the village level, one of the main issues I have faced was that for instance, whenever there was an interview, if one of the participants, or the neighbour, was one

of the leaders of "*the 1 to 5 system*", the participants were reluctant to speak up their mind, or difficult to have an open discussion. The 1 to 5 system is a system that is set by the Ethiopian Government. One person is elected to be the leader of other four people in an area in the *Kebele*, and they meet every few days and discuss the policy implementation process, the challenges and success of the policies in place. This one leader then reports back to his/her leader.

This was initially understood from the pilot study interviews. The participants have mentioned that there are leaders who will be watching who comes to do research in the areas that is outside of the Government body and in their presence, participants will likely tell a story what the Government wants to hear. Therefore, this have been taken in to account when conducting the interviews; and when I felt that the participant was not feeling comfortable, I would shorten the interview and move on to the next participant and come back to this person another time when they were more comfortable to speak more freely.

Usually how to tell if one of the participants was one of the 5 leaders was that he would have a gun (rifle) with him. This was also learnt from the time I have spent in the villages and also from word of mouth. This was difficult for me because every time I see someone with a gun, I would think that "*ok this is the leader and he is watching me*". It made me uneasy at times and when I arranged a group discussion, some of the persons turn up with a rifle, I would automatically think that the session would be controlled in unspoken manner, as participants would talk with some hesitations to some questions. This was one big issue I have faced in the villages and I had to deal with it with the best of ability without offending anyone, putting myself or participants at risk and getting the most out of the all the information I gathered in the process.

It was also interesting that some participants I have already interviewed a day before were very open to talk about the political issues they were having related to the ATP policy after they had some alcoholic drinks. I could not say much about this for the confidentiality reason. However, it was clear to me that there were some political issues people were reluctant to speak about during the official interview sessions. This was a problem, because after I have learnt this, it made me think that if they were telling what they wanted me to hear; or what actually was going on in their life related to the policies in place.

While conducting the group discussions, there were a number of practical challenges encountered. The group discussions had been organised in the market days, with the willing participants. Firstly, after identifying the areas where market days and social events took place,

gathering a number of people and having them available at the same time for discussions was a challenge. As some people might want to participate then and while others preferred to meet after a few hours or another day. So I have divided the groups according to who were available at the same time and I had to make appointments with the rest of the people who can make it another day or time. This was time consuming and difficult to organise.

Some of the group discussions were planned to take place in the *Kebele* monthly meeting day, but this invoked a problem as the *Kebele* officials were not sure who I was and suspicious of me. After some discussions with the *Kebele* security officer, I was told to go back and bring a letter from the *Woreda* in *Amharic* with the permission stamp to be able to interact with the community in the *Kebele*. As the letter I had from the university wan not enough. I could not conduct the group discussions, as the next *Kebele* meeting would have been in a month's time.

The political sensitivity nature of the study topic has made the data collection times challenging to some extent. Including the policy implementation officers that have been interviewed and the participants at the village level, there was some hesitation and resistance to discuss political issues, due to the fears of being arrested. Therefore, I had to build trust and make it clear that I was an independent student researcher. Their answers would be confidential, and the information they give would only to be used in the research thesis and their real names would not be displayed in the thesis. This was the case mostly at the village level interviews.

Moreover, the sensitivity nature of the topic made some respondents at all level reluctant to be recorded despite assurances of confidentiality and anonymity. The information therefore had to be recorded on paper, in the diary, with the help of the research assistants. To ensure reliability, I have often checked the answers of the respondents when I wasn't sure. Usually, I would also write up my notes on the computer each day after the interviews, while the memory is still fresh and with the help of the research assistants.

The sites I have selected for this study were the Government agricultural intervention areas; and there were a number of researchers that go there to conduct research, mostly NGOs and Government bodies. Therefore, people in the *Kebeles* were accustomed to being interviewed and this contributed to the respondents being fatigued and unwilling to participate in some cases during the household interviews. However, speaking the local language and coming from the area has helped me communicate with most of the residents' successfully.

In the selected areas, there were no large-scale private sector based commercial agricultural productions taking place. However, within the farming community, cash crops were becoming

increasingly common. With the agriculture intervention programmes (inputs), farmers were encouraged to produce more for commercial purposes. This does not include household food security. As most of the respondents have mentioned that they produce more food to sell so that they can afford to buy other goods. Therefore, there was no interview consisting of the private sectors in the villages.

Finally, transcribing the interview data was a challenge; because all the interviews were in *Amharic*, the national but also the local language. I did the best I could to not lose the context of the interview when translating it to English.

3.9 Positionality

One of the main reasons for conducting this research work in Ethiopia, specifically in the selected villages (*Gelgele* and *Yetnora)* was because I was born in the area (*Dejen Woreda*). The fact that I grew up in the *Woreda* and for personal reasons, I have a deep personal interest in understanding the issue of soil erosion, deforestation, soil degradation, food security and peoples' well-being in the area. When conducting the research at the ground level, I have had a great opportunity to be accepted by the community residents, developed a closer relationship with most of the participants and have a greater understanding of the issue of the policy in place related to food security and how the policy affects their well-being in their day-to-day life.

The position I was in has given me the chance to interview people freely with my own mother language. Moreover, knowing and understanding the cultural and social settings has made it a bit easier for me to undertake the research successfully. However, this positionality could be considered biased. To avoid this issue (being biased), I have tried my best not to take sides, become too attached or take things personally when conducting my data and when analysing my results in my discussions. I have remained professional and academic to the best of my ability so that it would not affect my research. I have only tried to use the advantages of coming from the area, speaking the language and knowing the social settings to understand the issues I was studding in a greater depth.

3.10 Date Analysis Process

In order to help me analyse the data collected, I have adopted a "Thematic Analytical" (TA) method. Using this method, I have analysed the data I collected in three phases. In the first phase of my research trip to Ethiopia in April-June 2013, I have collected and analysed data

from the African Union, the Ethiopian Government and the Ethiopian Research Organisation offices.

The second phase was analysing the data I gathered from Ethiopia in April-July 2014. The data I have examined was gathered from the Ethiopian Federal, Regional, *Zone*, *Woreda* and *Kebele* offices. I have also analysed the ground level data collected from two selected village participants. Household interviews, focus groups and in-depth interviews including key-informant interview data have been analysed after returning back to the UK in August 2014.

The 3rd stage of my data analysis process included putting all my data findings and information together from 2013-2014. I had to put together the African Union and the Ethiopian Government policy level information; and also data I have gathered from the Ethiopian Research Organisations and the Ethiopian Federal, Regional, *Zone*, *Woreda* and *Kebele* level policy process interviews. Moreover, the ground level data I have gathered from the 60 households, 12 focus group discussions, 20 in-depth interviews and 10 key informants had to also be put together with the rest of the data to make sense out of it all; and address the thesis aim, objectives and research questions. To help me with the data analysis process, I have used thematic analysis method.

One of the main reasons for selecting and using thematic analysis method for my analysis is according to Guest (2012), TA is one of the most common forms of analysis in qualitative research. Braun *et al.* also stated that thematic analysis is a method for identifying, analysing and interpreting themses in qualitative research. Moreover, this method highlights pinpointing, examining and recording themes within data (Braun and Clarke 2006). According Guest (2012), themes are patterns across data sets that are significant to the report of a phenomenon; and they are related to a specific research question. Like other qualitative methods, thematic analysis assists the gathering of knowledge of the meaning made of the experience under researched by the groups studied; and presents the necessary foundation for establishing suitable models of human behaviour, thinking and feeling (Joffe 2012).

Braun and Clarke (2006) added that one of the benefits and advantages of thematic analysis is its flexibility. This method provides a theoretical freedom and it is a very important research tool. Moreover, thematic analytical method can potentially provide a detailed, rich and complex research data (Braun and Clarke 2006). On the other hand, the disadvantage is that its flexibility makes it difficult to concentrate on what aspect of the data to focus (Guest 2012). However,

the end result of a thematic analysis should highlight the most significant, relevant and important group of meanings present in the dataset (Daly *et al.* 1997).

I have found using thematic analysis was a suitable method among other methods for analysing my data for this PhD thesis work. For instance, I have considered in using grounded theory analytical method. However, according to Bryant and Charmaz (2007), grounded theory analytical method unlike TA method does not give standard rules to follow for the identification of categories. However, the simplicity and the flexibility of TA method gave me the opportunity to go through my interview information freely and assesses each theme according to my interview questions. Moreover, the fact that this method is widely used in qualitative research field, I have found it to be a reliable way of analysing my qualitative data effectively. In this thesis, I have analysed my data in the following way.

First, I have separated the African Union, the Ethiopian Government and the Research Organisations data and took the time to transcribe them all separately on to paper and then typed them all in to a computer. Some of the information was recorded on tape recorder and some were on paper. Therefore, putting them all in a written paper format was the first stage.

I also had to translate most of the information from *Amharic* (Ethiopian official language) to English. This was time consuming; because most of the interviews were in *Amharic*. When translating, I had to be extra careful in not to lose the context of the original information given by the participants in the study. Even though I have tried my best to translate the interviews word-by-word; it was still very difficult to get it 100 per cent right and I have struggled to some extent.

The next step was **Coding** the interview information. According to Boyatzis (1998), coding is the main process for developing themes within the raw data by recognising important moments in the data and encoding it prior to interpretation. After separating the office level data, household interviews, focus group discussions and in-depth interviews including key-informant interview data, I coded the most relevant and important answers and discussions. This was based on my interview questions and repeatedly mentioned themes using different **colours** as a coding system.

I had to go through each interview information and highlight the most relevant and important answers I have got from the participants. For instance, what I have considered important were that themes that have been mentioned or raised by most of the participants and in many occasions. For example, when analysing data from the office level policy based interviews,

themes that came up often were such as "*policy flows from top-down*", "*adopting technologies would help increase food security*" and "*the priority is to feed people at least three times a day*" .

At the ground level, themes that I have found significant and important were for instance, what the farmers have mentioned many times as issues in their areas related to the policies in place. These are for instance, the cost of the technologies farmers were using; such as "*the cost of fertiliser is too high"* theme came up many times and has been mentioned by many farmers when I was transcribing my data from a village level interview.

When analysing all these data, I have found it difficult; as it was time consuming to get the exact context of the information. This was because firstly most of the original answers were in *Amharic;* and secondly the fact that I have collected data from different sectors such as from people speaking political languages from the African Union and the Ethiopian Federal office; to individuals from a farming community to social researchers from Addis Ababa University; it was difficult to bring all this in to a one aligned argument and thesis.

The African Union and the Ethiopian Government policy politics and the Ethiopian Research Organisations data analysis could be found in chapter five. Policy effectiveness according to the farmer's perspective analysis is found in chapter six. Chapter seven analysis the relationship between sustainable food security, human well-being and human development concept in the two selected villages in Ethiopia.

3.11 Conclusions

Designing my research questions, conducting and collecting the data in the field to be able to address the thesis aim, objectives and research questions has been very challenging but an interesting journey and also rewarding. It was a very difficult task to undertake a qualitative, especially a sensitive topic, which I have found this study to be while in the field. Moreover, getting the most out of the information I have gathered and address my research questions was a huge task I had to overcome with support from my two supervisors.

Researching policy, sustainable food security and well-being issues in Ethiopia is a huge topic that needs to be explored in wider and deeper context. I have only taken a small part and did the best I could to gather as much information as possible with the time and resources I had available and produce a rich PhD thesis that could possibly lead to further study in Ethiopia. I therefore would like to acknowledge all the people that took part in this study at all levels. All

the information that is used in this PhD is the information I have given consent from the participants and also form my own direct observation and experience. I would also like to acknowledge my supervisors for the close support they have given me in the entire research method process.

The next chapter, chapter four discusses the African Union and the Ethiopian Government policy making and high level policy implementation process. This chapter also discusses the Ethiopian Research Organisations role in the policy making and implementation process related to food security in the country, as well as the organisations management system in conducting research that is relevant to the people related to food security.

Chapter 4. The African Union and the Ethiopian Government Food Security Policy and Implementation Process

4.1 Introduction

In this chapter, I discuss the African Union and the Ethiopian Government food security policy making process and the high level implementation process; from the African Union to the country level. I state the food security policies that are already in place at the AU and the Ethiopian Government level to be able to solve the food insecurity issue at a continental and national level. The role and the involvement of the Ethiopian Research Organisations in the food security policy making and implementation process and their management system has also been discussed in this chapter of the thesis.

The purpose of this chapter is only to outline the policies in place and the implementation process from the interviews I had undertaken with the African Union and the Ethiopian Government policy officials. The information was also gathered from the government official websites and policy papers from their offices. Critical analysis of the policies in place is discussed in chapter five. Section 4.2 discusses the African Union food security policy and its implementation process until it reaches a member country.

4.2 The African Union Food Security Policy and High Level Implementation Process

The Sub-Saharan African (SSA) region is one of the richest regions of the world. It is rich in its diverse people and cultures, rich in natural resources such as minerals, water, forests and wild animals; however, despite its wealth, this region is increasingly known for food insecurity. For instance, in 2012, around 200 million people were estimated to be food insecure in SSA (UN 2012). The African Union has clear policies in order to reduce the number of people food insecure in the continent. I have identified these policies in place and examined the processes and how it has been passed on to a country level using the top-down policy implementation process approach.

Within the African Union, the New Partnership for Africa's Development (NEPAD) Agency and its Comprehensive African Agriculture Development Programme (CAADP) framework policies deal with food security related matters in SSA. For this purpose, I have identified and assessed the policies within these agencies in this study. First, in order to get an in-depth insight into the issue studied, I have identified and discussed the origins of the African Union, the NEPAD Agency and the CAADP framework.

4.2.1 Pan-Africanism, the Organisation of African Unity and the African Union Origins

The Pan-Africanism movement has been initially started as an anti-slavery and anti-colonial movement. It was created by the African people in the continent and the diaspora in the late nineteenth century. However, the aims of Pan-Africanism have evolved through the following decades (Packer and Rukare 2002). The narrative of Pan-Africanism emphasised that "*the fate of all African peoples and countries are intertwined"*. At its core, pan-Africanism is a belief that "*African people, both on the continent and in the Diaspora share not merely a common history, but a common destiny"* (Geiss and Keep 1974). Based on this idea, Pan-Africanism believed unity is vital to economic, social, and political progress and it aimed to unify and uplift the people of African descent. During the interview conducted with the NEPAD Agency representative in (2013) the participant stated that:

> "*All Africans abroad and home must unite together, take charge and stand together if we are to solve any of our current problems in our continent*" (NEPAD Agency Representative 2013).

The "*African Union*", as it is currently known as; headquarters in Addis Ababa, Ethiopia has originated from the "Organisation *of African Unity*" (OAU). The OAU was created by the Pan-Africanism movement in 1963, advanced from the inspiration that all African countries stand together, strong and united against colonial suppression and racism, and had the objective of working together to advance the lives of Africans (Packer and Rukare 2002). The OAU was one of the main important results of the Pan-Africanism movement and it was established by 37 independent African Nations in Addis Ababa, Ethiopia. The OAU stands to promote:

"Unity and development, defend the sovereignty and territorial integrity of members, eradicate all forms of colonialism, promote international cooperation and coordinate members' economic, health, diplomatic, welfare, educational, scientific and defence policies" (AU 2013).

From my interview, the NEPAD Agency representative official has also stated that:

> "*The pan-African movement was there to serve a purpose for the people of Africa to rise above the traumas of slavery and colonialism; to remember who we were as people and take charge in the making of our own destiny*" (NEPAD Agency Representative 2013).

After the OAU operated for over thirty years, a reform was necessary mainly because the present-day challenges faced by African nations were no longer the same as those of 1960s. For example, a primary function of the OAU was of eradicating colonialism and establishing the independence of African nations had been virtually completed (NEPAD 2012).

In the year 2001, the Constitutive Act of the African Union (AU) entered into force, representing the start of a new political, judicial, and economic reform for Africa. The African Union comprises mainly the Pan-African Parliament, the Court of Justice and the Central Bank. The entry into force of the Constitutive Act also marks the end of the Organisation of African Unity (Packer and Rukare 2002). The Table below, 4.1 shows the significant African Organisations, agencies and their link to a food security policy framework.

Table 4:1 The name of key African Organisations and the year they were created, Source: AU (2010).

Name	Year of Creation
The Pan African Movement	Late 19th century
The Organisation of African Unity (OAU)	1963
The African Union (AU)	2001
The New Partnership for Africa's Development (NEPAD)	2002
The Comprehensive Africa Agriculture Development programme (CAADP)	2003
The Alliance for a Green Revolution in Africa (AGRA)	2006

The relationship between these agencies is that from the Pan African Movement, the OAU was founded and the African Union came out of the OAU in 2001. The NEPAD agency was then

formed in 2002; and the CAADP framework which was created in 2003 is operating under the NEPAD Agency and deals with food related issues in the continent. The Alliance for a Green Revolution in Africa is linked with the AU, NEPAD and CAADP framework and deals with the agriculture sector of the continent. Section 4.2.2 discusses the policies in place in the African Union related to food security.

4.2.2 Policies in Place

- **The NEPAD Agency**

Through the African Union, the New Partnership for Africa's Development (NEPAD) was created in 2002. NEPAD was found as the result of three previous parallel initiatives. The first was the Millennium Africa Recovery Plan (MAP), led by the then South African President Thabo Mbeki and disclosed at the World Economic Forum in Davos in January 2001. The second initiative was the Omega Plan, shaped by the President of Senegal, Abdoulaye Wade and presented in January 2001 to the Summit of Francophone African leaders in Cameroon. The third initiative was of the New African Initiative (NAI), found from MAP and the Omega Plan combined.

It was the third initiative that then led to NEPAD in 2001 by OAU and approved by AU in 2002 (NEPAD 2012). NEPAD operates under the main objectives of establishing conditions for sustainable development, peace and security, democracy and good politics, economic and corporate governance, regional cooperation and integration and capacity building (NEPAD 2012). The NEPAD agency expert during the interview stated that:

> *"NEPAD is a very important Agency for the African people. It is because it encourages policy reforms and helps increase investments in the priority sectors, such as agriculture, human development, infrastructure and the environment. It also mobilises resources, increasing domestic savings and investments, management of public revenue and expenditure and participate in Africa's share of global trade and foreign direct investment"* (NEPAD Agency Representative 2013).

The NEPAD agency members have also drafted specific principles. The principles are African combined ownership and leadership around a collective dream, good governance and responsibility, securing the development of Africa on its resources and increasing the resourcefulness of its people in all aspects. Moreover, it is to develop partnerships between and amongst the African people, acceleration of regional and continental integration, building the

competitiveness of African nations and the region, creating a new international partnership between Africa and the rest of the world and significant commitment in meeting the MDGs (NEPAD 2012). The NEPAD water management expert that I have interviewed expressed that:

> "*One thing that makes NEPAD Agency very different from all the previous similar agencies is that it is owned by Africans. It was initiated by Africans, decisions are made by Africans and its main objectives are to serve the African people. We believe that it will only get stronger in the coming years. As for now, it operates under the main objectives of: establishing conditions for sustainable development peace and security; democracy and good political, economic and corporate governance; regional cooperation and integration and capacity building for the African people*" (The NEPAD Water Management Expert 2013).

Through the NEPAD Agency, African leaders have recently pledged to resolve the challenges of poverty, malnutrition, hunger and food insecurity. This is by making agriculture the main tool to deliver agriculture-based economic and social transformation for the people of Africa. This was to be achieved through the Comprehensive African Agriculture Development Programme (CAADP) framework (AU 2016).

- **The CAADP Framework**

The African ministers of agriculture met in Rome in June 2002, at a special NEPAD focused session of the Food and Agriculture (FAO) Regional Conference for Africa and African Governments have approved and set CAADP up as the continent's main development programme, in Maputo, in 2003 (AU 2010). The session in the Regional Conference for Africa in Rome in June 2002 that was attended by African Government Officials and International Development Agencies such as FAO identified four aspects of strategies, which later emerged as pillars of CAADP. This is to strengthen agriculture and improve food security in Africa. These pillars are:

1. Land and water management
2. Market access and infrastructure
3. Food supply and nutrition and
4. Agricultural research.

CAADP has been set up to address the problems of African's agricultural issues and to help eliminate food insecurity and reduce poverty through its agricultural transformation programme (Kolavalli *et al.* 2010). Since CAADP's first establishment, its most important attempt was to finding a comprehensive answer to the problems of agriculture on the continent of Africa (Brüntrup 2011). These problems include according to the NEPAD official representative, the lack of technology such as chemical fertiliser and improved seeds and market access. CAADP covers a wide area of issues in the continent, varying from natural resource management through agriculture and value chain, to food security and creating income to farmers through diversification. The NEPAD water management official during our interview stated that:

> *"CAADP is a critical framework for African agricultural transformation plan. It initially had a focus area mainly towards crops but, specific to some countries, CAADP have added cross-cutting issues such as livestock, fishery, forestry and agricultural education"* (The NEPAD Water Management Expert 2013).

It is through the CAADP framework that the AU food security policy is being recognised and member countries adopt and implement it. I have discussed the process below.

4.2.3 Policy and Implementation Process

The African Union makes its agriculture related policies through the CAADP framework through very high level meetings. There are many levels of processes involved on how it functions before it is implemented through member countries and reaches the people on the ground. For instance, the CAADP policy representative official stated that:

> "*CAADP has a policy process that starts with the CAADP Launch, which is the endorsement of the high level officials, such as the ministry of agriculture or the representative of the Prime Minister. This is to approve CAADP and appoints persons to be in charge of coordinating all the CAADP policy process. All the CAADP framework policies are related to agriculture and its long-term and mid-term goals*" (CAADP Policy Representative Official 2013).

The CAADP framework policy process continues from the CAADP launch to the compact signing and then the roundtable meetings. The signing of a CAADP compact symbolises a commitment to an investment, agreed on key priority areas and an overall vision for agricultural transformation. The CAADP official added that:

> *"After the compact is signed, there is now the design of the national agricultural investment plan. Once the national agricultural investment plan is finished, there is a request for NEPAD to send experts to make a technical review to check on the compliance of the national agricultural investment plan with the country's own CAADP principles of the four pillars*" (CAADP Policy Representative Official 2013).

The agricultural investment plan is more detailed than the compact and it shows specific areas of priorities which stakeholders plan to invest in. The stakeholders include not only government officials but also the private sector, farmers and development partners. The official continued to explain that:

> *"NEPAD checks the compliance of the investment plan with the long term national policies of a country. When all the above processes are completed and the recommendations from the technicality review are incorporated into the investment plan, the next stage is the Business Meeting"* (CAADP Policy Representative Official 2013).

According to the representative, the business meeting is where the national agriculture investment plan is discussed amongst all stakeholders, stakeholders such as government agencies and donor agencies. The business meeting is a meeting where representatives pledge funds and to get funding to implement the investment plan. This is the most important part of the policy process. The CAADP expert official mentioned that CAADP is an ambitious framework. It aims to increase government's budget, donor and private funding to help improve its quality and service. The CAADP official further articulated that after all the stakeholders agree on how to finance the investment plan, it then goes to the operationalisation phase, and then the implementation process takes place.

Regarding the implementation process, CAADP operates with the Regional Economic Communities (RECs). The Regional Economic Communities are the building blocks of the African Economic Community established in the 1991 Abuja Treaty. RECs include eight sub regional bodies which provide the overarching framework for continental economic integration. RECs are major players in the CAADP implementation planning process. For instance, the East African Community (EAC) in the East is the one that is responsible for Ethiopia. The AU official stated that:

> "*The policy planning process in its structure is very high level, as the AU works through the NEPAD agency, followed by RECs, and CAADP is a framework within with all*

> *these institutes. The African Union within all these channels works in collaboration with international agencies such as the Group8, FAO, the World Bank and the World Economic Forum facilitating policy work and also raising some funds"* (CAADP Policy Representative Official 2013).

The African Union has a facilitation role on these platforms to be able to get enough funding for the countries investment plan. According to the CAADP official:

> *"The AU does mainly rely on getting the investment plan's fund on the mobilisation of domestic resources of the continent. There are some extra funds also that come from other stakeholders, such as the international development agencies and the private sectors"* (CAADP Policy Representative Official 2013).

CAADP framework under the four pillars appears to be very general in its nature and its creation was through very high level meetings. The CAADP expert stressed that:

> *"The CAADP framework is general and not specific to each country. This opens the door of opportunity to each country to identify its own specific problems within the four pillars of land and water management, market access and infrastructure, food supply and nutrition and agricultural research*" (CAADP Policy Representative Official 2013).

From the above discussion, it is clear that the AU policy making and implementation processes and the creation of the CAADP framework are very high level and general. Each member nations have therefore the opportunity to design their own policy, specific to their own individual needs and priorities within the CAADP framework. I, therefore have taken Ethiopia as a case place to assess the adoption of the AU's food security policy and how it incorporates it with its own national level food security policy to increase sustainable food security and increase well-being for the people.

4.3 The Ethiopian Government Food Security Policy and Implementation process

Recently, Ethiopia's economy has been growing very fast, one of the fastest in Africa in 2013. Despite its fast economic growing trend and richness, food insecurity is increasingly becoming a common issue and challenge for the Ethiopian policy makers (FAO 2015). In 2015, it was

estimated that around 10 million people were chronically food insecure, 75 per cent of these people were the rural poor and 25 per cent the urban poor. FAO (2016) stated that transitory food insecurity is more common in drought prone areas even among farmers with more resources and among pastoralists in Ethiopia.

According to the World Bank report (2012), food insecurity problems of the country exist within the urban and rural population, urban food insecurity is caused, according to Amare (2010) by food price rises, unemployment and poverty. In the rural areas, food insecurity mainly derives from limited off-farm activities and diversification, limitations of rural land holdings; where more than one-third of the households cultivate less than 0.5 ha of land under rain-fed agriculture. The Ethiopian Government has its own clear food security policies in place. It has also adopted and incorporated the AU's CAADP framework with its own policies to solve the food insecurity issue of the country.

Before stating the current policies in place, the next section, 4.3.1 discusses the Ethiopian political structure in order to give an outlook of a brief history of Ethiopia. It is also to give un-understanding about the links between the three different ruling systems the country had over the past fifty years; and how they all relate with the agriculture sector. These ruling systems are; the monarchy system from the time Ethiopia emerged into history up to the 1970s; the communist system, from the 1970s to 1990s and from the 1990s up now is the democratic system. These three governing systems have tight control over the agriculture system. This is discussed in detail in chapter five.

4.3.1 The Ethiopian Leadership Political Structure

Growing up in Ethiopia, I have had the opportunity to experience what it is like to live in a village, small town and a city. I have also lived in the United Kingdom for over ten years and travelled around Europe and South America; and from this travel experience, I have got un-understanding about how Ethiopia is perceived from the outside world. For instance, when I talk to people about Ethiopia, and if they know about it; they mention famine, drought and the great runners such as Haile Gebresilasie. However, there is a different side to Ethiopia; the country is very rich in its natural resources, diversity of people and culture and according to McBriarty (2011), Ethiopia was famous for its tall and long lived proud people and a land of mystery.

Ethiopia is one of the African member states and is located in the Eastern part of Africa. Ever since its emergence into the records of history, the Ethiopian society have been a rich group of different ethnic and linguistic communities (Tamrat 1988). According to the Worldmeters (2016), Ethiopia is home to around 100 million people and different ethnic and religious groups have lived side by side for millennia, speaking around 90 languages (Yared 2012). In Ethiopia, currently, around 80 per cent of the population lives in rural areas and are small scale farmers. Most of these people depend on agriculture production and livestock rearing for their livelihoods (World Bank 2012).

Since the 1980s, Ethiopia has been known as a famine prone nation, but also often ironically referred to as the "*water tower*" of Eastern Africa. It is because it has the greatest water reserves in Africa and fourteen major rivers pour off the high tableland of the country (Negash 2010). Below is the map where Ethiopia is located in the world.

Figure 4.1 Ethiopia's location in the world map, Source: Google Map (2017).

According to Negash (2010), Ethiopia is a land of extremes. It is one of the largest countries in Africa and covers an area of around 1.13 million km^2, most of its land is mountainous and it is a key place for Eastern Africa's soil and water flow (WHO 2008). For instance, the Blue Nile River flows from the highland of Ethiopia to Sudan and Egypt feeding these nations with its water and fertile soil and it ends in the Mediterranean Sea.

The country is one of the very few places that managed to sustain an unbroken chain of historical civilisation free of foreign exploitation. Unlike Egypt, for instance, and others that

were later swamped by foreign and destructive forces, Ethiopia maintained its brand of African civilisation intact (Tibebu 1996). In the early days, there were many links between ancient Ethiopia, (Nubia) Sudan and Egypt starting with Piye, a ruler of the Twenty Fifth Dynasty in Egypt from about 750 to 719 BCE. There were occasions when these countries were recorded as having the same ruler, whose capital was at Napata, North of modern-day Sudan (the Cushitic Empire then) (Spalinger 1973).

There are evidences now in Ethiopia that a developed civilisation in the Northern highlands called Da'amat existed around 700-300 BCE (AODL 2014). During this time Da'amat used to trade with Nubia and Egypt, before the 2nd century BCE. The Axumite Kingdom, which gradually took over from Da'amat, from which modern Ethiopia traces its origins from (Negash 2003). The Axumite Kingdom is known after the capital city of Axum in Northern Ethiopia during the 1st-10th centuries CE. At the beginning of its existence, Axum flourished and was the most powerful state in the region. Axum was ruled by the "King of Kings" (*Negusa Nagast)* who ruled over the Imperial system of government (Negash 2003).

Axum became the only powerful kingdom in the Region and its dominant presence has been felt greatly in the surrounding areas. The people that integrated into the kingdom have kept their own identities for a while, but were slowly carried into the organisational, socio-economic and cultural environment of the Axumite Kingdom (Tamrat 1988). Negash (2003) added that the empire was at the height of its power and documented as one of the powerful kingdoms of the ancient world. The Axumites have coined their own currency of gold, copper and silver. The empire also had a strong diplomatic relationship with the Roman Empire and it had the potential to take on military and colonisation expeditions across the Red Sea.

The Axumites had their own script *Ge'ez, Kutir* their number system and *AwdeAwarih* their calendar; which are still in use in present day. In 340AD, the Axumite king Abraha (Ezana) adopted Orthodox Christianity and it has become the main religion of the residents of the Region and gave the symbolism and material of the royal ideology (Berhe 2004). According to Tamrat (1988):

"*For at least five hundred years before the days of Ezana, this part of Ethiopia had undergone significant political and economic changes, with the city of Axum and the port of Adulis became the two major focal points in the interior and on the Red Sea coast*" (Tamrat 1988, p.5).

This powerful Kingdom however started to get challenged and began its decline around the 10th century. The Ethiopian history from the decline of Axum until the early sixteenth century is mainly divided into three eras (Negash 2003). The first era began with the Arab occupation of the Axumite port of Adulis and ended with the creation of "*the Zagwe Dynasty*" in the end of the 10th century. In the second era, the Axumite civilisation started to loss its dynamism of its centralised state and slowly gave rise to the appearance of local kings and princes, most of the time involved in continuous wars for domination and power (Horvath 1969). The *Zagwe* kings had their capital at *Ad„ffa*, about 200 km Southeast of Axum and the Zagwes were notable from the Axumites in a way that they did not fit in to the same ethnic and linguistic group as the Axumites.

Finally, in the twelfth century, the Axumite dynasty was overthrown by the Zagwe usurpers (Horvath 1969). The third period started with what is generally known as the period of the "*Restored Solomonic Dynasty*" in 1270-1974. The history of Ethiopian after the fall of Axum and until the rise of the Solomonic Dynasty is known by historians as the "*Dark Ages*". However, "*The Rock-Hewn Churches"* at Lalibela were in the central town of the Zagwe Kings and shows the highlights of the success of the Zagwes' dynasty (Negash 2003).

The period of chaos from 1760 to 1855, that has destroyed the Ethiopian state was known as the "*Zemene Mesafint", "*Era of Princes". War was a usual occurrence during this time and gun was a highly valued material, mainly in the Northern part of Ethiopia. This was challenging the tradition that had continued for centuries of resolving conflict by peaceful means;, through elderly and religious leaders groups of notables and influential elders who mediate parties in conflict (Berhe 2004).

Amongst the rebellion individuals, "*Kassa Hailu"*, a fighter from Gondar, had become emperor, taking the name of "*Emperor Tewodros"* (1855–1868) after he won the battle against all the local kings and princes. Emperor Tewodros managed to restore the unity of Ethiopia based on the Axumite religious ideology. In 1871–89, "*Emperor Yohannes"*, "*Kahsay Mircha*", a rebellion fighter from Tigray, succeeded Tewodros and he was crowned as the king in Axum (Berhe 2004). Berhe added that:

"*Despite their success in re-establishing the Ethiopian state, the reigns of these two emperors were never stable or peaceful, due to both internal conflict and external invasions. Locally, lords who aspired to power were likely to rebel whenever conditions were favourable. There were countless local wars both between regional chiefs but also more intensely, to resist*

the emergence of Kassa Hailu and later Kahsay Mircha as Emperors Tewodros and Yohannes" (Berhe 2004, p.571).

Forces that were external such as, "*Britain in 1868, Egypt in 1875–76, Sudanese Mahdists in 1889, and Italy in 1887–96 and 1935*" were accountable for major attacks that made the defence of Ethiopia the main concern of the leaders, and creating a steady life became increasingly difficult for the people of Ethiopia (Berhe 2004). Moreover, Conquering Lion of Judah, Elect of God, and King of Kings of Ethiopia was Negus Negust (emperor) of Ethiopia from 1930 to 1974.

This was to quickly change. In 1974 "*Emperor Haile Selassie*", the last of the Solomonic Dynasty, was overthrown ending the monarchy system in a coup by the" *Derg*", that has created a "*Marxist Military Government*" led by "*Mengistu Haile-Mariam*". This regime that was supported by the Soviet Union carried out fundamental land reforms finishing the "*landlordism*" connected with the Imperial system (Keeley and Scoones 2000).

In the Mengistu regime, the agriculture system was managed by the state with prices, input supply and marketing tight control. The regime also planned to change rural life through large-scale plans for "*resettlement and villagisation"* (Amare 2010 and Bishop and Hilhorst 2010). Derg was eventually overthrown in 1991 by the Tigray People's Liberation Front (TPLF) with the assistance of the Eritrean People's Liberation Front (EPLF). TPLF has been in power ever since as the dominant party in the governing system of Ethiopia. Since 1994, Ethiopia has been a federal democratic republic that politically recognises ethnic identities (GoE 2013). One of the research officers of Addis Ababa University from our interview stated that:

> *"Ethiopia has gone through three different political transitions in the last 50 years, that of monarchy, communist and now democratic and this makes the country's challenges even more complex. For Ethiopia to move in to a sustainable food production system and increase food security and well-being, it will take a lot of effort, work and real transformation of the people and the state. One key fact is that a state that is stable, loyal and is working towards for the people's well-being is vital, and the peoples trust in the government is vital. Once there is trust, there will also be acceptance. However, if we have unstable leadership, a political transformation that is taking place every few decades, people will lose trust and become unstable and chaos follows"* (Addis Ababa Research Officer 2013c).

During the monarchy and the Derg regime systems, land was tightly controlled by the ruling class and governing bodies. For instance, the rich landlords owned most of the lands of Ethiopia and they kept it tight so that they remained in charge during the monarchy time. Even though the Derg leader Mengistu Hailemariam took the land off the landlords and claimed that land belongs to the public; however, it was controlled by the state fully (Amare 2010 and Bishop and Hilhorst 2010). Under the TPLF leadership, land is still owned by the state, which has been continued from the previous leadership. Moreover, resettlement, villagisation, and agricultural transformation are the key features of the current leadership political culture. Therefore, even though the country has had different types of governing systems, the common thing they have related to the agriculture sector is that they all have full control over land and how food is produced; and not the people.

In section 4.3.2, the Ethiopian food security policies in place and its implementation processes is discussed. The Agricultural Transformation Programme (ATP) under the Growth Transformation Plan (GTP), using the Policy Investment Framework (PIF) now in Ethiopia is the key policy in place under this leadership to tackle food insecurity, eradicating poverty and bringing economic growth in the county.

4.3.2 Policy Process

- **The Policies in Place**

Ethiopia now has an active food security policy in place. The Government of Ethiopia (GoE) has a number of clear policy designs and implementation processes of development strategies in order to eradicate poverty and increase food security in the country. Over the last few decades, the GoE has designed and implemented development strategies such as, the Sustainable Development and Poverty Reduction Program (2000/01-2004/05) and the Plan for Accelerated and Sustained Development to End Poverty (2005/06-2009/10) are some to mention. Table 4.2 presents the Ethiopian policies related to agriculture and food security and their time frame.

Table 4.2 The Ethiopian Government major policies related to food production and food security and the time frame.

Name of the Policy	Time Frame
The Sustainable Development and Poverty Reduction Programme	2001-2005
The Agricultural Development Led Industrialisation (ADLI)	2005-2010
The Plan for Accelerated and Sustainable Development to End Poverty (PASDEP)	2005-2010
The Policy Investment Framework (PIF)	2010-2020
The Rural Development Policy and Strategies (RDPS)	2010-2020
The Agriculture Transformation Agency (ATA)	2010-2025
The Growth Transformation Plan (GTP)	2011-2015
The Agriculture Growth Programme (AGP)	2011-2015
The Five Year Growth and Transformation Plan (FYGTP)	2011-2015
The Agriculture Transformation Programme (ATP)	2011-2015

I have put the table above just to show the policies related to food security and development in the country and their time frame. Their time frame is when they are ending and whether the policies have bene effective or not in delivering what they set out to do is assessed through the monitoring and evaluation (M&E) system by the Government. In this chapter, I have not critically assessed the policies; the critical analysis of these policies is in chapter five. I wanted to outline the policies as described by the Government policy representative participants from my interview and from the secondary data I have gathered from the Ethiopian Government official websites and paper based policy descriptions.

Currently, the Ethiopian Government is undertaking a fast agricultural transformation programme to be able to increase food productivity and increase its people's food security status. The first Growth and Transformation Plan (GTP) was formulated for the years 2010/11 to 2014/15, with a set of clear agricultural objectives and targets to tackle food insecurity in

Ethiopia. According to the GoE (2016), the GTP recognizes agriculture as the central element of the Ethiopian economy and places its aim and objectives to accelerate agricultural production, building-up agricultural research and creating stronger market connections. The Government of Ethiopia (2016) stated that:

"The GTP's vision is to base the Ethiopian economy on a modern and productive agricultural sector that utilizes enhanced technology, thereby feeding into an industrial sector that plays a leading role in the economy. By doing so, the GoE aims to sustain economic development, secure social justice, and attain middle income country status" (GoE 2016).

Ethiopia as a member of the African Union has its food security policy in-line with the CAADP framework and an implementation process that is in place. The Government has initiated policies under its political regime and implementation has been in place at a national, regional and *Kebele* community levels in the last 5-10 years now. The Ethiopian policy representatives have stated that:

> *"Ethiopia has struggled for many years to respond to the challenges of food insecurity and rural and urban poverty. However, in the past decade, a significant amount of work has been done in implementing infrastructure to improve people's lives since the collapse of the previous government of Mengistu Hailemariam"* (Federal Level Policy officer 2013).
>
> *"Even though there was some good work done in the past decade related to increasing food security in Ethiopia, there is still a great deal of work to be achieved in all sectors including the agriculture sector"* (Regional Level Policy Officer 2014).

According to the GoE (2013), the Ethiopian Government is making significant investments to address the food insecurity issues in the country through the Growth and Transformation Plan (GTP). The Ethiopian Agriculture Intervention Programs, the Agricultural Growth Program (AGP), Agricultural Transformation Programme (ATP) and AU, CAADP Framework financed through the Policy Investment Framework (PIF) are the main agencies involved in the GTP. This is being addressed through programmes such as the AGP and is aligned with the fundamentals of the:

1. Comprehensive Africa Agriculture Development Programme (CAADP)
2. Agriculture Development Led Industrialization (ADLI)
3. Rural Development Policy and Strategies (RDPS) and

4. Plan for Accelerated and Sustained Development to End Poverty (PASDEP) programs.

Agricultural Development Led Industrialisation (ADLI) is one of the key policies in the country. ADLI, is directed by the Rural Development Policy and Strategy (RDPS) and implemented through the Plan for Accelerated and Sustainable Development to End Poverty (PASDEP) which was succeeded by the Five Year Growth and Transformation Plan (FYGTP) 2011-2015. The PIF, through the CAADP framework is the implementation framework for the Agricultural sector components of FYGTP (GoE 2013).

Ethiopia has recently institutionalised the CAADP framework within the existing sector strategies and in the framework of Agriculture Development Led Industrialization (ADLI). CAADP sets the principle of allocation of 10 per cent of the national budget to the agricultural sector targeting at achieving a 6 per cent average annual growth rate for the sector at the national level as a main strategy to reduce food insecurity greatly by 2015 (GoE 2016).

According to GoE (2015), over the last 15 years, the Ethiopian agricultural sector has been a priority in the development agenda for the Government. The ATP under the GTP was a plan for 2011-2015, that focused on increasing sustainable agriculture growth and food security in the country. As a major component of the Government's five-year GTP, ATP complemented existing programmes and promotes agricultural growth in targeted, potentially rich, but underdeveloped "*Woredas*" of the country. These areas, "*Woredas*" were identified based on their resource capacity to produce more food. I have understood that the Ethiopian food security policy in place was not just to increase households' food security status; but it was also driven economically. It encourages the farmers to produce more food and cash crops such as coffee so that the Government could sell it to other countries and earn foreign earnings.

The Ethiopian Government (2015) stated that the programme's key strategic priorities are: agricultural production and commercialisation through institutional strengthening, scaling up of best practices, market and agribusiness development, rural infrastructure development and management through small-scale agricultural water management and market infrastructure development. The ATP mechanisms also include Program Management, Monitoring and Evaluation at a national, regional and community level focused on overall management to ensure integrated and coordinated implementation. The GoE (2015) mentioned that:

"The Agricultural Transformation Agency operates within the Government of Ethiopia that reports to the Transformation Council chaired by the Prime Minister and vice-chaired by

the Minister of Agriculture. The ATA seeks to accelerate the transformation of the agricultural sector so that it considerably contributes to the goal of Ethiopia achieving middle-income status by 2025" (GoE 2015).

The Agriculture Transformation Agency, according to the GoE makes sure that allowing environment is created so that farmers can gain from adopting the agricultural technological inputs. This in turn, helps the farmers increase their yields and income and therefore contribute to the development of their families, their communities and their country. The Ethiopian Government believes that the agricultural sector is significantly important to overall economic performance, food security and poverty alleviation and it has performed well over the years. For instance, around 10 million farmers in the country have now access to agricultural inputs such as chemical fertiliser and improved seeds to help them increase productivity (GoE 2013). However, there is a still a substantial amount of work to be done to sustainably improve food productivity, market linkages to improve food security and well-being in the country through the agricultural transformation policy plan (GoE 2013). According to the GTP policy representative:

> *"Ethiopia in the last nineteen years has carried out a far reaching programme of economic reforms and this change has brought strong economic growth over the last seven years to the country. The economy has recorded rapid growth rates averaging 11.0 per cent per annum over the past few years, placing Ethiopia among the top performing economies in sub-Saharan Africa. This economic transformation is slowly translating into improved living conditions for the people of Ethiopia and these efforts are something to be encouraged"* (GTP Policy Officer 2013).

Agriculture in Ethiopia is a major source of income as it generates 45 per cent of GDP and 90 per cent of exports for the country. About 11.7 million smallholder households account for approximately 95 per cent of agricultural GDP and 85 per cent of employment. The Ethiopian Government spends around 17 per cent of its money on agriculture because around 80 per cent of its population are involved in agricultural based lifestyle (GoE 2013 and FAO 2012). The ATA representative officer stated that:

> *"Ethiopia has tremendous potential for agricultural development as it has a total area of about 1.13 million km^2 and about 51.3 million hectares of arable land. However, only just over 20 per cent of the total arable area, about 11.7 million hectares of land*

are currently being cultivated, so we need to do more work on the agriculture sector" (ATP Policy Officer 2013).

Ethiopia's farming system mainly operated by animal power and cereals, dictate Ethiopian agriculture, accounting for about 70 per cent of agricultural GDP. Moreover, livestock production accounts for about 32 per cent of agricultural GDP. In the past decade, cereal production has more than doubled to nearly 15 million tonnes; this is because of expanded and increased yields in the country (GoE 2013). The Ethiopian Ministry of Agriculture ATP and GTP officers emphasised that:

> *"Food security remains a critical issue for many households and for the country as a whole even though we have done a lot of work in recent years. We have a long way to go in achieving food security for the people of Ethiopia"* (ATP Policy Officer 2013).

> *"The Five Years Growth Transformation Plan (FYGTP) pursues to continue and expand the current aggressive agricultural sector GDP growth to achieve an annual average of 10 per cent. This will be contributing to an economy-wide GDP growth rate of 11 per cent per year, driving Ethiopia into a middle income status by 2025"* (GTP Policy Officer 2013).

The Agricultural Sector's ten-year Policy Investment Framework (PIF) (2010-2020) provides a strategic framework for the prioritisation and planning of investments, intended to drive agricultural growth and development in Ethiopia. According to the Ethiopian Government, the PIF is built on four key strategic objectives of thematic areas, these are shown in table 4.3.

Figure 4.3 The Ethiopia's GTP thematic areas and strategic objectives, Source: MoFED (2013).

Thematic Area	Strategic Objectives (SOs)
• Productivity and Production	• SO1: To achieve a sustainable increase in agricultural productivity and production.
• Rural Commercialisation	• SO2: To accelerate agricultural commercialisation and agro-industrial development.
• Natural Resource Management	• SO3: To reduce degradation and improve productivity of natural resources.
• Disaster Risk Management and Food Security	• SO4: To achieve universal food security and protect vulnerable households from natural disasters.

- **The Policy Investment Framework (PIF)**

The Policy Investment Framework is led by the Ministry of Agriculture and Rural Development (MoARD). GoE added that PIF:

> "*Reflects the priorities of the Government and a wide range of agriculture and rural development sector stakeholders. The initiative is linked to the international community through the Ministry of Finance and Economic Development (MoFED). It is set within the context of the on-going institutional development of MoARD and other relevant Government agencies based on civil service reform*" (GoE 2013).

The design of the PIF included a wide range of stakeholder consultation including public and non-public sector actors such as farmers, private sectors and civil societies. PIF gives a tactical framework for the prioritisation and planning of investments that drives Ethiopia's agricultural growth and development. The GDP representative officer mentioned that:

> "*PIF is anchored to FYGTP and aligned with, the national vision of becoming a middle income country by 2025*" (GDP Representative Officer 2013).

According to the GoE (2013), under the PIF, priority investments have been identified through each of the "Strategic Objectives", to be jointly financed by the Ethiopian Government and its development partners. This include a set of incorporated and flagship programs to carry out the FYGTP, these are: the Agricultural Growth Programme (AGP), the Sustainable Land Management Programme (SLMP), the Food Security Programme, which includes the Productive Safety Net Programme (PSNP) and the Household Asset Building (HAB) Programme and Resettlement Complimentary Community Investment activities.

The policies in place are being implemented between different stakeholders following the Federal, Regional, *Zone*, *Woreda* and *Kebele* community levels. The Ministry of Agriculture (MoA) at *Federal*, Bureau of Agriculture (BoA) at Regional, Department of Agriculture (DoA) at *Zone* and Office of Agriculture (OoA) at *Woreda* level are in charge with the overall responsibility and accountability for the implementation of the programme (GoE 2014).

- **The ATP and the CAADP's Framework Performance in Ethiopia**

Ethiopia is currently implementing its Agriculture Transformation Policy in cooperation with the African Union CAADP four frameworks, using PIF as its main investment tool. The AU, CAADP representative officer stated that:

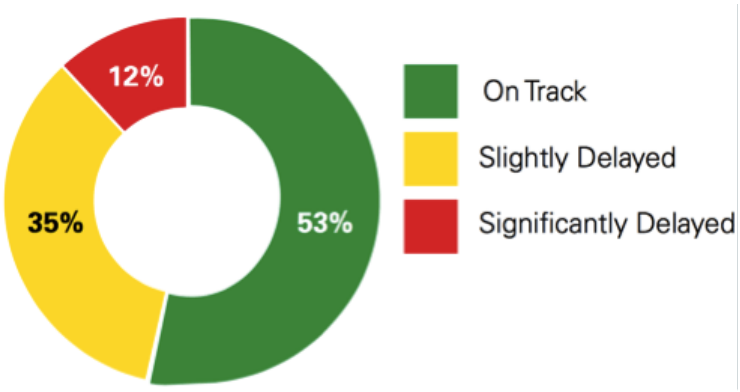
> *"As a member of the African Union, Ethiopia was one of the first countries to complete the CAADP Country Process. Ethiopia signed the Compact Programmes in 2009, it reviewed the Investment Plan in 2010, held the business meeting in 2012 and it received 52 million dollars from the AU; and it is now implementing its investment plan. Ethiopia's PIF is designed to operationalise the CAADP Compact signed by the Government and its development partners" (*CAADP Representative Officer 2013).

The African Union have undertaken an assessment of the CAADP framework pillars implementation process and effectiveness process in Ethiopia. The AU (2013) has found that the PIF was in-line with the FYGTP, which in itself was well aligned with the CAADP framework in Ethiopia. The targets established in the PIF exceeded CAADP growth and public investment targets. AU also stated that there were well developed targets for each of the planned objective areas in each of the main programmes (AU 2013).

The PIF gives a comprehensive framework within its four strategic objectives and were consistent with the CAADP Pillars. Specifically, the flagship programmes presented excellent coverage for Pillars 1, 3 and 4. CAADP Pillar 2 is covered through PIF Strategic objectives 1 and 2 and its related programme, AGP, that focuses on productivity and commercialisation of agriculture. However, according to the AU assessment group, the rural commercialisation programme showed slow progress and it needed more attention by the Technical Committee team and the Ethiopian Government so that it meets its desired goal (GoE 2013).

The Ethiopian Government performance of the Agriculture Transformation Plan that is in line with CAADP, since the time Ethiopia adopted the framework is regularly assessed throughout the GTP 2010-2015 years. It then is reported to the Prime Minister and the Transformation Council based on a rigorous performance management framework. Figure 4.2 shows the 2010-2015 performance results.

Figure 4.3 The GTP, 2010-2015 performance year, Source: GoE (2016).



According to the GoE, efforts has been made to measure and analyses the specific contributions that each plan has had on the agriculture sector during 2010-2015 GTP years. For instance, in 2015 the results of the performance show that 53 per cent of deliverables (45 of 84) were estimated to be on track while 35 per cent (29 deliverables) were considered slightly delayed and 12 per cent (10 deliverables) were considered significantly delayed (GoE 2016).

The flagship programmes cover approximately 400 *Woredas*, with minimal overlap between them and each of the flagship programmes has different focuses. However, the Ethiopian Government acknowledged that it is faced with the challenge in trying to implement different interventions by different flagship programmes in different *Woredas* to deliver the FYGTP targets. The challenge includes for example reaching all farmers in the targeted areas. The flagship programmes are: to increase high value crop production, the conservation of natural resources, increasing irrigation systems and the development of livestock. The intervention programmes included such as soil and water management systems (GoE 2016).

There were a number of issues raised by the GTP members that included the degree to which the flagship programmes were playing a main role in different *Woredas*. For this, an incorporated set of performances and Monitoring and Evaluation (M&E) systems have been created in order to meet and track the planned goals and targets of the FYGTP. The issue was also that the flagship programmes, while separately well created and focused were unlikely to be achieved with the extent and level of change for the whole nation that was stated for in the FYGTP.

There was continuity with Long Term and Poverty Reduction Targets in Ethiopia. The consistency analysis completed as part of the technical review examined if the PIF was achieved the FYGTP and CAADP targets with respect to economic growth and poverty reduction. The objectives of the PIFs' are to maintain an annual average total GDP rate of 10 per cent and increase per capita earnings to at least USD 1,000 by 2020. The cost of the ten year investment plan totals Ethiopian Birr (ETB) 297.6 billion (USD 18.04 billion) (GoE 2013).

The ATP representative (2013) emphasised that in terms of adoption of best practices and inclusion of core programme elements, the PIF and its related flagship programmes have done a comprehensive job of unfolding the programmes planned for its implementation, including choices of focus of geographically location and technique. The Ethiopian Government has also researched the possibly technical, economic, social and environmental impacts of projected performance to validate the priorities and programmes.

The Ethiopian Government stated that it financed 60 per cent of the overall costs of the PIF; however, there is a funding gap. This finance gap that has been recognised increases important concerns, such as, this gap is not filled to establish priorities identified and there is no clarity on how this issue would be dealt with. Related to this issue, it was clearly reported that the GoE has proposed to create a performance based budgeting process, suggesting that results have been evidently linked to funding requirements (GoE 2013).

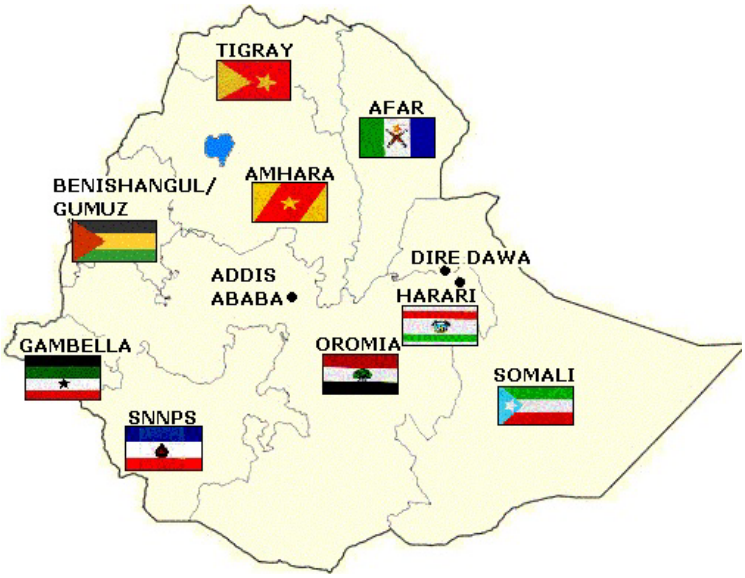
Moreover, the Government has stated that the findings show the FYGTP and the PIF is aggregating its agendas on many levels. These are such as, financial, policy institutional, capability and technical service delivery systems (GoE 2013). The ATP policy representative have stated that, even though there were challenges such as related to funding; there were also some good work that has been done. This is including the policy being able to reach more than 10 million farmers in the country. The following section discusses the Ethiopian Government policies implementation process.

4.3.3 Policy Implementation Process

Ethiopia has a decentralised federal system. The policies in place are being implemented through this system. For instance, at the federal level, the MoA has general duty for agricultural development policies, methods and plans. Agricultural management, research and extension services, natural resource management, input supply, Disaster Risk Management and Food

Security (DRMFS) and support for the private investment are all under the federal level. The Ethiopian Government leadership system comprises Nine Regional States and Two Administrative Cities. The Regional bureaus are further decentralised to *Zone*, *Woreda* (district) and *Kebele* (village) levels (GoE 2013). The following map, 4.3 shows the Nine Regional States of Ethiopia.

Figure 4.4 The Nine Ethiopian Regional States, Source: Diretube (2017).



The Agricultural Growth Program is designed as one of the development programs of Ethiopia, focusing on selected and relatively potential areas for implementing policy at a ground level. The program is put into operation in 84 *Woredas* structured into 20 clusters, from 4 National Regional States. In these selected *Woredas*, it is proposed to address 1.9 million households from 2116 *Kebele*s in its lifetime and in 2013, the number of intervention *Kebeles* increased to 80 per cent of total 1693 *Kebeles* from the target *Woredas*.

One of the objectives of this study was to assess the food security policy implementation process that is in place in Ethiopia. I therefore have followed the Ethiopian administrative system of policy implementation process until it reaches the people on the ground. Answers to the following questions have been discussed in chapter six.

1. How the ATP in place is being implemented in to *Woreda*, *Kebele* level?
2. What are the evidences of the ATP achievements in the *Woreda*, *Kebele* level?

3. What are the ATP policy flexibility at the *Woreda*, *Kebele* level (relevance to the area and people)?
4. What are the Monitoring & Evaluation systems of the ATP policy in place?
5. What are the challenges in implementing the policies at the ground level?
6. How does top-down policy incorporate with bottom-up policy?

Under the GTP, the Agriculture Transformation Plan according to the GTP representative interviewee (2014) is being stated as:

> *"Firstly, there is the Federal plan, strategic plan and this plan is not just the Ministry of Agriculture, but it is at the Prime Minster level. For the Agriculture Ministry for instance, a specific plan is being identified and set out within an organised agriculture committee, and then this plan is sent to Regional Governments as a starting point because it is a general plan"* (GTP Policy Officer 2013).

The *Bahrdar, Amhara* Regional Government GTP representative (2014) stated that the Regions take the Federal general plan and assess their own situation, priorities and potentials, then make their own Regional ATP plan. The Regions also use the same principle and send their ATP to their *Zone*s and the *Zone*s also carry out a similar strategy according to their implementation potentials (GTP *Zone* Representative 2014). However, according to the *Dejen Woreda* ATP representative (2014), the policy gets more detailed when it reaches the *Woreda* and *Kebele* levels. According to the *Amhara* Region ATP representative:

> "*We implement our policies using the top-down approach, however a bottom-up policy approach is also a part of our policy making and implementation process*" (ATP Policy Officer 2014).

Under the ATP, there are four flagship programme pillars. These are: first one is to increase high value crop production in order to help increase the farmers' income, the second is related to the conservation of natural resources, the third is to increase irrigation systems and the fourth is related to livestock development (Federal Office ATP Representative 2014). The high value crops are such as corn and wheat and when farmers produce these crops, they are able to earn income as these crops are highly valued by the Government for export purpose and this increases farmers earnings.

There are also the monitoring and evaluation systems working at all levels, from the Federal level to a Region, a *Zone*, and *Woreda* to *Kebele* levels. The Regional ATP representative

officer (2014) added that the Regional agency has the responsibility to collect the policy information being implemented from each *Zone*, and *Zone*s have the responsibility to gather the information from each *Woreda*, and the *Woreda*s form each *Kebele*, and finally the *Kebeles* from each household.

The GTP is divided into a timeframe of short, medium and long-term, this is the strategic plan incorporated so far by the Government. The Regional ATP representative (2014) has mentioned that:

> *"The five year plan will be finished in 2015, and there is no complete report of the monitoring and evaluation of the ATP, and its effectiveness at all levels. However, there is a lot of evidence showing the policy in place is showing effectiveness. For example farmers are now adopting these technologies and they are seeing results in terms of productivity"* (ATP Policy Officer 2014).

According to the Ethiopian Government Federal level Representative (2014), the main aim of the ATP is to feed the Ethiopian population (**at least three times a day)**; by doubling food production, using chemical fertiliser, pesticides and improved seed technologies. The *Zone* and Federal level ATP representatives interviewed stated that:

> *"This policy is showing its effectiveness from the monitoring and evaluation systems we have in place"* (*Zone* ATP Policy Officer 2014).
>
> *"At the end of the day it is the farmers who are the main beneficiaries of the technologies such as improved seeds and chemical fertiliser and if they are becoming more productive, that means the policy is working and the Government will do everything it can to constantly try to improve its strategy"* (Federal ATP Policy Officer 2013).

The *Dejen Woreda* ATP representative (2014) expressed that once the policy reaches the *Kebeles*, there is the development team, extension workers at that level that works very closely with the farmers. The team for instance train farmers in how to use the technologies; such as pest/herbicide, holds meetings and help transfer the policy into action with the selected leaders in the area. How this works is that, for instance, 30 households are organised in one group and have 5 leaders. Also there are five households organised together with one leader each. In this way, the monitoring and evaluating is done efficiently, and also training is given to the farmers.

These selected leaders usually observe, assess the work that is been done by the other members; and they meet every three days to discuss if there are any issues in the implementation process at the ground level. This leader then reports back to the *Kebele*. The 30 households meet every week to discuss issues and successes of the policy implementation in place. This is how the monitoring and evaluation works at a close up level.

The *Kebeles* report the work they are doing, and the issues raised and successes to the *Woreda* level, then the *Woreda* pass it on to the *Zone* office. The *Zone* then pass it to the Regional office and finally reaching the Federal level. The Ethiopian Federal office then finally reports the work that it is doing at the ground level to the African Union. This shows that policy implementation is top-down; but on the other hand, bottom-up policy approach is used to report policy success or failure. The Dejen *Woreda* ATP representative added that:

> *"We are successful in encouraging the farmers to adopt the policies, to mainly use the agricultural inputs in order to maximise their food productivity. However, we have also some challenges in convincing some farmers to be part of the programmes in place"* (*Woreda* ATP Policy Officer 2014).

According to the *Gelgele Kebele* Officer (2014), the ATP mainly at the *Kebele* level focuses on the households' adopting the agricultural input technologies such as chemical fertiliser, chemical pesticides and improved seeds in order to increase food productivity. The *Yetnora Kebele* officer also added that, at the *kebele* level, the officers, extension service workers are mainly focussed on supporting the farmers use the technologies. The *Dejen Woreda* officer expressed that:

> *"Some farmers are reluctant in adopting the ATP which is available to them. We try our best in encouraging these farmers to be part of the programmes. Because this is not just a household level plan, it is a country level plan to increase food productivity and every farmer needs to adopt the policies in place"* (*Woreda* ATP Policy Officer 2014).

According to the federal level policy representative (2014), the Ethiopian agriculture sector has so much potential for transformation and economic performance of the country. There are areas in the country that are potentially rich; and with some effort from the Government and the farmers, it can be transformed. The representative added that research organisations, especially the agriculture research institutes in Ethiopia have great roles in contributing to this

transformation of the agriculture system. The next section discusses research organisation in Ethiopia.

4.4 Research and Development in Ethiopia

Research organisations should be the most important sectors in a country as they contribute to knowledge, help in the formation of policy and implementation process. One of the objectives of this thesis was to analyse the role of Ethiopia's Research Organisations, particularly the agriculture research organisation in the formation of food security policy and their involvement in the policy implementation process. I have also looked at how these organisations are managed and their contribution to knowledge related to the people on the ground.

Given the critical challenges such as food insecurity, growing food in a sustainable manner and the volatility of prices in global markets, African policymakers are increasingly recognising the value of greater investment in research and development (R&D). Even though African nations, including Ethiopia are showing a promising effort in their research and development sector, the sector faces a number of challenges. These challenges include the lack of funding for research, brain drain and the gaps in legislation to protect intellectual property rights (Mekoa 2006).

For instance, in Ethiopia, the lack of research that is relevant to the people's way of life and the local environment, the low wages earned by scientists causing reluctance to work for the State, lack of scientific communication between African scientists and the lack of intellectual and political freedom are the challenging issues raised by some of the Ethiopian researchers interviewed for this study in Addis Ababa University in 2013.

The Ethiopian Research Organisation is very young when compared to other African countries research organisations. For instance, the Ethiopian Agricultural Research Institute started with the establishment of the Ambo and Jimma Colleges of Agriculture in 1947 and the Imperial College of Agriculture and Mechanical arts, today's Alemaya University in 1953 (GoE 2013). Organised agricultural research activities and actual associations between agricultural research and development started with the setting up of the Institute of Agricultural Research in 1966 (Tsedeke *et al*. 2004).

In the country, other agricultural research centres have been established. For instance, in 1993, some of the Institute of Agricultural Research (IAR) centres were decentralised to create

independent research centres run by the individual Regional Governments. These became the Regional Agricultural Research Centres (RARCs) under the respective regional bureaus of agriculture. In June 1997, the Ethiopian Agricultural Research Organization (EARO), today's Ethiopian Institute of Agricultural Research (EIAR) was established and merged all the existing agricultural research institutions (Bechere 2007).

The agricultural sector in Ethiopia represents 45 per cent of the GDP and about 85 per cent of the population gains their livelihood directly or indirectly from agricultural production including livestock. The importance of agricultural research and its impact on development in Ethiopia cannot be over emphasised (GoE 2013). Today, research organisations including the Agriculture Research Institutes in Ethiopia are becoming increasingly aware that food insecurity and the natural resources such as the soil degradation in the country is a huge problem that needs to be addressed (Negash 2010).

4.4.1 The Ethiopian Agricultural Research Institute

One of the main aims of the Ethiopian agriculture research institute according to the institute's director (2013), is to help implement the GTP policy at the ground level. This is mainly researching and delivering the agricultural inputs of improved seeds, chemical fertiliser and pest/herbicide to the farmers in order to accelerate food production and increase productivity whilst managing the natural resources. The Ethiopian agriculture research institute is working under five main areas and these are: crops, livestock, soil and water, forestry and farm mechanisation.

Researching and adopting certain types of technologies that are valuable to local people and expanding technology in to small-scale farming through the extension systems is part of the role of the Agriculture Institute of Ethiopia. For instance, the Ethiopian research institute soil and water management director stated that:

> *"There is a project that the institute is working on which is planting trees that are high-value for humans, such as mango and peach trees by adopting and using appropriate technologies in order to increase food security"* (The Ethiopian Agriculture Research Institute Soil and Water Management Director 2013).

The research institute follows the five year growth transformation plan (FYGTP) and according to this plan, technology is very important. The research institute looks at the ATP plan, which plans to increase crop productivity. According to the Ethiopian Agriculture Research Institute

director (2013), the research institute's main priority is to deliver policies in increasing especially cereal crops. The director has also expressed that:

> "*The Agriculture Research Institute has the responsibility of providing technological inputs to farmers and trainings to the extension workers and then the extension workers pass their trainings to the farmers on the ground. The trainings given to the farmers involve how to adopt improved seeds, fertilisers, westsides, information and knowledge to be able to get the most out of the 39 million-metric-tonne plan of the GTP target*" (The Ethiopian Agriculture Research Institute Soil and Water Management Director 2013).

Research institutes are also part of the Ethiopian public universities. For instance, Addis Ababa University is one of the main universities in the country and it has research institutes within it.

4.4.2 Addis Ababa University

Addis Ababa University (AAU) was first established in 1949-1950 (Negash 2013). When it was established, it was called University College of Addis Ababa. When it started, it was mainly dealing with life-science and later engineering subjects. Ever since, the university has been growing and expanding fast. Currently it has 14 campuses, of which six are research institutes. The Addis Ababa research and development research centre deals with six centres.

When the AAU started operating, most of the lecturers were mainly from foreign countries such as the United Kingdom, the United States and India. However, Ethiopian research scholars and lecturers have started to emerge over time and they have been taking over positions and responsibilities from foreign academics over the past 20-25 years (AAU's Research Officer 2013). Nevertheless, AAU still has people from abroad working with Ethiopian academics, but it is mainly managed and organised by Ethiopian scholars. One of the research officers from AAU mentioned that:

> *"Ethiopia is growing fast in building its higher education institute, for instance, over the last five years around 30 universities have been built in Ethiopia. Even though this is positive for the country, the concern of quantity verses quality is also raised by some academic staff in the AAU. Based on this concern, the university is undertaking research assessing the quality of education and research in higher education in Ethiopia"* (Addis Ababa University Research Officer 2013a).

One of the research institutes under AAU is the Centre for Ethiopian Indigenous Trees and Plants Research Institute. The Institute is founded and led by Professor Negash, and the centre focuses its research on protecting, nursing and planting the Ethiopian indigenous trees, plants, herbs that are high value for the natural environment and humans in terms of food security. According to Negash (2010), Ethiopia's ancient forests, indigenous trees, plants and herbs that have covered most of the highland of Ethiopia for millennia are now rapidly being destroyed, to almost an irreversible level. This devastation of the forests is creating large tracts of mountain slopes leaving the already fragile watersheds vulnerable and unprotected, increasing human and environmental degradation.

According to Negash (2010), the fast devastation, deforestation of the ancient trees and forests of Ethiopia is leaving some part of the country dry. Massive soil erosion has been occurring over the past 100 years, decreasing the soil nutrition and depleting it. This issue has caused widespread nutrient deficiency diseases in humans, crops, plants and animals. In Ethiopia today, there are fewer medicinal, nitrogen fixing plant species than there were around 100 years ago (Negash 2013). According to a research officer from AAU (2013c), there is now a realisation in Ethiopia, after so long, that the consequences of deforestation and soil impoverishment are not only directly linked to the unfulfilled massive amount of human potential, but also to the huge amount of money that the Ethiopian Government spent on purchasing commercial chemical fertilisers and timber from the international market.

According to the Ethiopian Indigenous Trees and Plants Research Institute founder Professor Negash (2013), there is also a concern now that Ethiopia's natural soil structure is being increasingly damaged by the intense use of chemical fertilisers. Even though commercial fertilisers are generally good at providing macronutrients such as nitrogen, phosphorous and potassium; however, the latter are to competitively reduce the absorption of micronutrients such as iron, manganese, molybdenum or zinc. He stressed that malnutrition among some Ethiopian's rural and urban population remains chronic. Therefore, research institutes have great responsibility in filling the gap of research in the area of sustainable food security related to nutritional value of the food being produced in the country.

4.4.3 Research Organisations Management and Research Focus Areas

According to the Ethiopian Agriculture Research Institute director (2013), the Ethiopia's agriculture research institutes research focus areas vary. The institute is organised through the five year strategy work plan and the priorities are specified in this plan in terms of food security

issues in the country. The focus areas include technology, information and knowledge production for the development research work. Specifically, there is research that is focussed on the crop selection. The institute director added that:

> *"Our research involves working with the international or other national research agencies; mainly we exchange or adopt knowledge such as improved seeds and herbicide/pesticides"* (The Ethiopian Agriculture Research Institute Soil and Water Management Director 2013).

The Ethiopian Government believes that improving the research institute, providing technologies such as agricultural inputs to the farmers helps improve food security for the people. According to the Ethiopian Soil and Management Director (2013) the extension workers work very closely with small-scale farmers delivering knowledge. Even though the Government is trying very hard to deliver these technologies to the farmers, there is also a limitation on availability of agricultural inputs such as improved seeds and fertiliser and the research institute cannot reach all farmers. The Agriculture Research Institute water and soil management director mentioned that:

> "*The research institute also works very closely with farmers through its extension system by providing the people with adoptable technologies, methods, trainings and advice on coping mechanisms. They also give training and advice on short-term crops, as well as water and soil conservation methods, especially in dry areas, using rainwater and flood water storage systems. For this, the government tries to provide equipment and materials*" (The Ethiopian Agriculture Research Institute Soil and Water Management Director 2013).

The Ethiopian agriculture research system and extension system are interlinked. In a sense that for instance, a researcher would go to a village and collect data, for instance if a specific policy is working on the ground. On the other hand an extension worker would go to a village and give training to farmers for example training how to use a certain agricultural technology or introduce a policy to villagers.

The Ethiopian Government has the Ethiopian Seed Enterprise Agency that deals with the improved seeds research for the country. The Ethiopian Seed Enterprise Agency has the responsibility of dealing with breeding seeds and selling them to the farmers. According to the director of the Seed Enterprise Agency (2013), there are different stages to the improved seed

process, for instance there is the breeder seed, pre-basic seed, basic seed and finally certified seed. He added that:

> "*We first get the "breeder seed" from the Ethiopian agricultural research institute, and we multiply the seed on the stage of "pre-basic", then under the "basic" stage we multiply it even more. Then it goes to the "certified seed" production. After it has been approved to the standard seed quality that is required, and only after that we sell it to the farmers*" (The Ethiopian Seed Enterprise Agency Director 2013).

The Ethiopian Seed Enterprise Agency director (2013) explained that Ethiopia has many indigenous seeds; however, the enterprise also has foreign seeds. When it is decided to breed the indigenous and foreign seeds in order to get more productivity, it is first tested if they are suitable with the environment and soil and only then they are being sold to the farmers. He added that Ethiopia does not allow genetically modified seeds to enter the country.

Therefore, when stating seed breeding, it means that the Government allows only increasing the quantity of the seed, seed multiplication not changing its genetics. Therefore, there is research work of seed breeding, seed multiplications under the Ethiopian agriculture research institute working closely with the Ethiopian Seed Enterprise agency.

Through the agriculture research institute extension system, policy implementation is done in reaching the people on the ground. According to of the research officer (2013b), the research institutes have very little role in the policy making process in the country. However, the institute is active in providing research, knowledge to the policy makers so they can use that research in making policy. For instance an extension worker in Dejen *Woreda* stated that:

> "*Usually, the research institutes are active in the policy implementation process of the ATP. We believe that the research work that we do at the ground level is being used in the policy making process, but we mainly focus on policy implementation through extension work*" (*Dejen Woreda* Extension Worker 2014a).

The ATP representative from *Debre Markos Zone* (2014) stressed that usually policy making does involve the research organisations; because it is how information and data is gathered from the ground level to help the Government develop a policy related to the issue people have. He added that, policy implementation works through the extension systems, and most of the time it works very well. For instance, through the extension workers, farmers are able to adopt the technologies to help them grow more food.

On the other hand, an extension worker from *Gelgele* village (2014b) stated that policy makers or people that deal with high level policy express that policy making do involve stakeholders such as researchers, extension workers and farmers. However, in reality policy is being made at a high level. People at the ground level, most of the time do not even know about the policy that is being made on behalf of them; and only comes in contact with the policy through extension workers at their door steps.

The Ethiopian higher education research institutes are active in producing research and knowledge. However, according to one of the research officer in AAU (2013a), it is not very obvious whether the research institutes are involved in the policy making process of food security. This is because researchers and policy makers do not work together closely when designing a policy. Usually the research institutes hear about the policy after the policy is being made by the politicians. He added that the institute is encouraged to undertake research if the policy identifies something as an issue at a top level; then the researchers are expected to report back the findings from the ground level research. However, if farmers raise some issues and a policy change is needed to tackle these issues, it gets ignored by the high level policy makers. Therefore, policy is a top-down, a one direction approach. Another research officer stated that:

> *"The country has so many issue related to food security, and the higher education research institute is busy undertaking research work that is related to social and environmental issues in addressing food insecurity in the country. However, the Government does very little in involving the researchers or the research institutes in designing or making policy. There are many Ethiopian researchers in the country that work very closely with farmers, understand the issues farmers have and the environment. But the Government consults foreign researchers when designing a policy, which have very little understanding of the Ethiopian farmers or the environment"* (Addis Ababa University Research Officer 2013c).

Research and development in Ethiopia is a recent phenomenon, and it has done some good progress in the past few years, however it also faces a number of challenges ahead in order to fully serve its purpose. Funding is a major issue for most of the research institutes in Ethiopia including the agricultural and the higher education research organisations. Through the lack of funding, the rate of brain-drain is high in the country as researchers and scholars leave to other organisations with-in the country or other countries, where they are paid better and there are better research materials available.

Therefore, there is great attention that needs to be paid in involving the research institute organisations in the policy making process and also in financing the research organisations, improving efficiency, transparency and providing more incentives for researcher and scholars in Ethiopia. From the interviews with research institute officers, it is understood that the research institute in Ethiopia plays a high role in implementing the GTP policy at the ground level, through the extension system. However, in policy formation process, the institutes play very little role.

4.5 Conclusions

I have gathered the African Union and the Ethiopian Government food security policy that is in place from the materials that are already available via their website, policy document papers and from the face-to face in-depth interviews I had with the policy representatives in Ethiopia. The documents I have collected shows that through the African Union, Ethiopia incorporating CAADP with its own GTP policy and the effort is to transform the agriculture sector through the ATP in order to encourage farmers to produce more food using technological inputs such as improved seeds, chemical fertiliser and pest/herbicide. The Government believes that in this way, the farmers can eat more, at least three times a day, sell more, improve their livelihood and increase their food security status. At a national level, the plan is also to improve the nation's economic growth through the commercialisation of agriculture, involving the private sectors, exporting crops and creating foreign investments.

From the above discussion, it was noticeable that the interview participants where repeating the policy documents and they were very consistent in doing that. I have also observed that they answered my questions in a politically correct manner and did not express many challenges around the policies in place. It was only when I started interviewing the researchers, especially those from AAU the issues of policy started surfacing. In this chapter, I have only outlined the policies in place from the interview responses and based on the secondary data available from their offices and websites. I have discussed the African Union and the Ethiopian Government food security policy and implementation process critically in the next chapter.

Chapter 5. The African Union and the Ethiopian Government Food Security Policy Politics

5.1 Introduction

Food insecurity in the Sub-Saharan African region currently is a great challenge. The African political leaders through the African Union have clear policies in place to be able to tackle this issue. Through the NEPAD Agency and the CAADP framework, policies are in place to reduce the number of people food insecure, eradicate poverty in the continent and lead Africa into a middle income continent by 2025. Ethiopia, as a member of the African Union country has adopted the AU's food security policy and implementation is already in place in order to tackle the food insecurity problem of the country. Food security policy formation and implementation process is not a straight forward procedure before we can even assess the effectiveness of it at a ground level. I therefore critically have discussed the political environment of the AU and the Ethiopian Government policy formation and implementation process before it reaches the people at a village level.

Using the discourse and narratives/ politics and interests/ and actors and networks model developed by Keeley and Scoones (2003), I critically discuss the policy making process of the African Union and the Ethiopian Government. First, I discuss the African Union current policy political process by identifiyng the narratives and discourses used in policy creation and the actors involved in this process and their interest in this arena of political policy. Using the same aproach, I then discuss the Ethiopian Government policy process politics, narratives and actors involved. Lastly, in the African continent including Ethiopia, the challenges and opportunities involved in the research and developemnt sector is dicussed in this chapter.

5.2 The African Union Food Security Policy Politics

The African Union food security policies have emerged from specific narratives. Ever since many African countries have gained their independency from the colonial powers, the dominant narrative for the issues such as food insecurity and hunger issues in the continent has been the Malthusian narrative. Malthus' narrative has been influencing the argument over the natural resources and agricultural practices in many African countries (Leach and Mearns 1996). Malthus' essay on the "*Principle of Population*" in 1798, began a formal intellectual

tradition, linking "*population growth, resource scarcity and war*" (Verhoeven 2011). Malthus argued that:

"Whereas subsistence production grows arithmetically, human population has a geometrical growth rate, which causes catastrophes as population outpaces output, there is less and less food available which leads to ever greater destitution" (Verhoeven 2011, p.681).

Malthus called the inevitable tragedy by stating:

"Through moral restraint, the poor could alter birth rates and only war, disease and famine can really be relied on to check population on a planet of finite resources" (Verhoeven 2011,p.681)

The current African leaders also have similar narrative. For instance the NEPAD Agency representative has stated that:

> "*Africa is under a huge amount of pressure from the fast rate of population growth, it needs a different perspective to the current ones if it is to feed its growing population, battle climate change and environmental degradation. And there is a great need for growing more food with the limited resources we have available*" (NEPAD Agency Policy Representative 2013).

The African Union narrative has been associated with particular events such as population growth, linked to research studies such as climate change, limited resources and environmental degradation and supported by different interest groups such as government officials, international development agencies, multinationals and bilateral bodies to draw on conclusions about the food insecurity issue of the continent (Zimmermann 2009). From my interview with the AU officials, it was also clear that the AU policy makers claim food insecurity in the continent is related to population growth, environmental issues such as draught and low productivity of land.

It is perceived that threat of drought, environmental and natural resources degradation lead to hunger and food insecurity in Africa. In the policy making process, the significance of war, especially civil war related to food insecurity and hunger in the continent is less visible (WFP 2011). Only specific narratives are raised and these narrative has mainly been put forward by technical and scientific elites, supported by economists in the agricultural and development sectors such as, FAO, The Consultative Group for International Agriculture (CGIAR), World Bank, IMF and African politicians (Zimmermann 2009).

One of the key recent narratives for solving the food issue is that the idea that Sub-Saharan Africa ought to follow the previous examples of the green revolution that was mainly implemented in Asian countries such as India and China. In the realm of agricultural development, this not only proposes that this will increase food production but the African policy makers also believe that it will also build a foundation for future industrial development in Africa (Moseley 2011). For instance, the NEPAD agency expert emphasised that:

> "*The current Agricultural practice most African farmers practice needs to be transformed to the highest level. Because, it is backward and not productive, and through this transformation, Africa nations can grow their economies"* (NEPAD Agency Policy Representative 2013).

Through the Alliance for a Green Revolution in Africa (AGRA), the New Green Revolution for Africa which entails technological packages for farmer is the main narratives used to solve the food insecurity issue of the continent. AGRA is led and chaired by a very powerful and key actor Kofi Annan (previous UN Secretary). Other powerful actors leading AGRA are; Strive Masiyiwa who is a trustee of the Rockefeller Foundation, Sylvia M. Mathew of Bill & Melinda Gates Foundation, Mamphela Ramphele, former Managing Director of the World Bank (2000-2006), Rajiv J. Shah of Bill & Melinda Gates Foundation, Nadya K. Shmavonian of the Rockefeller Foundation, Roy Steiner of Bill & Melinda Gates Foundation and Gary Toenniessen the Managing Director of the Rockefeller Foundation (AU 2015).

According to Zimmermann (2009), while the African New Green Revolution strategy is being accepted by most of the African Nations, it is not clear how this actually benefits the small-scale farmers and the poor households that the programme is claiming to serve in Sub-Saharan Africa. For most food insecure households in the continent, there are some problems with this strategy. Zimmermann added that for instance, one of the issues is that this approach to farming is energy intensive as most fertilisers and pesticides are petroleum based.

IDS (2006) expressed that the introduction of energy intensive farming methods to the African farmers is short sighted, as it could lead to the dependency on global energy prices. Moreover, the New Green Revolution pushes farmers to buy agricultural technologies, which means that it will be inaccessible to the poorest of the poor and some farmers might not even afford it. Another issue according to IDS is also the dependency on these technologies; improved seeds, fertiliser and pesticides. Farmers will rely on the supply of these inputs by external bodies. The CAADP representative specified that:

> "*The technologies such as chemical fertiliser, herb/pesticides and improved seeds we are importing to the African farmers to increase food production and productivity is very important. They are not particularly cheap to the farmers and are chemically intense; however, it is vital we adopt these methods if we are to feed our people, come out of poverty and be middle income earners"* (CAADP Policy Representative 2013).

Some of the arguments that are used within the African Union policy makers are that the NEPAD Agency, the CAADP framework and AGRA have all been set-up to increase food security for the people of Africa; but it is also to intensify and commercialise the African agriculture sector. This is in order to grow economically and catch up with the rest of the developed world. The AU land management team member criticised that:

> *"I don't understand why we have to rush in to the so called "economic growth" and reach a middle income state, what is the rush? Africa needs to slow down, assess its current situation in relation to its past and where it wants to go. If we are to follow the Western development model, we might struggle, because the western model is not known for being environmentally friendly, as it encourages consumerism and competition. We have to create our own models that would increase human well-being and highly respect nature, we are part of nature"* (African Union Land Management Officer 2013).

According to Zimmermann (2009), the push on the current AU, NEPAD Agency CAADP framework policy agendas on the people of Africa is a politically, economically and technically driven solution with little consultation room for initiating or reflection from the vastly diverse African people. One might ask that who the people that initiated the NEAPD agency were and what purpose and political interest they had in initiating a continental level programme representing all of the African diverse people? According to Bond (2002), NEPAD was initiated by the South African president Thabo Mbeki and his two main internationally oriented cabinet colleagues, finance minister Trevor Manuel and trade-industry minister Alec Erwin. These individuals had great power to be able to influence and initiate a continental level policy (Bond 2002). The food security expert of the AU mentioned that:

> *"NEPAD is a very high level Agency mostly consists of politicians and experts. At this level in the office, NEPAD operates through order of the politicians; it is very political; however, it is highly dedicated to serving the people of Africa on the ground"* (CAADP Policy Officer 2013).

Thomson (2016) stated that the African Civil Society argued that, NEAPD's principles have been imposed on the continent by a few African Governments and elites. It is supported by the countries of the North and the Bretton Woods Institutions such as the WB, IMF and the WTO politics and its interest, and not the general African people. The land management team member of the AU emphasised that:

> *"The African people in all parts of the countries, cities, towns and villages have not been involved in creating this path of development while their destiny is being made by elite representatives. Until today, the agency remains largely unknown to most Africans on the ground"* (African Union Land Management Officer 2013).

According to Bond (2002), the heart of economic strategy of the NEPAD agency is based on the "*discredited package*" of IMF and World Bank stimulated economic policies that have been implemented by African Nations in a past twenty years with catastrophic outcomes for Africans' economies. Bond (2002) added that there were very little policy spaces available for actors or the African civil societies, such as farmer's or the general public to participate in the NEPAD policy creation, CAADP framework and agendas.

While most African people had no idea even about the existence of the NEPAD agency, Bond criticised that the global elites celebrated NEPAD policy agendas in places varying from the World Economic Forum gathering including Tony Blair, in New York City to the summit of self-described progressive national leaders, who gathered in Stockholm to form a global relationship. All elite attentions were turning to Africa while holding meetings in these places, hoping that NEPAD would serve as "*a large enough Band-Aid for blindfolded African people*" (Bond 2002). According to Olivier (2003):

> *"While the original pan-Africanists sought the political kingdom for Africa, Mbeki casts himself as a neo-pan-Africanist, seeking the economic kingdom for the Africans. He articulates the idea of building a new, progressive and modernised Africa, an Africa relieved from poverty, backwardness and political decay, and swimming with the main current of world politics and economics*" (Olivier 2003, p.815).

The NEPAD leaders using arguments such as the African way of life, mainly the way they produce food is not effective and it is not leading to economic development. The ways of life, the people currently practice according to their value, culture, diversity and background is not practical; it is backward, and NEPAD is pushing that it needs to be resolved and changed. This

narrative is based on alien values; value of the policy initiator elite actors for their own political interest (INDABA 2002). For instance, the NEPAD representative stated that:

> "*Africa has lagged behind in its economic development compared to other continents, mostly because we still practice traditional ways of life; farming and we need to adopt new ways of life and farming systems, so we can improve our economies*" (NEPAD Policy Officer 2013).

The land management team member from the African Union emphasised that:

> *"The original Pan-Africanists had a vision of enlightened Africans home and abroad, who are in charge of their own life and are equipped well in the making of their own destinies. However, now the African Union and its agents and partners are just playing a political game on the people"* (African Union Land Management Officer 2013).

The NEPAD's agenda assumes that adopting the Western style of agriculture system, economic growth, financial system and technical approach is appropriate to all African people. And in doing so, transforming Africa's agriculture to a whole different level will play a huge role. Supporting this fact, Mold (2012) stated that over the last decade both resource-rich and resource-poor countries in Sub-Saharan Africa have enjoyed, with few exceptions, a much-improved economic performance through the transformation of the agriculture sector. Melchers (2009) mentioned that Africa needs to be more active to further improve its economic growth and increase food security for its people. For instance, the CAADP food security expert emphasised that:

> *"Economic growth through the agricultural transformation agenda such as CAADP framework is the way forward for Africa to achieve food security and grow economically"* (CAADP Policy Officer 2013).

For instance, at a high-level meeting on food security in Africa, organised by the AU, Brazil's Lula Institute and headed by former Brazilian President Luiz Inácio Lula da Silva and FAO in Addis Ababa in July 2013; the 2025 target was initially drafted out (FAO 2014). Sharing the Chinese experience, at the Toward African Renaissance; Renewed Partnership for Unified Approach to End Hunger in Africa by 2025 with-in the CAADP Framework, the Chinese ambassador in Ethiopia stated that:

"*Under the South to South Cooperation, China also helps and supports the developing countries especially African countries to enhance their agriculture productivity, increase their*

food production and enhance their capacity to address the issue of hunger and food insecurity" (Chinese Ambassador in Ethiopia 2013).

Furthermore, political interests related to land deals between African politicians and the South to South cooperation and other Westerns foreign investors is visible now in many African countries including Ethiopia. These land-deals between African Nations and foreign investors are a very fast growing trend since the global food crisis hit the world in 2007-2008. These deals are often made in the name of a source of employment and as a means to bring the New Green Revolution to Sub-Saharan Africa. Most of these deals are long term leases of land (land grabs) to foreign investors and mostly it is for the production of agricultural foods for export or cash crops such as flowers and coffee (Moseley 2011). The NEPAD expert stated that:

> *"Through land-deals and foreign investments, we are hoping to increase more food production as these investors often bring modern technologies, money and expertise with them; it is also to create employment for example for people with no land"* (NEPAD Policy Officer 2013).

Even though there are many critics around the AU politician food security policies on a vast variety of people with different cultures and ways of life; but, the African Union and its agencies despite its challenges have also been doing some encouraging work over the years. For instance, some supporters of CAADP argue that it is to the credit of NEPAD and the early supporters of CAADP for having put agriculture on the agenda early on. Since the food crisis in 2006-2008, CAADP has received the crucial push from its NEPAD partners to perform better and has more support (Brüntrup 2011). For instance the NEPAD expert mentioned that:

> "*CAADP is one of NEPAD's main priority agendas, and when it was first created, it has had a lot of attention from the international community; however, the implementation process was slow. But it picked up since the global food crisis hit around 2008, it is actually surprising it has survived this long, and it is only getting stronger now*" (NEPAD Policy Officer 2013).

Currently, more than half of all African countries are now engaging in CAADP policy process and are implementing it on the ground. According to the NEPAD agency expert:

> "*Since CAADP is growing with more resources devoted to it, it is very likely that most of the African Nations will implement the framework, the challenge is there, but there are good prospects too*" (NEPAD Policy Officer 2013).

According to the CAADP specialist (2013) CAADP is a general framework that was created at high level meetings by powerful individuals. However, each country has a chance to make it specific to its own needs and priorities. The NEPAD water management official stated that:

> *"CAADP has open policy space for each country to adopt depending on its priority. Also, within the framework, new development options are openly discussed, and problems are raised, and for this, we have the Global Donor Platform Rural Development (GDPRD) which has established the CAADP Development Partners' Task Team, a formalised link to CAADP"* (NEPAD Water Management Officer 2013).

According to the NEPAD representative (2013), the key principles of NEPAD are reflected in the concept of CAADP. One is that, it is very much African owned and stakeholders were part of the policy process. The NEPAD land management official expressed that:

> *"When the African Union stated that NEPAD is an African owned policy, it is ironic as it may seem as it is an African owned policy; one might ask that how is it that it is African owned when it is only a handful of African elites initiated it with the international actors and their approval? And its people did not even know its existence until it came as a package with the agricultural transformation programme at their door step"* (NEPAD Land Management Officer 2013).

The African Union documents had already acknowledged that Africa will need to advance the policy and regulatory framework for agriculture, formulating it to be more encouraging for local community involvement in rural areas and commercial corporations' and other private sector. The AU would also need to advance its governance in relation to giving a voice to both small and large-scale participants in the farming environment (NEPAD 2002).

From the discussions above, the very basic policy making of the AU, NEPAD Agency and its CAADP framework is high level and involves politics and power. It is very much top-down, it uses discourse and narratives that have emerged mainly from a few selected elite politician powerful actors and interest groups and supported by specific scientific information. Furthermore, there seems to be very little policy space for the African civil society, farmers and the general African people to the contribution of the policy making process.

The African Union policy makers however have argued that even though policy making is general for the African nations and its people, it is up to an individual country to make the policies specific within the framework according to the countries priorities, needs of its people,

ways of life and the environment. The next section therefore discusses the politics of food security policy process at a country level; Ethiopia as a focus place of study.

5.3 The Ethiopian Government Food Security Policy Politics

Food insecurity in Ethiopia has been a challenging issue since the late 1970s for the Ethiopian policy makers and politicians. There have been many narratives related to this issue and ways to solve it. For instance according FAO (2010), one of the main dominant narratives in the country has been that the reason for drought, famine and food insecurity to exist in the country is because the environment is degraded. According to Keeley and Scoones (2000), complications have arisen in Ethiopia over strategies for environmental rehabilitation, with the Ethiopian Government suggesting that large mass mobilisation schemes are the only way to address the long-term challenge of combating drought and food insecurity. While environmentalists such as Greenpeace stated that increasing farmers' incentives to invest on their own land is a very important aspect for food security in the country.

According to Bill & Melinda Gates Foundation, boosting food production through the promotion of green revolution technologies in the marginal areas of Ethiopia is one of the best ways to decrease the food insecurity issues in Ethiopia (FAO 2012). The Ethiopian Government (2013) claims that more incorporated, low external input solutions based on the values of conservation agriculture are more suitable ways of dealing with the environmental degradation issues and shortages of food in the long run in Ethiopia. These are some of the main arguments and debates about food security, environment and rural development policies in Ethiopia (Keeley and Scoones 2000).

Currently, the Ethiopian Government food security policy position is that growing populations and declining per capita food production will result in major food gaps which must be filled by aggressive food grain production. For instance, the Ethiopian Federal level GTP representative (2013) expressed that the Ethiopian population growth is accelerating at a fast rate, and there must be more food production by transforming the agriculture system in the country in order to meet this demand.

The policy of the Ethiopian Government appears to be similar to that of the AU/NEPAD policy discourse and narratives. It claims that, due to traditional agricultural practices, inappropriate tenure and the lack of technology and a commercial outlook, food production and productivity is low in Ethiopia; therefore, a radical transformation of existing farming systems is required

to be able to feed the growing population. The Ministry of Agriculture Research Institute director and the Ethiopian food security and emergency preparedness agency representatives stated that:

> *"We have a growing population issue in Ethiopia. To be able to feed this demand; we must adopt new ways of farming and increase food production at a fast rate"* (The Ethiopian Ministry of Agriculture Research Institute director 2013).

> *"Commercialising the agriculture system is the key to Ethiopia's food security. The Government does also have programmes focussing on short term and long term priorities to achieving food security for the people. For instance the Productive Safety Net Programme (PSNP) does fill the gap of food insecurity for the household, and it also helps the household become food secure in a longer term"* (The Ethiopian Food Security and Emergency Preparedness Agency Representatives 2013).

One of the Ethiopian research organisation officers expressed his concern by stating that:

> *"The Government of Ethiopia has the narrative that the agricultural transformation policy is the fastest way to increase food security, come out of poverty and reach a mid-income country at least by 2025; but this is naïve as this policy could also bring other problems if not carefully examined"* (Addis Ababa University Research Officer 2013a).

Increasing food production and productivity through the supply of new improved seeds, synthetic fertilisers and pesticides is the central goal of Ethiopian national food security policy. According to one of the research officers from AAU (2013b), even though the name the "New Green Revolution for Africa" is recent; but one of the central aims of the large-scale integrated rural development projects that dominated the Ethiopian rural development policy for the last forty years has been associated with the objectives of the green revolution agendas. This includes the use of technologies such as fertiliser and improved seeds to increase productivity. The ATP extension worker stated that:

> *"Our main priority now is to feed the people and to be able to do that, food productivity and production is a central role we must play, this includes the supply of fertiliser, pesticides and improved seeds to the farmers"* (ATP Extension Worker 2014a).

The focus on the green revolution, increasing crop production and improving productivity through the use of chemical fertiliser, pesticides and improved seed suits certain political and economic interest groups in Ethiopia. The fertiliser, pesticides and improved seed market is a

multibillion dollar business worldwide (Daño 2007). For instance, the Oslo-based Yara Fertiliser Foundation sells fertilisers to farmers and industrial customers across 160 countries, generating annual revenue of about $11.2 billion (Zanki 2015).

Daño (2007) stated this Norwegian Foundation is the only international fertiliser producer actor with a major appearance in Africa for the past 25 years. Moreover, Yara was created as a face of the Foundation's pledge to implement and stimulate corporate actions in support of the UN Millennium Development Goals (MDGs) and a Green Revolution in Africa.

Yara is known as one of the main players in the African agricultural transformation agenda and it was created in 2005 to mark the anniversary of the world's leading supplier of mineral fertilisers, Yara International (Daño 2007). Daño added that the Foundation has been awarding the Yara Prize for a Green Revolution movement in Africa, to praise exceptional efforts to enhance food production and availability in a sustainable manner, with a plan to reduce hunger in Africa. At the time, the Ethiopian president in 2005, Meles Zenawi, was the winner of the award, and US$ 200,000 prize in 2005. In January 2006, just three months after Meles Zenawi won the prize, Yara International won major fertiliser contracts in Ethiopia that were worth €12 million.

Daño (2007) added that the fertilisers were sold to two government-controlled cooperatives. These cooperatives have been reported to have pushed poor farmers to buy fertilisers on credit previously; and this was closely related with powerful political parties in the country that used fertiliser distribution as a tool to suppress the farmers at the ground level (Daño 2007).

According to IFPRI (2012), Yara, also, awarded Dr. Eleni Gabre-Madhin, the founder and outgoing CEO of the Ethiopia Commodities Exchange (ECX), the Yara Prize for an African Green Revolution in 2012. As a globally recognised leader on African agricultural transformation, Dr. Eleni has been awarded for presenting "*visionary and remarkable leadership*" in organising the transformation procedure in a direction to a resourcefully performing market, mainly for coffee farmers that are smallholder in Ethiopia. A research officer from Addis Ababa University (2013c) emphasised that:

> *"The Green Revolution programme, which involves adoption of the agricultural inputs such as improved seeds and chemical fertiliser by the Ethiopian farmers, is very political. The policies are made by powerful actors such FAO representatives, G8 members, multi billionaires such as Bill Gate, the African Union powerful actors such as Kofi Annan and the Ethiopian politicians such as the Prime-mister. The policy*

> *involves powerful companies such as the Yara Fertiliser Company in making deals at high level meetings, held in expensive hotels, and then the farmers are the receivers of these policies* (Addis Ababa University Research Officer 2013c).

The African Union working with the Ethiopian Government and G8 members' accelerating the agriculture transformation policy, the green revolution programme in Ethiopia, Yara at the G8 Summit at L'Aquila, Italy in 2009 disclosed that the company has a plan to invest in Ethiopia. Not only in Ethiopia, but it is devoted to a wider Sub-Saharan Africa policy plan, implementing an incorporated multi-country approach (USAID 2012). Moreover, it took a major business development action at a Pan-African level to identify the most competitive location to develop a world-class fertiliser production service and, if an appropriate location can be located, this plan could sum to a US$1.5-2 billion investment (USAID 2012). According to Yewondwossen (2012), it plans to control a considerable stake in a Cyprus-Indian joint venture company which is involved in mining potash deposits in the Northern part of Ethiopia by 2018 around the Dallol Depression.

There are many advantages to the green revolution programme in Ethiopia. For instance, one of the main objectives of the programme is commercialising the agriculture sector by engaging the private sectors. This private sector involvement could help Ethiopia earn more foreign earnings and contribute to its economic development plan. The Ethiopian federal level policy representative stated that:

> *"Involving the private sector is vital in the transformation of Ethiopian's agriculture. The private sector brings technology, expertise and employment opportunities. This will help raise the country's GDP"* (Federal Level Policy Officer 2013).

The Ethiopian Governance policy making structures is high-level and top-down (Berhanu 2012). The implementation process starts at high-level. Then it goes down to Regions, *Zones*, *Woredas*, *Kebeles* and finally reaches the people on the ground at household level (Lavers 2013). From my interviews with politicians and policy representatives at the AU, NEPAD and the Ethiopian Ministry of Agriculture, level to the research officers from Addis Ababa University, extension workers and farmers at the village level; it was clear that policy making takes place at high level meetings, with very few powerful actors involved and implementation is top-down.

The Ethiopian agricultural policy political climate pushed by the Government imposing its agenda on creating sustainable food security, very little policy space has been offered for

opinions on agricultural extension outside the dominant narratives (Berhanu 2012). Farmers at the ground level have very little to no influence in the policy making process, and they only get to know the policy when it reaches them at the household level. For instance, one of the farming participants stated that they don't even know who makes the policies, how it is being made and under what cost. All they know is that they get to be told what to do in meetings, very controlled tight meetings that happen very often. The Ethiopian GTP preventative stated that:

> *"There is clear evidence that the Ethiopian Government has taken the challenge in improving the peoples' lives through the current economic reforms. Some changes are emerging through the policies adopted by the Ethiopian Government, including the adoption of the NEPAD/CAADP framework, PIF and the GTP. We are doing all we can to improve food security for the people and improving their life over all. For instance now through the commercialisation of the agriculture system, we are involving countries and the private investors to rent, buy land to cultivate. These investors bring technology, expertise and money. All these are beneficial to the people in a long run"* (GTP Policy Officer 2013).

Some of the research officers I have interviewed from AAU have raised their concern over the policies in place as it is high level and top-down. However, they have also mentioned that the involvement of the private sector could help bring new ideas and technologies in the Ethiopian agriculture sector. According to Dessalegn (2008), there is a change in direction in terms of Ethiopian agricultural development, with an increase in land allocations for investors to be able to cultivate on a commercial scale. A federal level Government representative said that:

> *"The involvement of the private sector in Ethiopia over the past few years is growing. The idea is that involving the private sector through land deals for commercial agriculture purpose will help produce more food and bring employment to the country. And we believe this will be effective"* (Federal Level Policy Officer 2013).

The Government insists that the involvement of the private sector is complementary to the efforts to increase the productivity of smallholder agriculture and not a substitute for them (Berhanu 2012). However, one of the research officers has a different view about land deals and the involvement of the private sectors in Ethiopia. The researcher stated that:

> *"There is this fast growing land deals that is going on in many parts of Ethiopia now. It is happening under the commercialisation of the agriculture system and increasing*

foreign investment, increasing food production and finally this would ideally increase food security for the nation and eradicate poverty. This is far from the truth, because with the level of corruption now in Ethiopia, it is unlikely the money made from these land deals would benefit the people on the ground. Also, the private investors are now pushing out the local farmers off their land, because they have permission to do so from the Government, how is this really benefiting the people? Are we supposed to buy food from an Indian or Saudi Arabian company, food that was grown in an Ethiopian land with double the price? I believe this is very dangerous to the food security of the Ethiopian people" (Addis Ababa University Research Officer 2013c).

The Ethiopian leaders claim that the policy also helps improve people's earnings, and through these earnings, people can afford to buy the food they desire. This will ideally help increase food security for the people and lead to a better life standard. Ethiopia has been implementing its agricultural transformation policy programme for a while now. This includes the CAADP framework and the effectiveness of this policy, whether it is helping people increase their food security status is discussed in chapter six.

To conclude this section, the Ethiopian Government policy making process involves high level politics with powerful individuals with political interests who make the decision at the top level. A few elite actors holding specific narratives, the implementation process of the Ethiopian Government food security policy is very much top-down. The leadership has a decentralised system and implements its policies through this administrative system to reach the people at a local level. The implementation process is very efficient in reaching the people on the *Kebele*, village level. The farmers are now adopting the policies at the household level through the agriculture development agency's extension workers at a village level. Through the Ministry of Agriculture and the Ethiopian Agriculture Research organisation, extension workers are important assets in the policy implementation process in the country. The next section discusses the challenges and opportunities of research organisations.

5.4 Research and Development Challanges and Opportunities

Early agricultural development practice has started when human societies started to shift their life style from a nomadic hunter-gatherer to a more settled way of life (Thrall *et al.* 2010). Since mankind started to exploit plants and other organisms to fulfil the changing demands for food and other needs, agriculture has been an important activity. Porceddu and Rabbinge

(1997) stated that the continuous evolution and manipulation of organisms and their function has been based on knowledge, insight and expertise.

Agriculture development has accelerated during the last century, when the scientific basis for agriculture strengthened and its simultaneous implementation became possible (Porceddu and Rabbinge 1997). Thrall *et al.* (2010) mentioned that the life style change in human societies had major impacts on the environment of agriculture and therefore the traits and characteristics of animals and plants that were favoured both consciously and unconsciously by humans for their food security.

The narratives associated with research and development and food security is that since agriculture began, around 10,000 years ago, the scale of the challenge of food security by the global policy makers has been measured not only by population growth and limited natural resources, but also by the fact that in the next fifty years the global population will consume twice as much food as has ever been consumed before (FAO 2010). Therefore, the global policy makers such as UN agencies are encouraging more food production through strengthening the agriculture research and development (R&D) sector.

Agricultural research and technological improvements are fundamentals for increasing agricultural productivity and creating income for farmers and the rural people. It is assumed that accelerating food production will reduce poverty and food insecurity in rural and urban areas (James 1996). According to UN (2012), to meet the challenge of global food insecurity needs new collaboration in agricultural R&D between the public and private sectors that increase the relative advantages of each in the search for mutual objectives. Creating the new public-private sector collaborations would encourage a sustainable agriculture system with using the natural resources effectively (UN 2012).

African countries including Ethiopia in recent years have been showing a significant progress in terms of research and development and the involvement of the public-private sector partnerships. This trend is growing as a number of countries are creating and supporting the R&D system (UNESCO 2012). UNESCO (2010) stated that:

"*A growing number of African countries have realised that without investment in science and technology, the continent will remain on the side-lines of the global economy and will find it difficult to bring an end to extreme poverty*" UNESCO 2010).

R&D programmes are emerging in the African Continent including, for instance, the Consolidated Plan of Action for Africa's Science and Technology adopted by African Ministers of Science and Technology in 2005. This plan of action combines science and technology programmes of the African Union Commission and NEPAD (Michael 2005). For instance, under the African Unions' NEPAD Agency, CAADP facilitates agricultural related issues in the continent.

"*One of CAADP's four foundational pillars focuses on increasing investments in agricultural research, extension, education, and training as a means of promoting growth in agricultural productivity*" (NEPAD 2010).

According to NEPAD (2010), in more recent years, changes in Sub-Saharan Africa have focused on problems such as redefining the government's role in agricultural research, recognising new funding sources and instruments and strengthening system linkages. Moreover, decentralising decision making processes., increasing partnerships of international leaders and other stakeholders such as farmer participation and increased and sustained investment toward stabilising investment and capacity levels is believed to enable real progress for agricultural R&D in the Region (IFPRI 2012).

According to UNESCO (2012), the lack of funding is one of the main obstacles the R&D faces the African nations, including Ethiopia. For instance, GDP devoted to R&D averages about 0.3 per cent on the continent, seven times less than that spent by industrialised countries on this sector (UNESCO 2012). Underpinning the importance of research organisations in Africa, under the Green Revolution for Africa, the African research organisations have been identified as part of the CAADP framework.

For instance, at the 2005 meeting of the FAO Committee on Food Security where the Green Revolution in Africa merited a special session, FAO members called for accelerated investments in research, technology and infrastructure and pledge to mobilise resources for the implementation of NEPAD's CAADP four pillars. Articulating to the dangers of "*replicating*" the Asian Green Revolution model in Africa, the FAO considered the term coined by Annan, "*Rainbow Evolution*", to be more relevant due to the more comprehensive nature of interventions that the situation in Africa needs. The Rainbow Evolution is a multi-hued approach that needs to go beyond a production focus to issues such as environment, biodiversity, equity and rights (Daño 2007).

Vuningoma (2012) stated that the CAADP programme has a big chance of promoting to high-quality agricultural research policies by following the findings of the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD). However, there are a number of problems encountered by the CAADP policy. For instance, one of the issues with CAADP's policies and practices is that neither African research institutions guided by either CAADP, or a key organisation such as the Alliance for a Green Revolution in Africa (AGRA), is following the IAASTD roadmap. The IAASTD was mainly sponsored by a powerful organisation, the United Nations and other international organisations and accepted by 58 leaders in 2009. It has been designed to examined how agricultural science and technology and knowledge could be best organised to reduce food insecurity and poverty and produced several complete reports.

The lead agency implementing CAADP's Pillar 4, which is increasing agricultural research, is the Forum for Agricultural Research in Africa (FARA) which developed in 2006 the Framework for African Agricultural Productivity (FAAP). The FAAP acknowledges that there has been inadequate investment in agricultural research in Africa and is planned to endorse reforms in agricultural research, education and extension programs.

CAADP's framework commitment was for African Nations to double their annual spending on agricultural research within 10 years, accelerating budgets by an average of 7.2 per year for a decade. This was that African Nations were allocating around $4.6 billion by 2015 (Vuningoma 2012). For instance, agricultural research spending in Benin has increased as a result of increased government funds to complement donors; on the other hand it has decreased in Eritrea because donors cut funding. In Ethiopia, it stayed steady and funding mainly comes from donors.

Research Organisations in Ethiopia have very little role in the policy making process of the food security policy in the country. There is evidence from the research organisations showing and suggesting that the current Ethiopian transformation of the agricultural and food system is not sustainable in the long-term (Negash 2013). It is not environmentally sustainable and socially, it constrains farmers from becoming independent small-scale farmers. These concerns and issues have been raised by some Ethiopian scholars, however they have got very little response in influencing the policy making process. The Research Organisations are on the other hand are being used in the implementation of the new food system of the country. An Addis Ababa research officer highlighted that:

> *"I am very concerned about the fast rate of agricultural transformation that is taking place now in our country. I do not believe enough studies have been done assessing the positive and negative impacts of these agricultural inputs that the farmers are now adopting to produce their crops. Research need to be done before we go crazy by implementing these inputs in our already fragile ecosystem*" (Addis Ababa University Research Officer 2013b).

Sustainable farming that is environmentally friendly to the ecosystems is a disappearing way of farming now in Ethiopia. Most of the farmers in Ethiopia are adopting the technological agricultural inputs, under AGRA Agenda, CAADP framework and the Ethiopian Agricultural Transformation Policy. There is very little support and policy for encouraging environmentally sustainable farming research in Ethiopia now. The Ethiopian Agriculture research organisation representative has stated that:

> *"Our priority now in Ethiopia is to feed the people, to make sure people eat at least 3 times a day. For this we must accelerate our agricultural sector to produce more food. Sustainable farming for us now is a luxury we cannot afford"* (The Ethiopian Agriculture Research Organisation Representative 2013).

From my study, it was clear that the Ethiopian research orgisations are encouraged to undertake research that is more foccused on agricultural food productivity through the use of techologies. Even though the Ethiopian policy repserntatives claim that the country does not allow for isntance Genetically modified seeds to enter the country, however it is acknowledged that there are focus areas in researching GM seeds as it has great potential in increasidng food productivity for the country. For instance Azadi and Ho (2010) stated that:

"*One potential is that GM technology enables the development of new crop varieties, which have beneficial characteristics for farming. This could be resistance to drought, pests or diseases. In situations of unstable food security, due to bad harvests caused by climate or crop-diseases, GM crops open up opportunities in order to alleviate and ensure food supply for poor subsistence farmers. Another potential is that some types of GM crops can reduce the use of chemical pesticides and fertilizers, because of their pest resistance with transgenic pesticides. Some crops are made resistant to stress from drought, salt and low pH*" (Azadi and Ho 2010, p.164).

However, a research officer from Addis Ababa University has stated that:

> *"The Government of Ethiopia has opened its borders for companies to come and invest in Ethiopian lands, and these investors weather they are using improved seeds or genetically modified seeds is not fully tested in most cases. The country also receives a huge amount of seeds from donation and these seeds are been used by farmers before they are even tested by the research teams of the country. This is very dangerous I believe*" (Addis Ababa University Research Officer 2013a).

A South African Biowatch organisation criticised that African nations are treated as "the dustbin of the world". Untested seeds have been donated to Africa countries and this was not as an act of kindness but an attempt to trap Africa into further dependence on foreign aid (South Africa's Biowatch, Wallegreen 1999). Some academics such the Addis Ababa research officer (2013) claim that

> *"Food insecurity in Ethiopia is in a large part a product of the economic reforms imposed to the advantage of large corporations by the IMF, World Bank and the US Government served to undermine Ethiopia's genetic diversity to the benefit of the biotech companies"* Addis Ababa University Research Officer 2013c).

The Ethiopian Seed Enterprise Agency Director has mentioned that:

> *"Here in the Ethiopian Seed Enterprise Agency, as part of the Government agency, we prepare the seeds, breed them, and then we pass them on to the relevant department, from then they sell the seeds to the farmers, and distribute it. We are only responsible for the breeding of the seeds, we only breed, but we don't modify the seeds genetically"* (The Ethiopian Seed Enterprise Agency Director 2013).

In an attempt to quicken agricultural growth that is centred on smallholder production in the Sub-Saharan African Countries, including Ethiopia, a significant amount of international research and development assistance has been directed into technical, financial and institutional support for crop breeding, market development and input subsidies (AGRA 2016). However in Ethiopia, there are very little research work that is been encouraged, research that is based on the people's ways of life, relevant to their natural environment and the issues they have related to food security. From my interview, I have found that the research and development sector of the country suffers from the lack of funding allocated to it so that it can fully undertake research that serves the people on the ground.

Research officers in the country are constrained by the Governments political structure to what type of research they undertake with tight control of the outcome of their work at a ground level. For the Ethiopian Research Organisation to be fully active and use its full potential so that it can undertake research work and contribute knowledge to the people on the ground, it must be fully equipped financially and materially and be free from political oppression and control from the Government. Because currently, the organisation is used for policy implementation tool and not as the nation's key tool for knowledge contribution and policy creation based on the peoples' way of life, need and the natural environment.

5.5 Conclusions

In my interviews with politicians and policy representatives at the AU, NEPAD level and the Ethiopian Ministry of Agriculture, the research officers from Addis Ababa University, extension workers and farmers at the village level; I have found that policy making takes place at high level meetings, with a very few powerful actors involved and the implementation process is very much to-down. Farmers at the ground level have very little to no influence in the policy making process; and they only get to know the policy when it reaches them at the household level.

The Ethiopian leadership's current dominant narrative is related to accelerating food productivity through the use of technologies; and economic development is believed to improve people's earnings, and through these earnings, people can afford to buy the food they desire. This will ideally help increase food security for the people and lead to a better life standard. The implementation process is very efficient in reaching the people at the village level. The farmers are now adopting the policies at the household level through the agriculture development agency's extension workers. Whether these polices bring the desired result, which is sustainable food security for the people is assessed from the peoples own perspective in the following chapter, chapter six.

Chapter 6. Policy Effectiveness at a Village Level From The Farmer's Perspective

6.1 Introduction

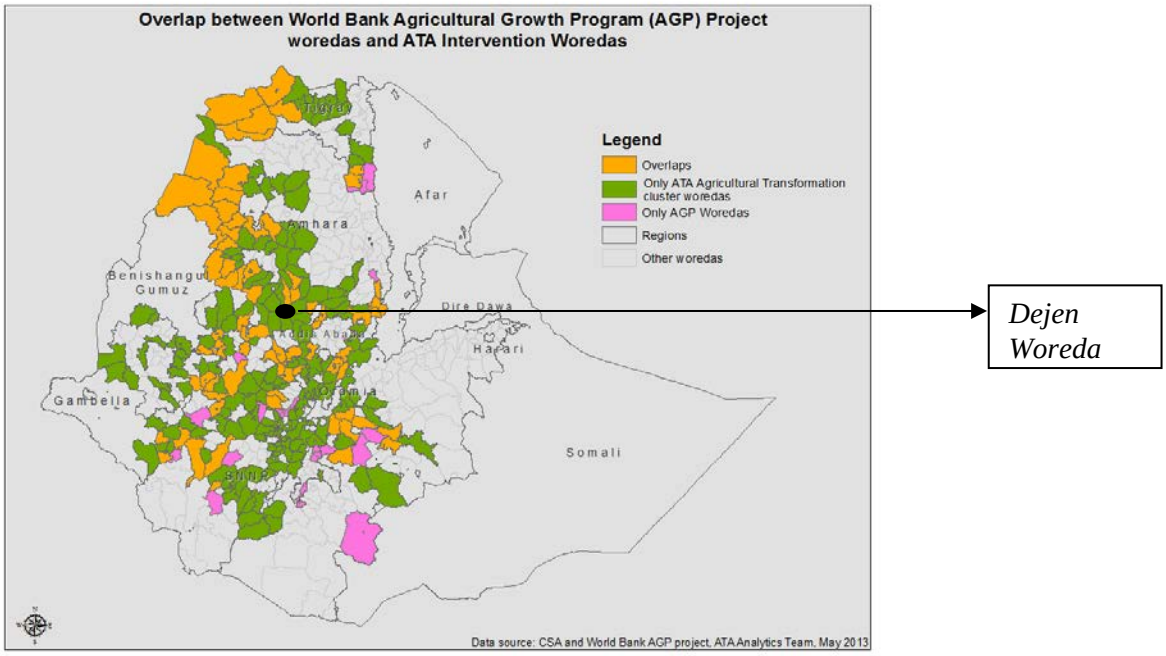
One of the objectives of this PhD was assessing the food security policy effectiveness at the ground level from the farmer's perspective. For this, I have used a case study approach by selecting two *Kebele*s in Ethiopia: of the *Amhara* Region East *Gojjam Zone, Dejen Woreda, Gelgele* and *Yetnora* Villages. In this chapter, I discuss the findings from the data I have collected from these two selected villages; and the assessment was based on the adoption of the Ethiopian ATP policy by the farmers, using the Ethiopian Government food security measurement method which is "*people eating at least three times a day*".

I chose the specific *Woreda* based on previous work I have undertaken for my BSc dissertation work in 2008, with a topic of "*The Causes of Rural-Urban Migration and its Consequences on the Local Population in Dejen Woreda"*. Moreover, growing up in *Dejen Woreda*, I have a great personal interest in investigating the environmental and social issues the farmers have in this area. Details of the case study area and more reasons for the area selection is further discussed below. In this chapter, I first discuss the case study selection, describing the study areas; which are the *Gojjam Amhara* Region, *Dejen Woreda, Gelgele* and *Yetnora* Villages. I then present the findings in graph format and discuss it.

6.2 Case Study Place Selection

The selection of the ground level case study place was based on the identification of where the Government is active in the agriculture intervention policy programmes following the CAADP, GTP policies through the AGP and ATP plans. Currently in Ethiopia, there are places that have been identified as rich for agricultural production purposes but are underdeveloped. The Agricultural Transformation Agency targets a total of 96 *Woreda*s in four Regions of Ethiopia. These are 39 in Oromia, 26 in *Amhara*, 22 in Southern Nations and 9 in Tigray (AGP 2014). The map below, map 6.1 shows the Government intervention areas covering the location of *Dejen Woreda*.

Map 6.1The AGP potrntial areas of Ethiopia, Source: EG (2013).



Dejen Woreda was one of the potential areas of the East *Gojjam*, *Amhara* Region selected by the Government for the ATP plan. The primary source for this part of the study has come from the case studies of the two Villages to provide insights into the effectiveness of the ATP program in place, in-line with the CAADP framework from the farmer's perspective. The study assessed how the ATP is being implemented at the ground level and how this ATP helps households increase their food security.

Site selection criteria for the Villages within the *Dejen Woreda* included the geographical location, links to market and road access; and the context of land ownership and commercialisation of agriculture (food production for commercial purpose) have all been taken in to account. The case study compares the changes in the household's description of food security state, before the policy was in place and after adopting the policy. This data was gathered from interviews held with the *Woreda, Kebele* officials and the farmers on the ground, at household and individual levels.

6.3 The Study Places

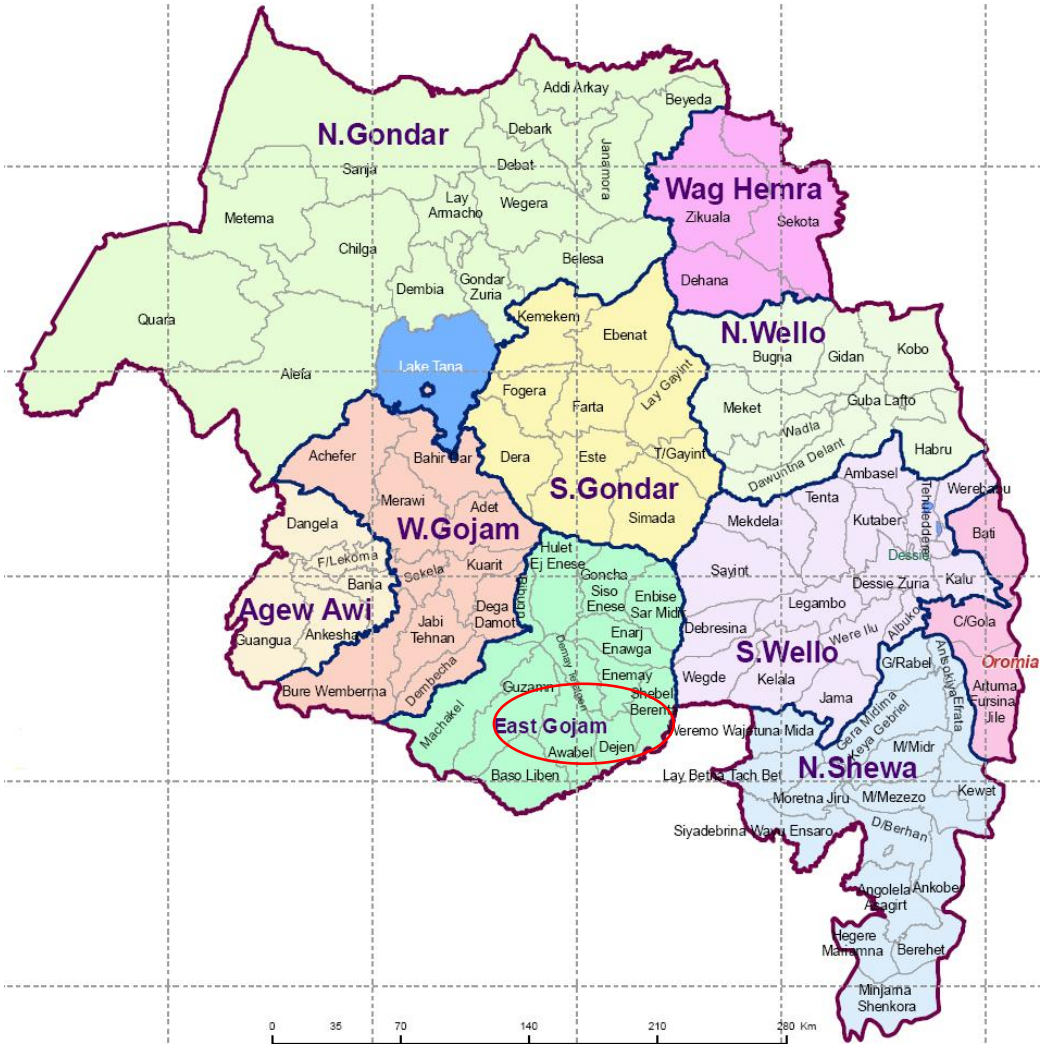
6.3.1 The Amhara Region, East Gojjam Zone

The *Amhara* Region was once one of the richest in the country in its natural resources and known for its wealthy people. However, more recently, food insecurity and the natural

resources depletion has been the challenging issues facing this region and its people (GoE 2013). Some of the reasons for these issues in the area according to the participants in this part of the research have been discussed later in this chapter.

The reasons for selecting specifically this area are that for instance, the area is a Government intervention area. The Government sees the potential in these areas as a way of increasing food production for the country as a whole rather than for individual farm households. Moreover, whenever the policy makers, scholars or the international agencies such as FAO talk about food insecurity and the natural resource depletion in Ethiopia, it is the Tigray and the Wollo regions of the country that are heavily mentioned and studied. Even though Wollo region is in the *Amhara* section, it gets more attention in terms of research work after the 1980s famine in the area and the rest of the *Amhara* regions are neglected. In particular the *Gojjam* region is hardly mentioned and very little research has been done in this area related to food insecurity issues and the natural resources depletion. The map below shows the *Amhara* Region (in circle, the East *Gojjam Zone*, *Dejen Woreda*).

Map 6.2 Ethiopian Administrative State, *Amhara* Region, East *Gojjam Zone*; *Dejen*, Source: Ethio-demography and health (2017).



East *Gojjam Zone* is one of the eleven *Zone*s of the *Amhara* Regional state. It is located in the Northern part of Ethiopia. The administrative *Zone* is bordered by West *Gojjam Zone* to the West, by Oromia Region (Wollega) to the South, by South Wollo *Zone* to the East and South Gondar *Zone* to the North (ETI 2014). The *Zone* has a total area of 14705.36 sq. km, with an altitude ranging from 800 to 4070 m. Its topography is estimated to be 48 per cent mountainous, 12 per cent rugged and 40 per cent gentle slope. It has also four agro climatic *Zone*s, these are *kola* (hot), *woinadega* (mild heat), *dega* (highland) and *wirch* (cool), covering 16 per cent, 37 per cent, 45 per cent and 2 per cent of the total area, respectively (Fentie *et al*. 2013).

The area receives a mean annual rainfall of 900 to 1800 mm and annual temperature of 8 to 27 C. The estimated land use pattern of the *Zone* shows that 30.2 per cent is used for cultivation, 11.7 per cent for grazing, 20.6 per cent for forest bushes and shrubs and 37 per cent for other purposes (Fentie *et al.* 2013). The *Zone* is divided in to 16 rural and 1 urban districts with a total of 382 *Kebele*s of which 36 are urban *Kebele*s (GoE 2013).

Food security and resource management are closely linked in the *Amhara* Region of Ethiopia. The problems of land degradation such as soil erosion, nutrients depletions and deforestation are huge problems in the highlands of Ethiopia, mainly in the *Amhara* Region such as the East *Gojjam Zone* (Desta 2000). The danger of land deprivation to the Ethiopian economy and its food security has been emphasised by many scholars. This danger is credible as about 90 per cent of the *Amhara* people live in the highlands of Ethiopia and 90 per cent of the deforested land is found there (Desta 2000).

In the highlands of Ethiopia, (including the East *Gojjam Zone),* soil erosion and loss of arable land is an extensive trend. It accounts for about 45 per cent of Ethiopia's total land area and about 66 per cent of the total land area of *Amhara* region. For instance, on steep hillsides, soil losses higher than 200 t/ha per year have been recorded (Kappel 1996). The fast and excessive removal of forests is contributing to land degradation in the area. This is due to for instance, population growth increase in the area and a growing demanding for more forest wood supply (BoA 1997).

Moreover, about 20 thousand hectares of forest have been harvested yearly in the *Amhara* Region for fuel wood, logging and building purposes and this adds to the soil erosion, land degradation and water loss of the area (Desta 2000). Legesse (2013) stated that compare to about 100 years ago, Ethiopian highlands have become degraded as a result of deforestation and intensive use of land for agriculture.

Replacing or planting trees back in these highlands is a very slow trend. In many parts of Ethiopia, there has been a strong argument as to whether eucalyptus should be planted on farmlands or not as farmers have shown a growing interest in planting these trees. According to Desta (2000), eucalyptus trees tend to have a negative soil-moisture influence on the nearest leaves and fields, and the specific field becomes unsuitable for future crop production. For this reason, farmers use these trees in highlands mainly for farmhouses and field confines (Desta 2000).

Research that focuses on the complex issue of land degradation and food security in the *Amhara* region is very limited (Legesse 2013). The very few researches that have been done in this region have failed to focus on how the social, economic and institutional factors contribute to land degradation and food insecurity in this Region. But rather, the political and policy response to the land degradation issue has focused on the technical side, pushing implementation of specific conservation technologies, such as terraces (Desta 2000). Therefore, this study have also looked at the current land, water and energy managemnt systems in place in relation to food production and food security in the *Dejen Woreda*.

6.3.2 Dejen Woreda

Dejen is a *Woreda* in West-Central Ethiopia, located in the East *Gojjam Zone* of the *Amhara* Region, on the edge of the canyon of the Blue Nile (Kassie 2012). It has a latitude and longitude of 10°10′N 38°8′E and an elevation between 2421 and 2490 meters above sea level (GADM 2012). Specific reasons for selecting the *Dejen Woreda* of the East *Gojjam Zone* for this study were for instance, the *Woreda* is located strategically by the Blue Nile River, it is on the main road linking Addis Ababa and other *Gojjam* towns and cities, it has very little development in the past 20 years or so and rural-urban migration is a huge issue due to the lack of employment, diversification and lack of farmland. Moreover, food insecurity and poverty are also key issues persisting in the area (Kassie 2012).

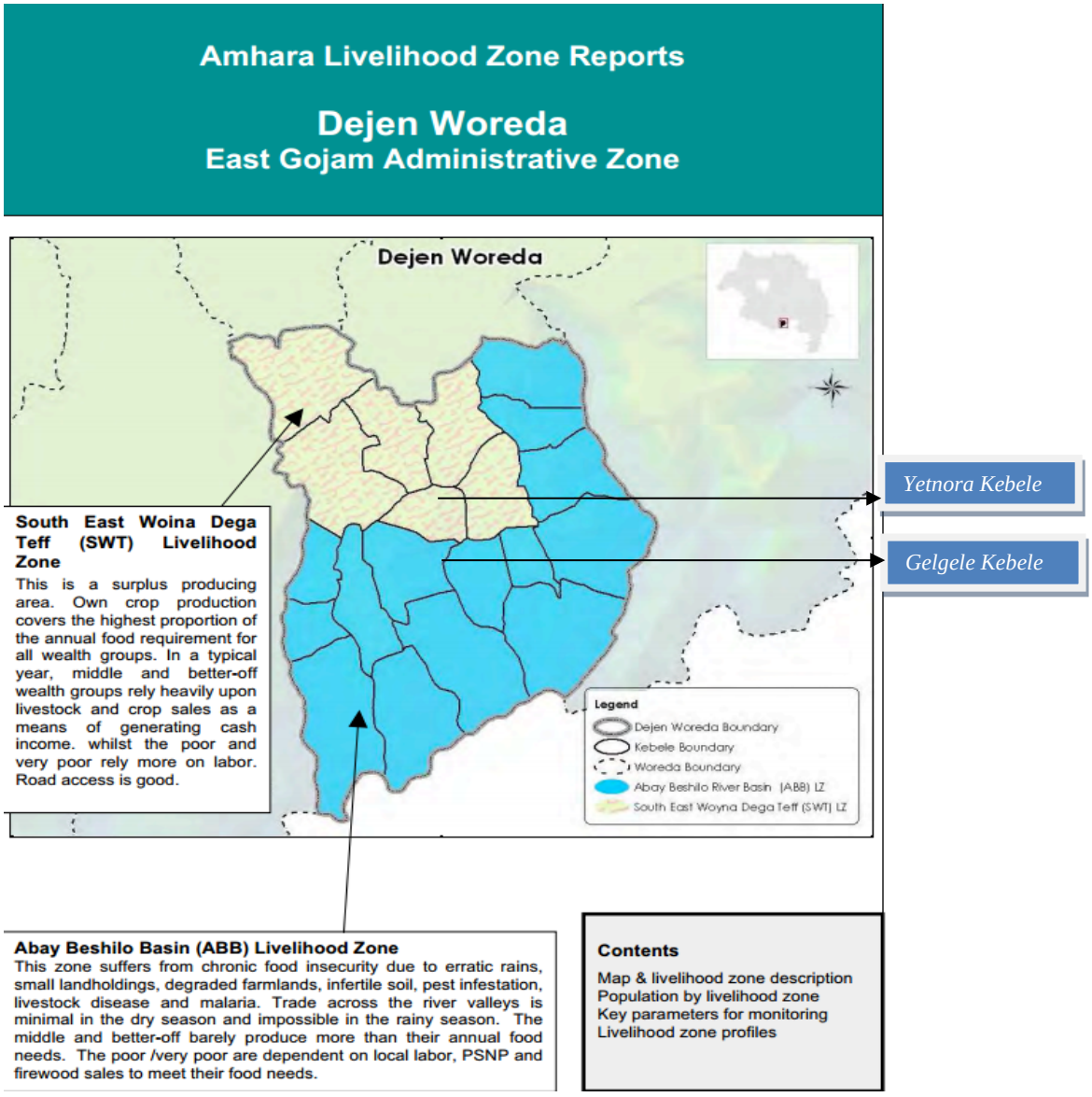
The *Woreda* has great importance in where it is strategically located. Great efforts have been made to assess the importance of *Dejen Woreda* as an inlet and outlet to-and-from the entire North-Western Region in general and particularly to-and-from *Gojjam*. Moreover, *Dejen* has been strategically very significant for the development of *Gojjam*s' political economy since the early 20th century, serving as the only direct way to the Ethiopian capital city, Addis Ababa (Kassie 2012).

The following map, 6.3 is showing one of the few researches done in the area in 2007 by USAID and ETG. The map is the *Dejen Woreda* Administrative *Zone*, showing the *Woina-Dega* Livelihood *Zone*, which is in the higher land and the *Abay-Beshilo* Livelihood *Zone* which is found in the lower *Zone* of the *Woreda*. The study has used two Villages or *Kebele*s: *Yetnora* from the higher-land and *Gelgele* from the lower-land of the *Dejen Woreda* to adress the objective of this part of the study.

Yetnora is one of the villages found in the South West *Woina-Dega* Livelihood *Zone* and *Gelgele* is found in the *Abay-Beshilo* Livelihood *Zone*. Selection of the villages is based on

their location, closest to *Dejen* town, and based on the different topography and livelihood structural conditions. The two villages were selected from these two different locations to assess the differences as well as similarities in the adoption of the ATP policies in place.

Map 6.3 The Woina-Dega livey *Zone* and the Abay Basin livelihood *Zone*, Source: USAID (2007).



Dejen Woreda mainly lies on the low-land and high-land topography of the Blue Nile Gorge. The low-land of *Dejen Woreda* tends to be hilly, dry, hotter and less productive whilst the high-land is flatter and is usually more productive agriculturally.

6.3.3 Gelgele Kebele

Usually in many villages of Ethiopia, the most important determinants of wealth are the size of land owned by households and the ownership of livestock in general and ownership of plough oxen in particular. Farmers own crop production covers the highest proportion of the annual food requirement for wealthy people (ET 2007). Communities residing within the *Gelgele Kebele* area (*Abay-Beshilo* Livelihood *Zone*) tend to have small landholdings and have degraded farmlands. Poor physical infrastructure is also a serious problem in this livelihood *Zone* (ET 2007). Moreover, the communities in the *Gelgele* Village trade in *Dejen* town with other close by villagers.

The better-off people economically in the *Gelgele* can produce not more than their annual food needs, whilst the economically poor households are dependent on food purchases usually from the markets in *Dejen* town. The main food crops cultivated in the area are *teff*, wheat and maize. Livestock are an important source of income for households with over half of their income coming from livestock sales and livestock product sales (USAID 2007).

6.3.4 Yetnora Kebele

Yetnora Kebele area, (the *woina-dega* livelihood *Zone*) is one of the productive areas in the *Amhara* Region. It is in a primarily *woina-dega* agro-ecological *Zone* and the topography is mostly plain (ET 2007). The main crops produced and consumed in *Yetnora* village are *teff*, maize and wheat. In a typical year, the better-off households rely on crop and livestock sales as the means of generating their income, whilst poorer households must also engage in paid work locally and migrate to close by towns or cities such as Addis Ababa. The main livestock are sheep and cattle. Livestock sales contribute relatively more to the income of the better-off than to that of the poor (USAID 2007).

This area benefits from good road access; this promotes relatively active trade interaction within the close by towns and between the *Zone* and external markets. The recent expansion of the road network has further improved the economic situation of the local communities in *Yetnora Kebele*. In this area, livestock disease, crop pests and expensive agricultural input prices have been the major problems affecting the local poor people (ET 2007).

Based on the food security policies in the area, the main aim of this part of the study was therefore to assess the ATP policy effectiveness from the farmers' perspective. The effectiveness assessment of the policy in place includes the outcome of the agricultural inputs farmers adopted in order to help them increase food productivity, their state of food security as

a result of the policy through their perspective and the Governments measurement system; and also by taking all the information provided above in to account.

6.4 The Food Security Policy Effectiveness in *Gelgele* and *Yetnora* Villages from the Farmer's Perspective

Ethiopia is currently implementing its agriculture transformation policy through the agriculture research extension system, in-cooperation with the African Union; CAADP four frameworks, using PIF as its main investment tool under the Growth Transformation Program (GTP). The ATP, which is part of the GTP and it is been transferred from the Ethiopian Federal Level to Regional, *Zone Woreda* and *Kebele* stages for implementation. According to the Ethiopian Federal ATP representative (2014), Ethiopia is currently implementing the CAADP programme on the ground. For instance, the representative stated that:

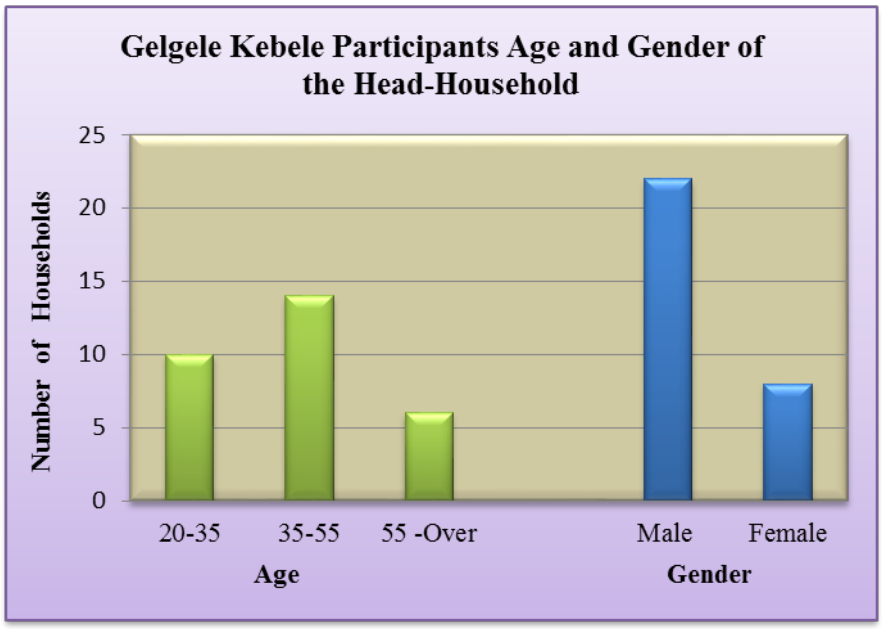
> "*The leadership is doing everything it can to improve the lives of the people by increasing food productivity and food security through the policies and we are now implementing these policies on the ground"* (CAADP Policy Officer 2013).

Most of the Ethiopian population lives in rural areas and are dependent on the agriculture products; this policy is therefore very significant for the people who are the recipients of the policy. According to the finding from this study, the policy is very much top-down, and the implementation process is very efficient in reaching the people on the household level.

Through the identification of the potentially rich agriculture areas, the Ethiopian Government ATP policy focuses on transforming the agriculture sector by mainly engaging the small scale farmers, through the intensification of their food production methods. This is done through the adoption of agricultural input technologies such chemical fertiliser, pest-herbicide and improved seeds. This part of the study looks at the adoption of these technologies by the farmers, the effectiveness of these technologies and the delivery of food security based on the assessment from the farmers perspective in the study place.

The following section shows the findings in graph form and discuss the findings that were collected from 60 households in both *Gelgele* and *Yetnora Kebele*s. The graphs are not intended to compare the two villages, but to just show the findings in both villages.

Graph 6.1 Displaying the age and gender of the *Gelgele* head of the household participants.



In the *Gelgele Kebele*, the age of the head of the households surveyed varied from the early 20s to late 70s. However, around 50 per cent of the participants were between the ages of 35-55, about 30 per cent of the head households were between the ages of 20-35 and the rest were over the age of 55. In this village, the majority of heads of households were males, the result showed 80 per cent. The female-headed households were smaller in number and they were the head of the household because the males were either too young, deceased or were working in a city.

The ages of the heads of households were not found to be an issue for the food productivity of the households, as mainly the young people were still present in the area involved in farming. However, the head of the household's gender, mainly the males leaving the village for such as seeking employment in cities have impacted the remaining female headed households. For example, two female participants from the household interview have mentioned that:

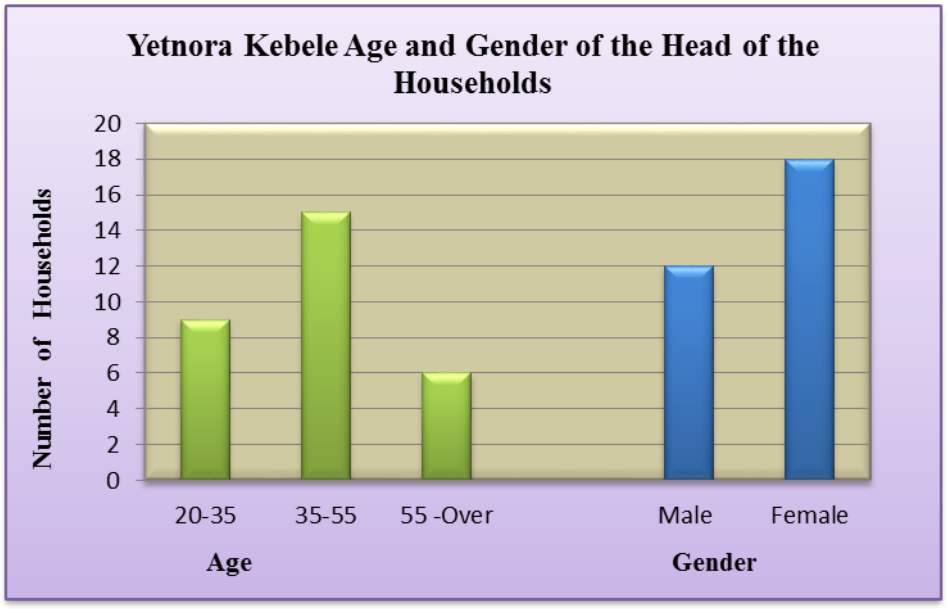
> "*I am the head of the household and it is not easy for me being a woman. Since my husband died I have taken a lot of responsibilities in the house and in the farm, and it is very hard. I have given our land to another man to do the farming and we obviously have to share the crops. Whereas in the past, we used to get all the crops to our self and we had more food available. So now I am waiting for my first son to get a bit older, so he can take over the land again*" (Age 34, *Gelgele* Female Farmer 2014).

"My husband has left for the city because we have taken a loan from the Government so that we could be able to afford to buy chemical fertiliser, and we could not pay it back, so he had to run away to the city as he was going to be arrested. Now I am the head of the household since he has left, and it is hard for me and my children, the male being missing from our family" (Age 30, *Gelgele* Female Farmer 2014).

The female-headed households were less well-off compared to those with the male-headed households. Some of the female respondents have stated that they wished they had a man in the house, as it would decrease the stress and the workload for them. The younger boys also get the pressure to take responsibilities before they reach adulthood. For instance, one young man I have spoken with during the household interview with his mother have mentioned that he has the pressure to protect and provide for his family even when he is not old enough; as his father has left to look for work in the city. He too wants to go to the city as he feels that farming life is hard.

On the other hand, I have had a chance to meet some of the people that have migrated out from *Dejen Woreda* and went to work in the city of Addis Ababa. I have met them through friends, but I had an opportunity to ask them how they have found city life when compare to faming life back in their village. Both people I have had a chat with have said that city life was very hard and not what they thought before leaving their village. Both people have said that they will go back home if they continue to struggle to find work in the city.

Graph 6.2 The age and gender of the *Yetnora* household participants.



The ages of the heads of households in the *Yetnora Kebele* were similar to those of the *Gelgele Kebele*, varying from the 20s to 80s. Most of the heads of households, 50 per cent, were between the ages of 35-55. About 30 per cent were between the age of 20-35, and the rest of the respondents were over the age of 55. In *Yetnora Kebele*, there were more female-headed households, 70 per cent were women and the rest were men. The reasons for most of these females were heads of the household is similar to the *Gelgele* village. Most of the female respondents have mentioned that the males have migrated to the cities.

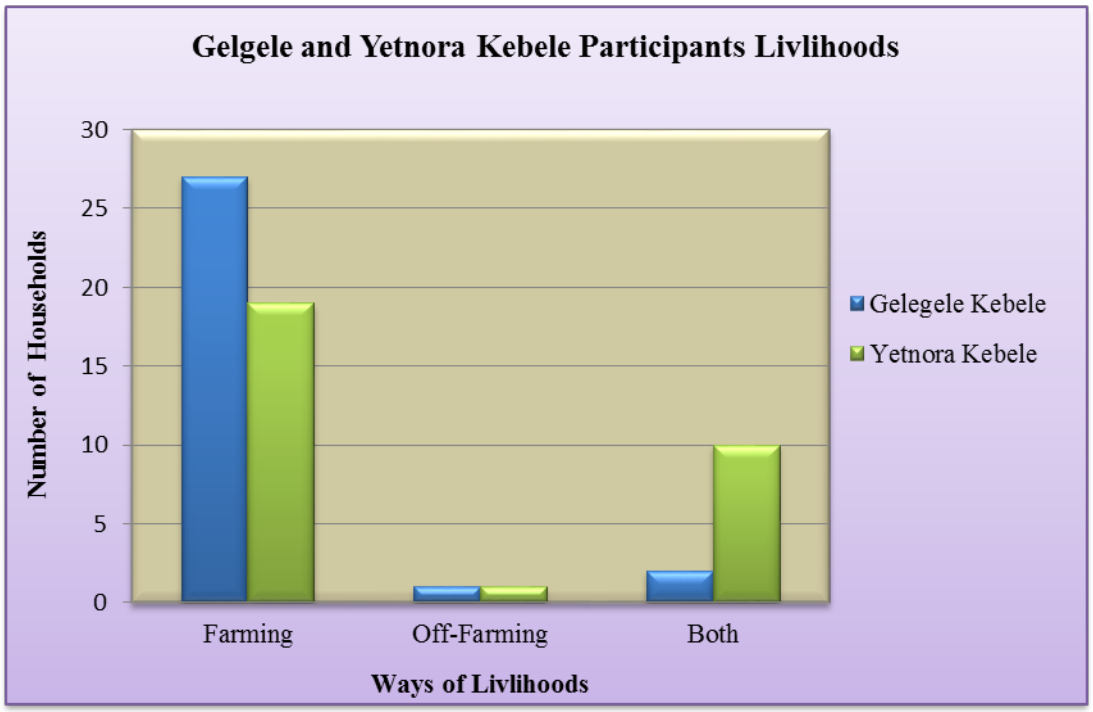
Yetnora is located on the main road, the road that links the major cities of Addis Ababa, Debre Markos and *Bahrdar* and other major towns in the area. It is most likely that the men migrate out to work away from farming in cities such as *Debre Markos*, *Bahirdar* and Addis Ababa. Transport access is very easy to these cities. Two female household participants stated that:

> *"My husband went to Bahrdar to work as a security guard a few years ago and he comes to visit us once in a while, such as at New Year or Easter holidays. We have no sons, so it is me and my 3 daughters looking after each other. Our land is shared with another family who has older sons and they take care of the farming and we share the crops after harvest. I wish my husband was here to look after our land and us, but he thought he can make more money by working in the city"* (Age 45, *Yetnora* Female Farmer 2014).

> "T*here are more female-headed households in this Kebele because our men are leaving to towns and cities looking for off-farm activities. And we have more young men now leaving or migrating out to cities in search for non-farm jobs leaving the people that are very young, very old and women behind, this trend is an issue for us now"* (Age 38, *Yetnora* Female Farmer 2014).

From the ages and the gender of the participants' assessment findings, I have found that the gender issue was more significant in terms of farming activity. Usually in Ethiopian villages, it is the men that go out and undertake the farming activates. Women do help as well but the majority of the farm work is left to the men. Women are usually involved in gardening rather than big field farming such as ploughing. Therefore, when the male becomes missing from the household for different reasons, women take on the male role to take-care of the land or give the land to another man as a share. This was one of the significant issues related to gender in the two villages I have found.

Graph 6.3 *Gelgele Kebele* and *Yetnora Kebele* respondents' livelihood methods.



The *Gelgele* participants' livelihoods show that a significant amount of the interviewees were involved in farming activities and very few off-farm activities were present in this village. In *Yetnora*, most of the participants were also involved in farming activities. There were few participants that were active in off-farming activities. In *Yetnora*, there were more people that were involved in both farming and off-farm activities. The off-farm activities included trading, selling in shops and in markets and day labour jobs in towns.

The women who were involved in the off-farm activities were mostly selling tea, coffee and alcohol in their house, or selling small goods such as soap, sugar, clothes and shoes in a shop. The males who were involved in the off-farm activities were mostly involved in trading crops or goods from one town to the other, or to the cities, tailoring or doing daily labour. The reason these off-farm activities vary in *Gelgele* and *Yetnora* villages is because *Yetnora Kebele* is located on the main road area, and also gets some electricity. This helps improve diversification. On the other hand, as *Gelgele* is on the lower land, mostly mountains, there is no road access and electricity is non-existent in this *Kebele*. One 35 year old woman participant from *Yetnora* and another 27 year old woman from *Gelgele* villages have emphasised that:

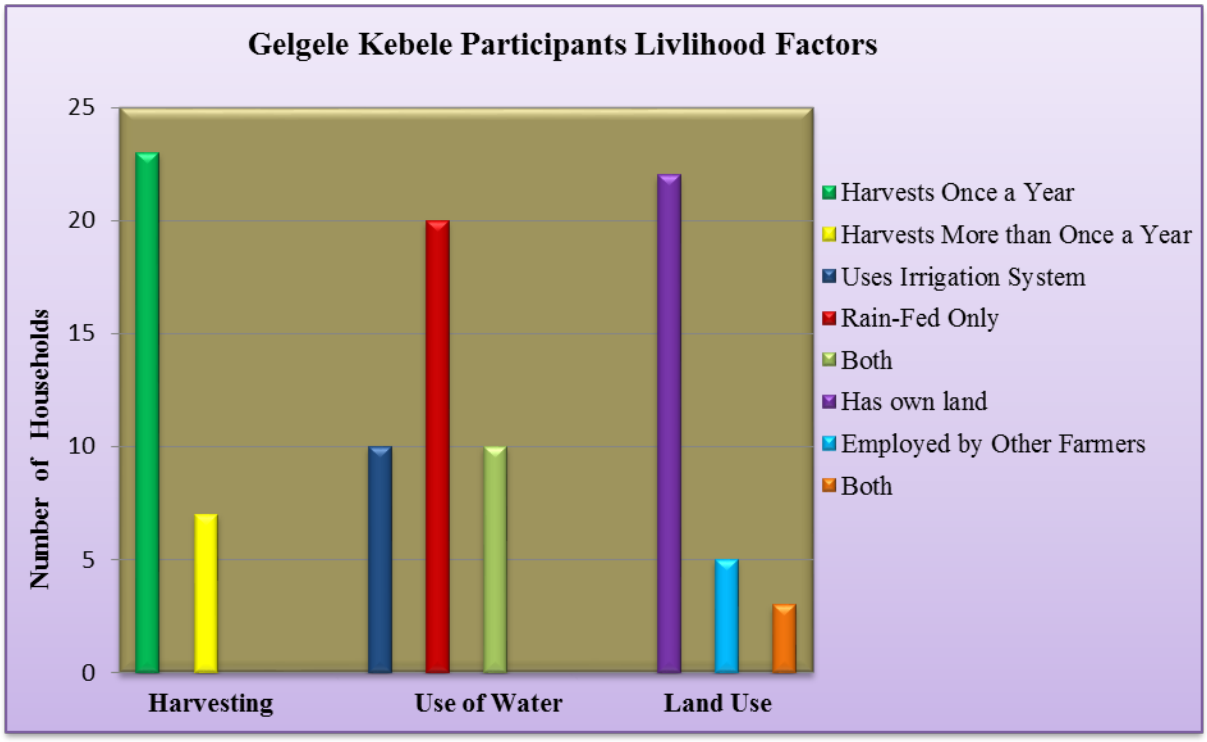
> *"I have a shop by the main road, and in my shop I sell bottled water, snacks and many other small goods. This is a good business for me because I get lots of customers from the cars passing form Addis Ababa to Bahrdar and so on. I also get electricity access*

as it is near the road and I can use a fridge as well to help cool the bottled water" (Age 35, *Yetnora* Female Farmer 2014).

"It is very hard to be involved in off-farm activities in the Gelgele area, for example if you open a shop you will have very few customers. Most people buy their goods when they go to Dejen town, because here there is no electricity and bad road links from one place to another, it is so rocky, hilly and most people make their journey even to Dejen town when necessary only" (Age 27, *Gelgele* Female Farmer 2014).

Livelihoods in the two villages were very similar. One factor that was visible was that most farmers in both villages were involved in farming activities. Very little off farm activities were visible mainly in *Gelgele* village; but in *Yetnora Kebele* due to better road and electricity access, there were a bit more diversification opportunities presented for the residences.

Graph 6.4 Reflecting on the *Gelgele* participants' livelihood factors.



The finding presents the *Gelgele Kebele* livelihood factors such as harvesting, the use of water resources and the participants' ownership of the land they were cultivating. Most of the respondents use rain-water and produce mainly once a year. However, there were some exceptions where some farmers use an irrigation system and produce more than once a year. These farmers mainly live near a small river or spring water area.

The irrigation system mainly is used for gardening; producing vegetables such as onions and cabbage and not for big farm crops such as wheat. In Ethiopia, land belongs to the Government, however farmers are allowed to have ownership and they can pass it on to their family members, such as their children. The results above show that most of the farmers work on their own land in *Gelgele Kebele*. Some respondents have also mentioned that they have their own land but they also additionally work for other farmers, mainly on single women's or older farmers' land.

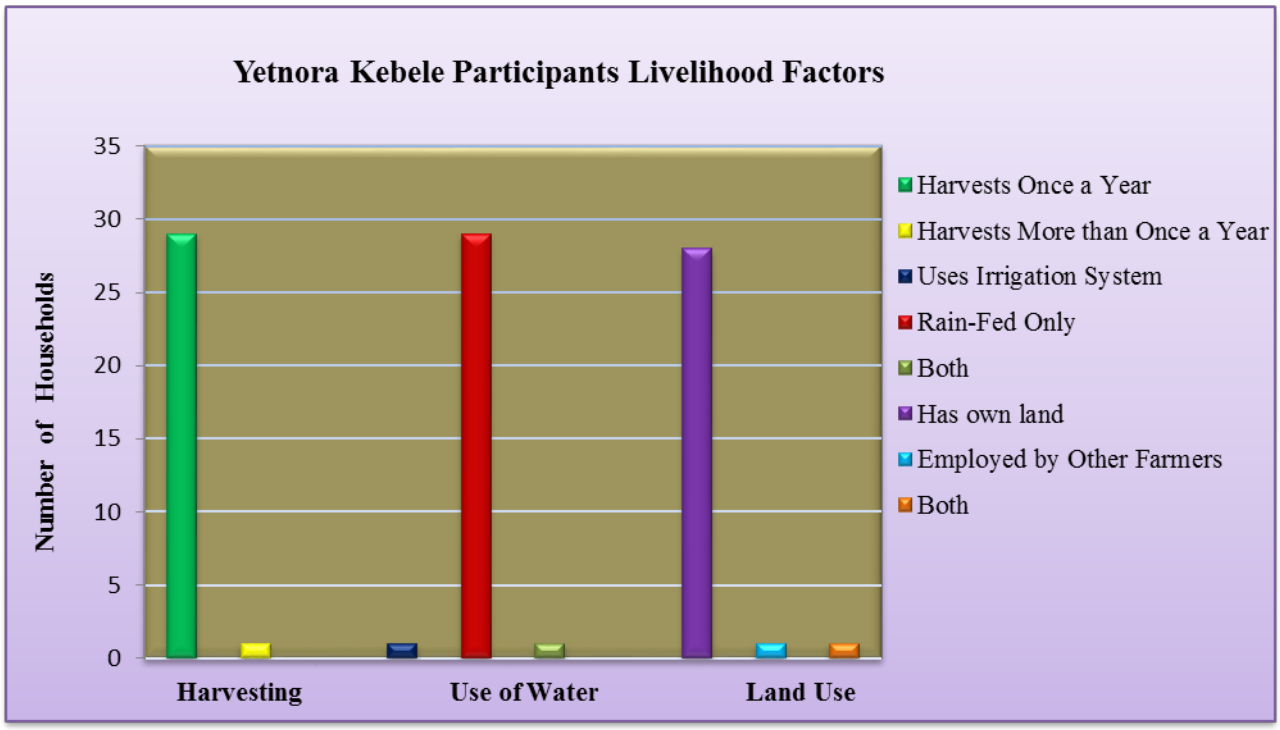
Moreover, some farmers have mentioned that they do not have their own land and they work for other farmers, mainly for those who are single women or older as they cannot do the job; in this way they share the crop after harvesting. Water management in the village seems to be organised. *Gelgele* is in the lowland; water is very limited and farmers manage the water they have available very well.

Land management is also in place through the group conservation work, such as terracing. The area is very hilly and mostly dry and soil erosion is high; therefore terracing is the main part people are involved in to retain the soil and water when it rains. Energy, for food production is animal power and human power predominantly. There is no electricity power in the *Kebele*. For example, two household participants in *Gelgele*, a 45 year old male and a 34 year old man have mentioned that:

> *"Our area is usually vulnerable when it comes to soil and water run-off because it is hilly, therefore we manage our land in a group, and it is called group conservation work"* (Age 45, *Gelgele* Male Farmer 2014).

> *"I have my own land, but it is small and the harvest I get from it is small to feed my family. I therefore work for another farmer, the lady I work for is old and she has no sons to work on her land, we share the harvest as agreed between us"* (Age 34, *Gelgele* Male Farmer 2014).

Graph 6.5 Presenting *Yetnora* participants' livelihood factors.



Similar to *Gelgele Kebele*, *Yetnora Kebele* participants use rain-water for their food production and harvests mainly once a year. Irrigation systems are almost non-existent in this *Kebele*. A very small number of respondents that use an irrigation system have mentioned that they get the water from digging the ground (wells); and they use the irrigation system mainly on their garden and not for crop lands.

Most of the *Kebele* respondents own their own land and farm on it themselves; however, there were some participants who were working both on their own land and also on other farmers' land, to be able to make more harvest. A small number of respondents also said that they have no land and they were employed full-time by other farmers, mainly working for single women or older people and also working in town doing daily labour jobs.

Water management in this area is not very visible, as according to the *Kebele* representative (2014), the area is known for its ground water, but the use of irrigation is very low. However, the land is more or less flat and it has fewer soil and water run-offs. Land management is more active in the area with the flagship programmes. Residents are responsible for participating in activities such as group tree planting. The energy resource mainly used in the area to produce food is animal power and human power. The houses that are close to road links have electricity power but most of the *Kebele* residents have no electricity.

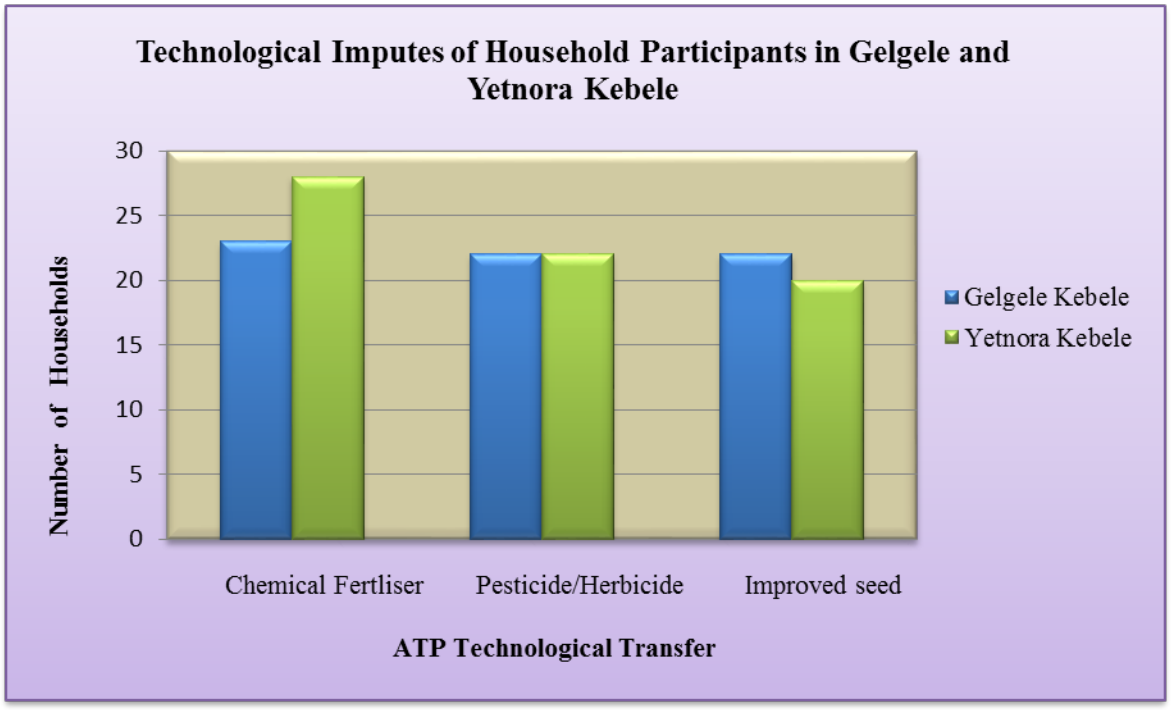
At a policy level, there seems to be no obvious nexus management of the water land and energy resources. However, every household manages these resources in their own ways in their day-to-day life in both *Kebele*s. Despite their efforts, water and land related issues and rural-urban migration are some of the pressing issues mentioned by farming participants. For instance, 58 year old female and 40 year old male participants have articulated that:

> *"We use rain water for our crop cultivation; we have no irrigation system in place. Our land suffers from very low erosion. Deforestation is high in the area, clearing the trees, herbs and plants for cultivation and other reasons. We had more plants in the area before, and it was cooler in the summer, but now the land is clear of these plants it seems very hot because we don't get any shade or coolness from the trees"* (Age 58, *Yetnora* Female Farmer 2014).

> *"I have no land of my own; therefore I work for other farmers, mainly for single women and we share the harvest. Land is becoming increasingly short for everyone to own some, therefore most people are now leaving for cities to look for other ways of life. I might go as well soon; because I feel that life might be more exciting and I can do different things in the city not just be stuck in one life such as now farming*" (Age 40, *Yetnora* Male Farmer 2014).

During the time I have spent in the two villages, I have observed that in both villages there were conservation work in place such as terracing and tree planting. The water and land management system seem to be presented in the villages as people were managing these resources as groups and as an individual level in each household. Energy in the area related to farming were based on animal power; there were no tractors or electrically powered machineries visible associated with farming in these areas. Most of the people participated in this study were dependent on agriculture for their day-to-day life therefore, land and water are vital elements and people managing these resources in their own way.

Graph 6.6 ATPs technological inputs in *Gelgele* and *Yetnora Kebele*s to increase food productivity.



Part of the ATP plan is to transfer technologies such as chemical fertiliser, improved seed and chemical pest/herbicide to each *Woreda*. Through the *Woreda*s, the *Kebele*s adopt the programme using extension workers. Graph 6.6 shows that both *Kebele*s have adopted the policy and were using the technologies provided by the Government. In *Gelgele*, 70 per cent and in *Yetnora* 80 percent of the participants were using chemical fertiliser. A further 70 per cent of the respondents in both *Kebele*s have adopted chemical herb/pesticides. Moreover, 73 per cent in *Gelgele* and 70 per cent in *Yetnora* villages, participants were using improved seeds in their land to be able help them increase food productivity.

According to the *Gelgele* and *Yetnora Kebele* representative officers, the policy has many success stories. More farmers were becoming more productive using the technologies that the Government was providing through its agricultural extension system. For instance the *Dejen Woreda* ATP representative stated that:

> *"The technological inputs are working very well for the farmers. Farmers now can sell more of their crops, get an income and be able to afford to buy other goods to improve their livelihood"* (*Dejen Woreda* ATP Representative 2014).

There were a number of challenges in implementing this policy says the *Woreda* ATP representative. For instance, some farmers were not receptive to the policies the Government introduces; they were reluctant to use these technologies. He added that the authorities try its best to encourage them to adopt the technologies. The *Zone* ATP representative has mentioned that:

> *"We have a national plan to increase food security at the country level and the more farmers that participate in the programme, the better for the country as a whole, so sometimes it is not a matter of choice for the farmers, it is a must that they follow the ATP"* (*Zone* ATP Representative 2013).

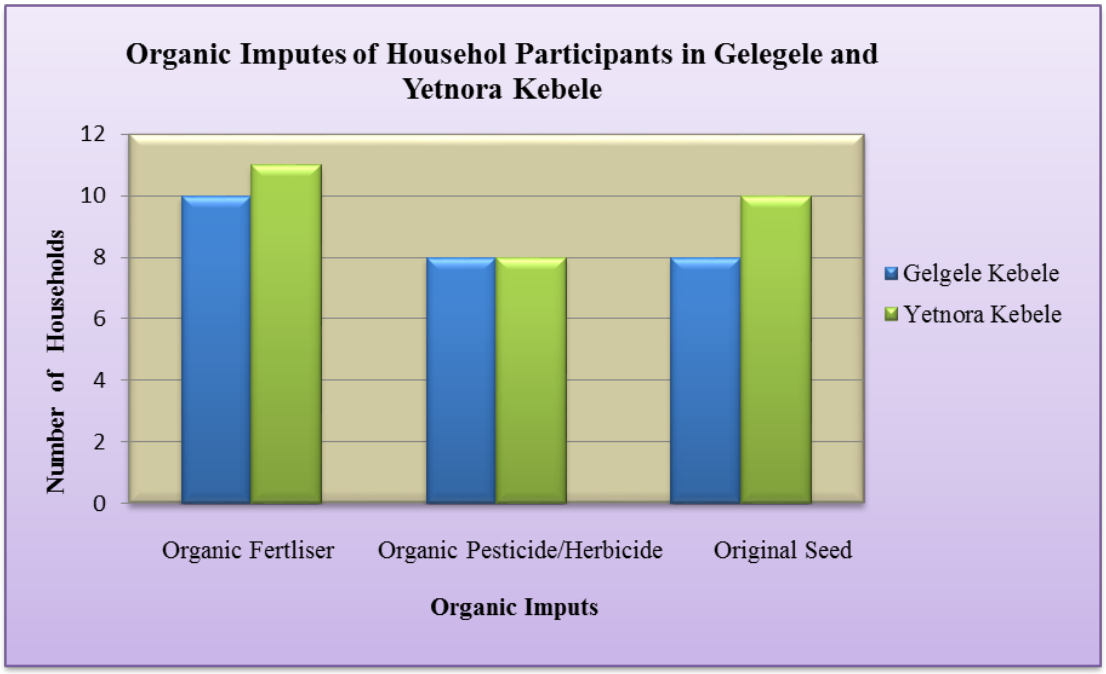
The *Kebele* ATP representatives also stated that the policies in place, in order to increase food productivity through using the agricultural inputs, were working great. Because there was a lot of evidence showing that the farmers were indeed increasing their productivity. However, the Government was only emphasising the production, and not the quality of the food people produce and con A male farming interviewee in *Yetnora* emphasised that:

> *"We are actually seeing an increase in the food products after using the technologies. However, just because you are producing more food, it doesn't mean that you are food secured" (*Age 48, *Yetnora* Male Farmer 2014).

Policy implementers at the ground level in both *Kebele*s have a positive outlook related to the agriculture technological inputs. They were convinced that every farmer must adopt these technologies because without these inputs the land is too degraded to be able to give the farmers the harvest they need by the end of the year. The *Gelgele Kebele* representative stated that:

> "*The land in this area has been over used; soil erosion and deforestation are factors that have made the land in this area even further degraded over the years. For this and many other reasons, we must convince the farmers to adopt the agricultural technologies presented by the government in order to increase crop productivity"* (*Gelgele Kebele* Office Representative 2014).

Graph 6.7 Agricultural inputs of non-chemical and the original seeds in the *Gelgele* and *Yetnora Kebele*s.



As discussed above, graph 6.6, most of the participants were using the technologies provided to them through the ATP and its extension system at the ground level. This is due to the fact that the technologies were giving them more harvest; increasing their productivity. Very few households that participated in this study have said that they were using organic fertiliser such as compost, the old (original) seeds and organic pest/herbicide. For instance, 30 per cent participants in the *Gelgele Kebele* have mentioned that they were still using the original seeds and not the new mixed seeds because the land would not respond to the new seeds. It was also clear from the findings that the costs of these new technologies were too high and those who cannot afford it also use the traditional seeds.

The use of organic fertiliser was low in both villages. According to the farmers, they were not using the organic fertiliser, such as compost because this method is time consuming and energy intense; and many people use compost only for gardens. In *Gelgele*, 33 per cent and in *Yetnora* 35 per cent participants were using organic fertiliser. In both villages 33 per cent respondents were using organic way of pest control system. According to farming participants, the chemical pest control system method needs training and also they have found it to be dangerous for their health and the non-targeted groups such as plants and animals. One male participant from an in-depth interview in *Yetnora* and two female farmers from a focus group discussion in *Gelgele* stated that:

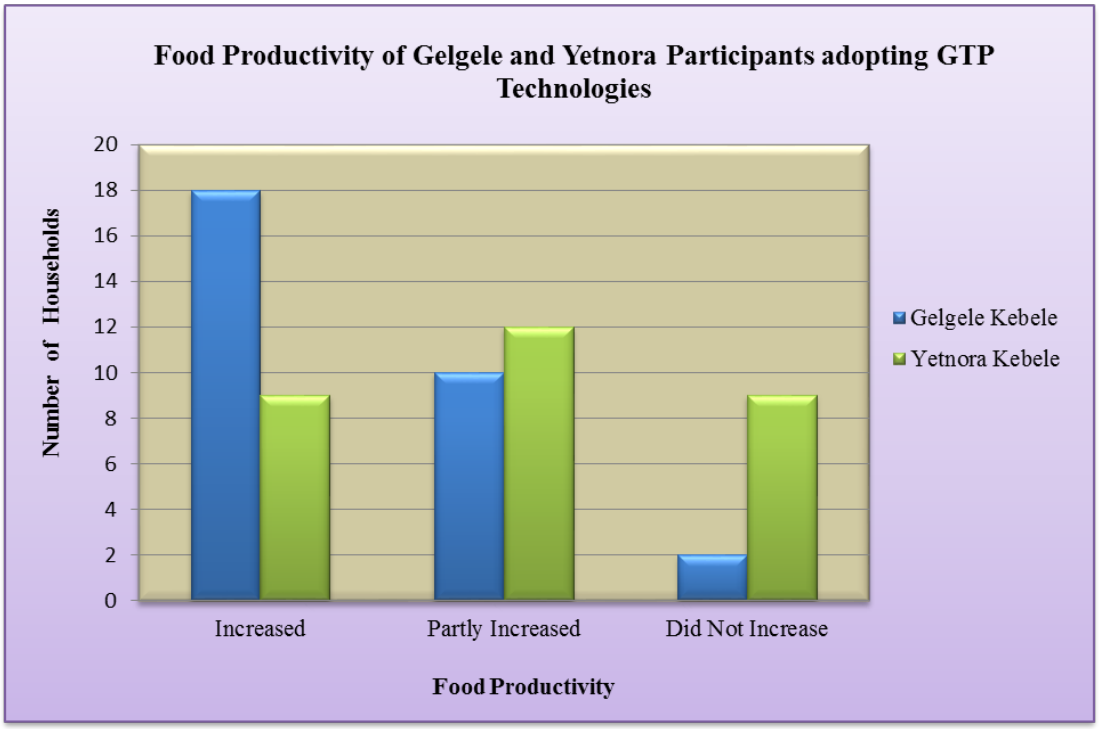
"I use the technological inputs because I can afford it, and I also know that it gives me more products compared to using the organic method. So I get more out of my land, I sell more, I earn more and with them money I make, I can do more things such as go to the city, so I am thankful to the government for bringing these changes to our area". (Age 48, *Yetnora* Male Farmer 2014).

"I cannot afford these technologies that we must now adopt through the extension system. These inputs are so expensive and it is not sustainable, because one is that the land is addicted to it and without it, it gives you nothing, and two is that it gets more and more expensive every year so you must be able to get that money from anywhere just so that you can afford it. This is like a prison; this might be working for the wealthy farmers' because they can afford it no matter what and they have the extra money to be able to move even to the city if farming doesn't work for them, but for the average farmers like me, it is a trap" (Age 33, *Gelgele* Female Farmer 2014).

"We have to use the three inputs together, the chemical fertiliser, herb/pesticides and improved seeds in order for the crops to be more productive. We feel like it is a sale, we must buy the three together, they are using us to sell their products and this is making us trapped by the Government" (Age 25, *Gelgele* Female Farmer 2014).

From the data gathered, it was clear that the ATP is in place in both villages; and farmers are adopting the policy through the use of the technologies provided for them in order to increase their food production. Farmers have expressed that there are opportunities and challenges in using these technologies; one of the opportunities expressed by the people was that increased food production. However, great concerns have been raised by the farmers related to the cost of the technologies and the dependency on it. There was very little policy related work to encourage organic farming in the villages.

Graph 6.8 Using the GTP technologies level of food productivity of *Gelgele* and *Yetnora* households.



One of the main objectives of the Ethiopian Government is to increase food productivity through the transformation of technologies such as chemical fertiliser, chemical pest/herbicide and improved seeds. The Government believes that through the use of these technologies, the farmers would be able to increase crop productivity and eat at least three times a day and increase their food security status. The technologies according to the respondents have helped them increase their food production.

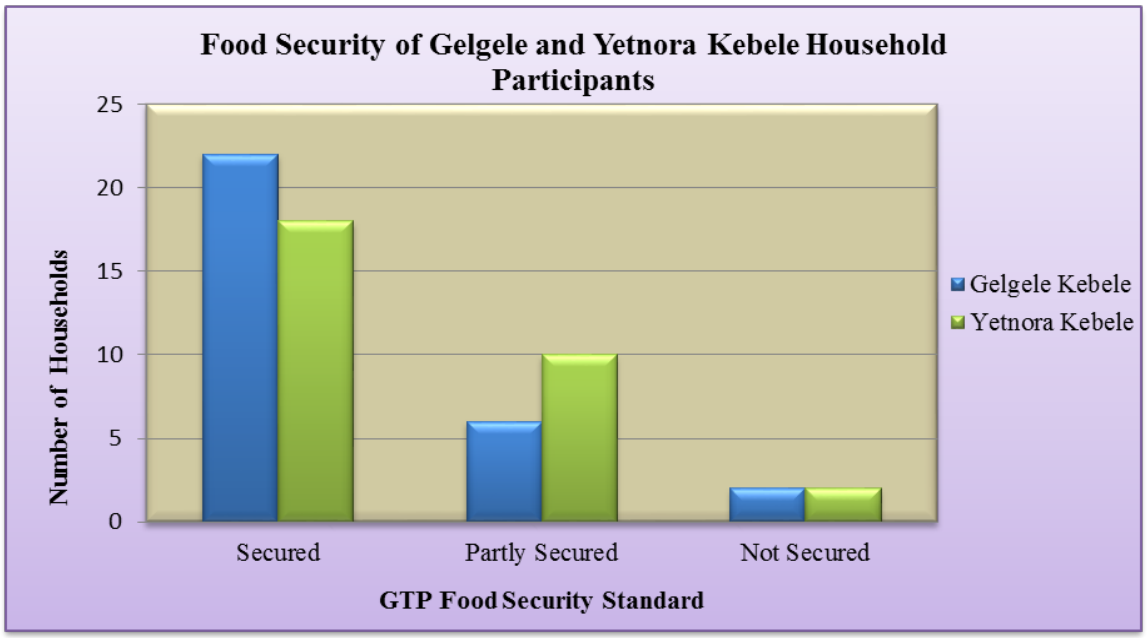
The *Gelgele Kebele* respondents have mentioned that the technologies have contributed to the increase of their crop productivity; however, the number was lower in *Yetnora Kebele*. Around 80 per cent of the respondents in both villages have stated that the use of the technologies was extremely expensive and those who can afford it could increase their productivity. If the farmer has low income and cannot afford to buy the technologies, if the land also is too degraded and the participant is also too old to maintain the land; these factors contribute to the low productivity rate in the villages. A 47 year old male participant from *Gelgele* and a 34 year old female *Yetnora* household interviewee stated that:

> *"Food productivity is improving for most of the farmers to buy and use the technologies wisely. It is very good because it does work in giving us more crop harvests" (*Age 47, *Gelgele* Male Farmer 2014).

*"My sons are both working in a city; they did not want to be farmers anymore because life here is getting harder and harder, life in the village is not like what it used to be, like when I was young. When I was young, we did not worry much about what we are going to eat next, if the land would be productive or that we must buy something to make the land productive. Nowadays, it is extremely hard so my sons have migrated to the capital city to look for a better life. I am too old to manage my land so I just get what I can and survive really, I wouldn't call this living, but surviving. My only hope is that one day my sons will have jobs in a city and they will take me there and look after me, farming is finished for me (*Age 34, *Yetnora* Female Farmer 2014).

The findings in these villages related to food productivity using the technologies provided under the ATP show that most farmers did increase their productivity. This was from the farmers' perception and also from my observation. I have observed that farmers were rushing to purchase fertiliser and there were very keen in having it on hand as it was one of the key assets to use on their farm lands to be productive.

Graph 6.9 State of food security of the respondents of *Gelgele* and *Yetnora* households according to the ATP Food Security standard (based on eating three times a day).



The graph above is showing the state of food security of the household respondents according to the ATP food security standard (based on eating 3 times a day). As shown above, 70 per cent of the respondents in *Gelgele Kebele* were eating three times a day; food productivity was high even though there was less off-farm activities. In *Yetnora* 55 per cent participants were food

secured. About 30 per cent in *Yetnora* and 20 per cent people in *Gelgele* were partly food secured. Less than 10 per cent in both villages were food insecure due to the lack of crop productivity and the lack of off-farm activities.

The majority of the *Yetnora* Village participants were also eating three times a day; this is due to the off-farm activities in the area. The number of respondents that were partly food secured or food insecure was less compared to those who said they were secured. These people were food insecure due to factors such as the lack of land productivity, owning no farmland or too old to be involved in an off-farm activities.

Food security here has been assessed according to the standard set by the Government; and not based on the quality of the food people consume and the farmer's perspective of what it means for them to be food secured. This has been discussed in more detail in chapter 7. Food security varies from household to household. However, using the Ethiopian federal measurement method based on eating three times a day, the state of food security was high in both villages.

For instance, a 37 year old male farmer from *Gelgele*, has mentioned that he is now using the technologies the Government is providing (selling) in the area, such as improved seeds, chemical fertiliser and pesticides. Using these technologies, he stated that he has been able to increase his productivity and provide meals for his family at least three times a day. However, he has mentioned that the quality of the food his family consuming was becoming an issue.

There is a great need for research in the quality of the food people produce and consume and not just the quantity they produce and eat. According to a *Dejen Woreda* representative, the well-being of the people related to food security is not just about quantity, it is more with the quality of the food people eat as well. He added that if people are eating a well-balanced healthy diet and are capable of achieving that, it increases their well-being. For instance the *Dejen Woreda* key informant participant emphasised that:

> *"I believe that we are focussing too much on food production and not the quality of the food people consume. We could say that people are food secured because they are productive and they eat three times a day. But how do we measure food security based on the quality healthy food people consume? Food security is not when you eat in more quantities, but it is when you eat quality healthy food; as this will increase your activeness, your health and general well-being" (*Age 59, *Dejen Woreda* Key Informant 2014).

The farming participants have expressed some of the challenges they have faced related to the ATP policy in place. A 45 year old farmer from *Gelgele* village, stated that first of all, the technological inputs are extremely expensive. When the Government first introduced it, it was very cheap and most of the farmers adopted it, because most farmers want to increase their productivity. Secondly, after a few years of using the technologies, the soil has become more "*addicted*" to these inputs and without it, it gives even less crop than before. Therefore, if people cannot afford the technologies and their land is used to it, they will suffer in many ways. The 56 year old male farmer from *Yetnora* added that the technologies are great if the farmers can afford them. He articulated that:

> *"These technologies do increase our products no question. However, there is a catch. Not only they are extremely expensive and our land is heavily dependent on them, but we are also losing our original way of life and becoming more dependent on a system, this is now becoming clearer, because we see the evidence. Whereas before, we were blinded by the beauty of these technologies the leadership presented us with, now we see the reality and it is not pretty and it will get even more ugly in just a few year time. This makes me sad and depressed" (*Age 56, *Yetnora* Male Farmer 2014).

Farmers have said that even though the technologies in place have helped them increase productivity, it has also created some major issues. For instance, farmers must use the chemical fertiliser, chemical herb/pesticides and improved seeds together. Those who cannot afford it were becoming more destitute. As a result, there is now a gap between the rich and the poor farmers based on who can afford to buy the technologies and be able to produce more, sell more and get more income.

Participants in both villages have mentioned that when people cannot afford these inputs, they usually borrow money from the local lending agencies, and if they could not pay it back on time, usually they migrate out to cities and towns in order to look for other ways of livelihood and hide from being arrested. The 80 year of female farmer from *Gelgele*, stressed that from her experience, the old ways and the new ways of life are extremely different. She sees a struggle coming as the farmers were becoming more dependent on technological inputs. These inputs are useful; however, they are also causing them many problems. For instance she expressed that:

> *"We are slowly losing our traditional seeds, our land is also used to chemical fertiliser and without it the land is not productive. We must always use chemical fertiliser, it is*

*extremely expensive and a lot of us even get in to debt to be able to afford it. Most importantly, the food we now eat using these improved seeds has no taste, no smell, it just feels empty and we are losing our old ways. Fertiliser has destroyed our land; if I have the energy I would only use organic fertiliser. But this food we now consume is so artificial and it makes us weak, more people have less energy these days compared to the old days and I believe it is related to the food we eat. And not many people have that energy to work on their farmland to make it organic, such as through using compost" (*Age 80, *Gelgele* Female Farmer 2014).

Through the transformation of the farming methods of the small-scale farmers, food security has been increased based on the people eating at least three times a day. The farmers have expressed that, yes, they manage to eat at least three times, but this does not mean that they are food secured. Food security for these farmers has a very different approach compared to the Government's approach. For instance from in-depth interviews with a female *Gelgele* farmer and a male *Yetnora* farmer they articulated that:

*"Yes, my family and I, we manage to eat three times a day, but does it mean we are food secure? No we are not. The food we eat, the nutritional value and the variety of the food we consume mainly gives us the food security. This is also having the food we need in confidence, have easy access, entitlement and freedom in getting it. These factors are not being considered by our Government" (*Age 35, *Gelgele* Female Farmer 2014).

*"Food security for us is not eating just anything three times a day. It is having access, entitlement and freedom to the good food we need" (*Age 30, *Yetnora* Male Farmer 2014).

More concerns have been raised by the farming participants in both villages concerning the decline in the quality for the food they are now getting or consuming. Most farmers relate these changes to the new technological inputs they are now using such as improved seeds. They are convinced that it needs to be taken seriously by all members of society, as it is a serious issue. A *Yetnora* farmer respondent mentioned that:

"Before we started using the technologies, the crop harvests we used to get were smaller, however, when we eat the crop products, it was very filling, tasted better and used to give more energy. But now we are eating more in quantity to get full, the food seems to have less value in terms of nutrition and people are feeling weaker or getting

*tired very easy. But when we raise our concern to the local authorities, nothing gets done, they only want us to do what they say, but when we raise an important issue, nothing changes" (*Age 50, *Yetnora* Female Farmer 2014).

The study at this level has found that the policy does only flow in one direction; policy process and implementation process is very much top-down. The policy plan does not incorporate bottom-up level policy and there were very little to almost no policies emerging from bottom-up-level. The policy focuses mainly on the quantity of food people produce and consume; but very little attention has been given to the healthy nature and quality of food people consume that helps increase the people's well-being. When concerns are raised by the farmers, it does not get far, as the bottom-up approach is very weak to non-existent. A *Gelgele* farmer participant stressed that:

"We have to meet very often in our Kebele to discuss this ATP outcome, the issues we have and so on. When we raise our concerns, issues and difficulties, we hope that it reaches the policy makers and some changes will come to us, to fix the issues we raise. However, nothing ever changes, it is only one sided, the government tell us what to do but what we say gets no attention from our leaders. This is frustrating; it makes us feel that this plan is not for us perhaps, they might have their own agenda. Because we believe that if it was for us, why not listen to our problems and help us fix them" *(*Age 44, *Gelgele* Male Farmer 2014).

6.5 Conclusions

Food insecurity issue in Ethiopia is one of the main pressing issues for the Government. There is now the ATP policy in place in order to help increase food productivity through the intensification of farming of the small-scale farmers and commercialisation of the agriculture sector. The narrative is that when people adopt the agricultural inputs such as chemical fertiliser, pest-herbicide and improved seeds, they will be able to produce more food and there is more food available for them to be able to eat at least three times a day, and this will ultimately increase their food security status.

From the village level case study findings, it is understood that through the ATP agriculture extension systems, farmers were adopting the new technological inputs in order to help them increase their crop productivity. The evidence in the study places according to the participants is showing that crop productivity using these technologies was increasing. Most farmers were

increasing their productivity if they use all three technologies; chemical fertiliser, chemical herb/pesticides and improved seeds together. It was also clear that these inputs were very expensive and not all farmers could afford them. This was creating a gap between the rich and the poor in the villages.

Rural-urban migration, especially men and among the young people was also raised as an issue in both villages. This was due to the lack of off-farm activities, less farmland availability and life in the farm getting harder for most young people; and the young were migrating out to cities seeking urban jobs or lifestyle. Resource management in the area was visible. There was no water, land and energy nexus management at the policy level; however people were managing these resources according to their needs. Organic farming was a disappearing trend in the villages studied. Most people were using the technologies and they were concerned that their traditional seeds were disappearing. Farmers have claimed that this was putting them in a trapped position.

Policy is also a one direction flow when assessing the ground level. There were almost no policies emerged from the bottom-up level. Farmers feel that their concerns and issues raised to the leadership gets no notice; people feel frustrated and were restricted by these policies in place as they were one direction. Farmers are the receivers of policy they did not initiate.

A priority related to food security by the Government was that of people eating at least three times a day. However, the quality, the nutritional value of the food people consume receives very little attention. Participants have articulated this issue deeply; as they feel that the food they now consume was very different compare to the food consumed before adopting the new technologies. Great attention needs to be paid to this issue by the policy makers as farmers have claimed that it is affecting their well-being.

The next chapter, chapter seven discusses the sustainable food security related to well-being and human development concept by relating it back to the data gathered in *Yetnora* and *Gelgele* villages.

Chapter 7. Sustainable Food Security in Ethiopia: *Gelgele* and *Yetnora* Villages

7.1 Introduction

Food is one of the most fundamental human needs. However, a high proportion of the global population still have difficulty acquiring sufficient healthy food on a daily basis. For instance, according to FAO (2016), around 230 million people in SSA region; and 10 million people alone in Ethiopia are food insecure. One of the objectives of this study was to critically examine what it means to be food secured from the farmer's perspective. In this chapter, I have looked at how sustainable food security increases human-well-being and human development. I first discuss what sustainable food security is, giving a brief description how understandings and different scales of food security evolved. Then, I explore what it means to be food secured for the people of *Gelgele* and *Yetnora*; and how sustainable food security actually relates and affects their well-being and human development aspect from their perspective and by referring back to the relevant literatures.

The concept of food security according to FAO (2010) has been evolving over time; and is now frequently accepted as; "*access by all people at all times to enough healthy food for an active and healthy life*". Food security can be considered at different scales and with different effects. For instance, household food insecurity, individual hunger, child hunger or malnutrition; all require different measurements (IFPRI 2012). In this chapter, I therefore have referred to these different scales of food insecurity or security measurement scales accordingly when I discuss household or individual levels in *Yetnora* and *Gelgele* Villages.

Globalisation is changing the dynamics of food security. The integration of world cultures and global economy may have led to the increases in average incomes globally, but it has also created a wealth gap and greater inequality between the wealthy and the poor (Chopra and Shetty 2004). According to Dercon (2010), globalisation has led to an increase in volatility of the worlds' food prices and this has affected the whole global food system, decreasing human well-being and the scale of human development. The relationship between food security, well-being and human development is great. They are intertwined very closely and their results are co-determined to a significant degree (Conceição *et al.* 2011).

Currently, food insecurity issues have become a main issue parallel with malnutrition studies (Ihab *et al*. 2015). The result of food insecurity can be seen on human health and development. This is through its effects on nutrition and as an element of overall stress on individuals and households. The characteristics of food insecurity includes inadequate quality of nutrients and inadequate quantities of food available for households or individuals (Cook and Frank 2008).

According to Lang (2005), the early to mid-twentieth century was the period which preserved the productionist paradigm and for which nutritional evidence has become so influential. In recent years, there have been changes from farm-to-plate in such ways as how food is grown in the global north and south. For instance the mass use of agrochemicals, GMO and hybrid plant breeding has increased both in developed and developing countries. Moreover, Lang added that it is how animals are reared in places such as factory farms, with intensive livestock rearing and the use of pharmaceuticals to increase weight gain that has changed drastically in recent years in the global food system.

Food security has been one of the top agendas of the development debate for a while now, and it is likely to stay as a main development issue for the developing world (Conceição *et al*. 2011). The United Nations High Level Task Force on the Global Food Security Crisis in April 2008 has been created in a reaction to the global food price crisis. This Task Force brought together 22 UN agencies under a common comprehensive framework for action. A year later, the Group8 meeting in L'Aquila has also addressed the challenges of global food security. The Group8 Heads of State promised $20 billion over 3 years and settled to a cooperative approach to enhancing food security. The Group20 Summit in Pittsburgh, in September 2009, at additional country initiates brought the total spending to $22 billion. The Rome commitments made at l'Aquila have also lent significant support to African programme, for the CAADP framework (Conceição *et al.* 2011).

However, how are all these food security policies and promises that have been given to the people on the ground by the policy makers at the high level actually improve people's food security status? Do they really lead to sustainable food security making a difference for people on the ground in relation to increasing well-being and human development? From this PhD study, I contribute to the current relevant literatures the relationship between high level policies; made by elite individuals and these policies reaching the people on the ground without their knowledge and having to implement it whether they like it or not. How the policy makers

and the people on the ground see food security differs hugely in Ethiopia from my findings in the study villages.

The current food security policies in place now from the perspective of the participants is far from effective in bringing sustainable food security for them. The policies are in fact affecting their well-being and there is huge concern and frustration towards the politicians in Ethiopia from the farming community. The following section discusses this in detail by referring back to the participants in *Gelgele* and *Yetnora* villages.

7.2 Sustainable Food Security, Well-Being and Human Development

Through using (figure 2.2) diagram, the food access, availability, entitlement, freedom, quality and utilisation factors and the human-needs, capability and freedom to choose concepts the links between sustainable food security, human well-being and human development is discussed below. This assessment was based on the farmer's perspective I interviewed in *Gelgele* and *Yetnora* villages.

In the Sub-Saharan Africa region, the food insecurity issue is often characterised by extensive and constant hunger and malnutrition as well as regular and severe food crises and political issues (UN 2009). The very basic policy making of food security by the African Union and the Ethiopian Government is that, food security is directly linked to food production. The reason why millions of people are food insecure today in Africa including Ethiopia as it is stated by the policy makers is that it is because there is not enough food being produced in the continent. However, evidences are showing that there is enough food being produced and is available in the African continent, including in Ethiopia (Negash 2013).

In recent years, it is increasingly becoming evident that food insecurity occurs as a result of a failing global food system. Misselhorn *et al.* (2012) stated that a food system that disables people from accessing sufficient and nutritious food that is already available such as in markets. This food system has trapped millions of people from accessing the food they need as a result of mainly because people have low incomes or the food price is too high or both for political reasons, discrimination or unstable socio-economic factors. For instance, the relationship between food prices swell and the number of food insecure individuals increase has been witnessed by the effects of the 2008 and 2012 global food price rise (IFPRI 2012). For people

to be resilient enough to deal with such as economic recession, food must be affordable and easily accessible (Misselhorn *et al*. 2012). The food security definition agreed at the World Food Summit in 1996 is that:

"*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 a healthy and active life"* (World Food Summit 1996).

According to Pinstrup and Andersen (2009) the addition of "*safe and nutritious*" emphasises food safety and nutritional composition; whereas the addition of "*food preferences*" changes the notion of food security from "*easy access*" to "*enough food*", to "*access to the food preferred by individuals and households*". This shows that individuals with equal access to food, but different food choices, could indicate different levels of food security. Pinstrup and Andersen (2009) added that:

"As long as the term preferences is interpreted to mean foods that are socially and culturally acceptable and consistent with religious and ethical values, rather than a broader interpretation to mean a household or individual preference" (Pinstrup and Andersen 2009, p. 6).

In recent years, according to Cook and Frank (2008), research literatures have confirmed a range of health and development outcomes that are adverse related to food insecurity. It has been found that poor physical and mental health are directly related to insufficient food intake (Cook and Frank 2008). In Ethiopia, it is understood that low levels of available mineral nutrients in soil, poor soil fertility, weak soil nutrient management combine with the lack of plant genotypes having toxicities or high tolerance to nutrient deficiencies are the main restraint factors that are contributing to low nutrient intake (Cakmak 2002).

Some of the people that have participated in this study have been expressing their concern related to the food they are now consuming and the technologies they are using to produce food. This was based on their own perception about what sustainable food security is. The issue of food quality in terms of nutrition and how this is affecting their well-being; physical and mentally is expressed greatly by the farmers during the in-depth interviews. For instance, both in the *Gelgele* and *Yetnora Kebeles*, participants have expressed that the content of the soil is changing due to the use of the agricultural inputs, such as chemical fertiliser. For instance, a 52 year old female participant from the *Gelgele* and a 60 year old man from *Yetnora* villages have stated that:

*"The chemicals we now use in order to grow our food, such as fertiliser are affecting our soil. Our soil does feel lighter, it used to be heavier for instance when we ploughed it. We believe that the chemical is eating away the nutrients that are in the soil and I think that this makes the crops nutrient deficient and the food we eat gives us insufficient nutrients at a household level" (*Age 52, *Gelgele* Female Farmer 2014).

*"We have started to feel that the quality of the food we are now consuming is decreasing for different reasons. One thing I can say is that this might have something to do with the new improved seeds we are now using to produce food" (*Age 60, *Yetnora* Male Farmer 2014).

This issues the farmers raised which was "*food quality*" during the interviews is very significant, and scientific research must be done to measure the food people are now consuming and the technologies the farmers are using to produce food such as the improved seeds and chemical fertiliser in Ethiopia. Concerning this issue mentioned by the farmers, I have raised this to the policy makers at the federal level; and the response was that the Governments' priority was to make sure people were eating at least three times a day. The quality of the food raised by the farmers was stated by the politician "*too fancy to think about that now*".

Food insecurity can be understood simply as deprivation in the basic need for quality food (Tarasuk 2001). The table below 7.1 explains the individual and household level dimensions of food insecurity from qualitative research.

Table 7.1 The individual and household level dimensions of food insecurity, Source: Radimer (1990).

	Individual level	***Household level***
Quantitative	Insufficient intake	Food depletion
Qualitative	Nutritional inadequacy	Unsuitable food
Psychological	Lack of choice, feelings of deprivation	Food anxiety
Social	Disrupted eating patterns	Food acquisition in socially unacceptable ways

At a household and an individual level, food insecurity is experienced in different ways. At an individual level, it is an experience related to issues of food consumption and allocation and when a person feels the physiological sensation of hunger. On the other hand, food supply management and possession issues characterise the household food security circumstances (Campbell and Desjardins 1989). According to Radimer *et al*. (1992), the experience of food insecurity is not static in nature. It is active and is defined by experiences, events and frequency.

The main notion of an individual or households' food insecurity is the concept of food being scarce or its deprivation. For instance, such as the physical sensation of hunger at the individual level which is going without food for a long time. Moreover, issues related to food quality associated with food insecurity have been represented by consumption patterns apparent to be nutritionally inadequate (Radimer *et a*l. 1992). For instance, a male participant interviewed from *Gelgele* and a female individual from *Yetnora* villages have stressed that:

> *"I have this sensation of being hungry most of the time even after I ate. I believe it is the food I eat that is not rich in nutrition"* (Age 36, *Gelgele* Male Farmer 2014).

> "*The food we eat lacks the nutritional value, we know this because, we can eat more and still not get full and we get hungry more often in the day after eating lunch. We don't have access to the good food anymore"* (Age 38, *Yetnora* Female Farmer 2014).

Food at the household level, the issue is related to its quality; it is the use of foods considered inappropriate or of lower quality. For instance, the consumption of dangerous foods that are unsafe to eat and foods that lacks freshness because these foods are not available or affordable at home or at local markets (Hamelin *et al.* 2002). The problem related with food insecurity is an issue of both the lack of variety in the food people consume at a single meal and the lack of variety between meals. A *Yetnora* villager stated that:

> "*We eat the same kind of food every day we don't have the cash to buy other kind of food to fill that nutritional gap*" *(*Age 50, *Yetnora* Female Farmer 2014).

At its most rigorous stage, food insecurity is experienced as a complete food deprivation, for instance a person not eating all together. At the individual level, food insecurity is linked to feelings of deprivation or lack of option (Radimer *et al.* 1992). A male *Gelgele* participant and a female interviewee from *Yetnora* have stated that:

*"Food is supposed to be a basic need, but our freedom and choice has been restricted in accessing the quality food we need for sustaining well-being" (*Age 35, *Gelgele* Male Farmer 2014).

"Actually there are foods that have good value to us, but it is strange that somehow we are selling that to the traders that take food to the capital city to make some money, and we buy lower quality foods at a lower cost. F*or example, many of us here produce our own food oil; it is really good quality, we don't even use that for ourselves, we sell it local traders and we buy the very cheap foreign oil that comes in plastic bottles in our village. This oil is really cheap, and it is also really poor quality. We buy it to save money and I am sure they will sell our good quality oil at a more expensive price in the city. So somehow even when we have the good food, we feel that we have no options but to consume lesser quality food, it is strange but this is what is going on now here (*Age 40, *Yetnora* Female Farmer 2014).

Campbell and Desjardins (1989) stated that the experience of individual food insecurity within a household varies greatly. For instance, adults especially tend to compromise their own food intakes first in an effort to reduce the extent and nature of compromise experienced by young people such as small children in the household. Situations like this shows that food insecurity can be a managed and a controlled process. A *Yetnora* and *Gelgele* farmer interviewees expressed that:

"*My children are my priority, the foods we have available in the house, I make sure my children eat first, and it is then after I eat" (*Age 24, *Yetnora* Female Farmer 2014).

*"We tend to eat our breakfast, lunch and dinner together as a family. But usually, the small children, we make sure they are full, because as adults, we can manage if we are hungry from not being full" (*Age 30, *Gelgele* Female Farmer 2014).

Food insecurity and hunger are particularly linked to limited household resources. Therefore, by description they are referred to as "*resource-constrained*" or "*poverty-related*" conditions. Resources that are related to economics are such as income gained by household members and additional resources provided by for instance public and private safety-net programmes to households (Cook and Frank 2008). Household food insecurity is also related to uncertainty or anxiety about the sufficiency and continuity of food supplies (Radimer *et al.* 1992). The concept of food anxiety is linked with the stress about access to adequate food and food availability among food insecure households troubled with being able to continue household

food supplies and have sufficient food to eat (Tarasuk and Maclean 1990). A 36 year old female *Yetnora* farmer stated that:

> *"Food is always in our mind, we worry whether we will be getting enough food for the day, for next week, next month and so on. We don't have that confidence about our food security, we feel restricted and no freedom to acquire the food we need that will last us a while without stress" (*Age 36, *Yetnora* Female Farmer 2014).

Timmer (2012) cited that:

"People are not food secure until they feel that they are food secure, and they do not feel secure when market prices for staple foods are highly unstable. This basic reality of behavioural psychology adds an important expectation dimension to the traditional definition of food security" (Timmer 2012, p.15).

FAO (2009) stated that for an individual, households or communities to have a productive and healthy life, they must have the physical and economic access to adequate and enough food to meet their nutritional needs. Food factors such as availability in sufficient quantities, suitable quality, supplied through local production methods and easy access by individuals, households and communities to adequate resources to obtain suitable foods for a nutritious diet is vital. Moreover, the utilisation of food through adequate diet, access to water, sanitation and health care services must also be met. Each of these food factors can be affected by for instance, the instability of local or global food prices. A more recent thinking has also articulated the risk and susceptibility of poor households to catastrophic and permanent shift in their food security (Timmer 2012).

Timmer (2012) added that in the attempt to prevent food crisis, it is crucial to understand and learn the behavioural dimensions of food security. Food crisis prevention methods are the best methods in avoiding food security disasters; these are for instance mitigation methods such as decreasing sharp rise in food prices and creating stable environments for people. After a food crisis hit, dealing with the consequences becomes the main mission at hand. This is with emergency food aid and other forms of safety nets. A 69 year old *Gelgele Kebele* interview participant emphasised that:

> *"Food crisis prevention methods are better than actions such as emergency aids after it has happened. Through the agriculture extension systems, our Government is trying*

*to work more on long term food security and food crisis preventions" (*Age 69, *Gelgele* Male Farmer 2014).

Long-term food stability plan is part of the ATP policy for the Ethiopian Government. The deep psychological behavioural experiment research findings show that people strongly prefer stable to unstable environments to help them increase food security. This is a very important message to policy makers (IFPR 2008). From an in-depth interview with a 70 year old male farmer in *Gelgele*, and a 27 year old man have stressed that:

*"It is very difficult to have full confidence in our Government. Because, in my time, I have seen the king's leadership, the Derg communist and now the current Government leadership, and they all have different ways of agricultural system. For us to be confident in our leaders, we first must have unity and peace in the country. People are waiting or are worried that this leadership could collapse anytime and another unknown political structure will take place and we will have to start all over again. This affects our well-being" (*Age 70, *Gelgele* Male Farmer 2014).

*"To be honest I have no confidence in this Government at all. We have no right to say what we feel is right for us; and as a young farmer, it hurts me to see the farming community in my area are being suppressed by the leadership physically and systematically. Food is being used as a weapon to keep us under control. We have to follow and do what they say in every aspect of our food system; from farming to marketing and consumption. This affects our well-being greatly" (*Age 27, *Gelgele* Male Farmer 2014).

Persistently, high rates of household food insecurity pose a significant problem, potentially affecting both physical and psychological well-being (Olson 1999). Many studies have been suggesting that food insecurity, especially among young children has adverse health effects, including such as rates of iron deficiency anaemia, severe infection, persistent illness, and mental and developmental health issues (Seligman *et al.* 2010). For instance Melchior *et al.* (2010) mentioned that children that come from poor households that lack nutritious and sufficient food are at high risk of developmental problems.

Food insecurity in a household occurs, when there is restricted or uncertain accessibility of nutritionally sufficient and safe foods or inadequate or uncertain ability to obtain adequate foods in generally acceptable ways. Food insecurity creates low dietary intake in adults and psychosocial dysfunction in children. Moreover, nutritional stunting is one result of constant

food insecurity among young children (Stuff *et al.* 2004). From a focus group discussion in *Gelgele* village, participants have mentioned that:

> *"We are now witnessing a growing number of stunted children in our area, and this is due to the lack of nutrition in the food these children are eating. This is a huge concern for us, but I don't think the leaders are taking this seriously, if they notice it at all" (*Age 58, *Gelgele* Male Farmer 2014).

> *"Child stunt issue has been raised to our local food policy representatives; as we believe it might have something to do with the changes in our food system in our areas. But nothing really gets done by the politicians when we raise an important issue as this" (*Age 40, *Gelgele* Female Farmer 2014).

When food that has low macro and micronutrients is consumed over time, it leads to reduced growth. However, reduced growth can also be due to other factors, such as infection diseases. Kennedy (2002) and Weaver and Hadley (2009) stressed that research in many African countries has not included measurements of non-nutritional results; as assessments in these countries have focused almost fully on the nutritional aspects of the peoples' health issues. This nutritional bias study in some cases is due to the clear biological link between food and nutrition. The nutritional and physical health based perspective potentially makes the impact of food insecurity on other guides of well-being unclear.

Studies propose that one outcome of food insecurity may be related to increased indication of depression and stress (Weaver and Hadley 2009). A full examination of the impact of food insecurity on a range of health including psychological and mental outcomes in Ethiopia is vital and urgent. An individual is said to be experiencing hunger when he or she feels discomfort because of an involuntary lack of consumption of food. Food insecurity is a wider notion that includes not only the lack of food, but also conditions in which a person considers their future food supply may be uncertain and, in the face of this acknowledgment, change their food consumption method or their behaviours (Hamelin *et al.* 1999). For instance in *Yetnora* a female farmer stated that:

> *"Fasting is part of our religion practice; this is not eating food voluntarily. However, these days we fast more not because it is a religious practice, but because we don't have enough food to eat, sometimes we want to save the food for the next day or week, so we eat less food in a day, as a result we feel the sensation of being hungry"* (Age 62, *Yetnora* Female Farmer 2014).

According to Hamelin *et al*. (1999) an individual can be consuming enough food calories but still be experiencing stress over future food or could possibly be adopting different expensive coping mechanisms. Hamelin *et al*. 1999) added that:

> *"Over a period of time, food insecurity can result in under-nutrition through a reduction in macronutrient intakes, micronutrient intakes, or both. One can be food insecure but food sufficient, or food insecure but not undernourished. If one is food insufficient or hungry, then one is food insecure"* (Hamelin *et al*. 1999, p.265).

A female *Gelgele* farmer expressed that:

> *"We are eating what is available to us, not that we have much choice in what we eat. This is because we are losing the diversity of the plant and crop seeds we had and we are increasingly becoming constrained by the seeds available for us to grow our food" (*Age 48, *Gelgele* Female Farmer 2014).

Food insecurity may also be linked with mental health (Mintz and Du Bois 2002). The experience of food insecurity creates characterisation anxiety in the household ecology. Stress can be generated by being uncertain about such as how to meet basic needs like food (Dickerson and Kemeny 2004). For those who do not have much money, there are fewer options available for them. People tend to feel pity for themselves and are in a survival mode. It is related to feelings of being overwhelmed, shame, and acceptance (Weaver and Hadley 2009). Some *Gelgele* participants mentioned that:

> *"I am constantly worrying about food and this creates tension in my life"* (Age 59, *Gelgele* Female Farmer 2014).

> *"I have the confidence in what I produce, what I eat and I plan ahead for my family so that I reduce any issue related to food" (*Age 37, *Gelgele* Male Farmer 2014).

> *"I feel that I am food secured if I think of like this, I eat three times a day, I have enough food to eat, I have money if I need to buy extra food I need for me and my family" (*Age 37, *Gelgele* Female Farmer 2014).

Moreover, some interviewees from *Yetnora Kebele* expressed what it means to be food insecure from their perspective, and described it in these terms:

"*Being food insecure is to have this stress all the time, when you know you have not enough food available in the house for your children, you feel useless, ashamed and not good enough as a parent"* (Age 40, *Yetnora* Female Farmer 2014).

"It is a desperate feeling not having the food you need when you are hungry" (Age 58, *Yetnora* Female Farmer 2014).

"I feel that I have all the means to be food secured. I have a land I can harvest on, I can buy food from the markets when I want to and I make my family's food intake diverse to reduce malnutrition and reduce shame. I am food secured and satisfied" (Age 40, *Yetnora* Male Farmer 2014).

Food insecurity may also be a source of shame. Shame is an important subject that keeps emerging repeatedly in qualitative studies even though it is often one of the least-explored themes (Weaver and Hadley 2009). It is possible that individuals are sensitive to the relative well-being of families in a household and community. When food insecurity is experienced by an individual, it may intensify or enlarge relative differences in well-being among individuals. This could be to the level that people are sensitive to these differences and that relative impact on well-being. Then food insecurity may be a main direct signal of who are the "*haves*" and the "*have nots*" in a community" (Weaver and Hadley 2009).

People that were less-off in *Gelgele* and *Yetnora* tend to compare themselves to others who have enough food and those who can afford to buy additional food if they need to. For instance, on occasions such as weddings or funerals, those who are well-off can feed their guests well, on the other hand, those who are less well-off have not enough food or cannot buy additional food to celebrate their occasions such as weddings, and as a result they feel ashamed. Farmers, one that was well-off and another that was less well-off from *Gelgele* have stated that:

"I have celebrated my children's wedding with big feasts. I slaughtered a few cows and sheep to feed my guests and I had many guests. This makes me very proud because I know not all the farmers in my area can afford to do that" (Age 50, *Gelgele* Female Farmer 2014).

"I was supposed to wed my first son, and I could not have the big wedding I have always dreamt for my child because I cannot afford the food to invite many guests. This makes me very upset and ashamed" (Age 46, *Gelgele* Female Farmer 2014).

Some qualitative studies have been done focusing on the anxiety-producing and stressful nature of food insecurity. These studies identified food insecurity as the primary or second most important stressor in people's lives (Pike and Patil 2006). In recent years, researchers have begun looking more deeply into the experience of food insecurity and hunger as a way to elaborate measurement methods as well as policies and programmes that are relevant at local levels (Moreno 2005). For instance Pike and Patil (2006) stated that:

"*Examining psychosocial stress across populations requires an understanding of perceptions of what is stressful and by whom. Stress varies by culture, ecological setting, gender, age, and a host of other specific considerations*" (Pike and Patil 2006, p.302).

Pike and Patil (2006) added that qualitative studies of groups in developing countries suggests that food insecurity compromises well-being whether expressed as severe feelings of despair and suffering, as anxiety, resignation, shame and hopelessness (Pike and Patil 2006). Food insecurity is a huge, but often neglected human rights issue in many Sub-Saharan African countries (Benson 2004) The World Health Organisation (2001) states that physical health disorders is also increasingly recognised and have intergenerational consequences. A male farmer that participated in *Yetnora* village expressed his concern, stating:

> *"Children are becoming more stunted from the lack of nutritional food, and this affects their physical well-being. Also, feeling weak and constantly being tired from the lack of food or good balanced diet is affecting our well-being as well. Another factor is also feeling stressed, worried, and ashamed and other feelings associated with food affect our mental and physiological well-being and decreases our human development aspect"* (Age 35, *Yetnora* Male Farmer 2014).

As stated by Ryan and Deci (2001, human well-being refers to a best psychological functioning and experience of a person. According to Veenhoven (2000), people's quality-of-life and their well-being are defined by the individuals themselves based on their way of thinking. Sen (1981) stated that food is a basic need and if met adequately, the individual's quality of life, mental and physical health would improve increasing his or her well-being and human development prospect. In Ethiopia, the Government is paying very little attention to the physical, mental and physiological effect of food insecurity on the people's well-being affecting their quality of life and development. This evidence has been articulated by the participants in both villages. For instance, A *Gelgele* farmer mentioned that:

> *"The way we produce food and eat food is changing drastically and it is not positive. Our life is not changing for the better now that we are using a new way of growing food, in fact it is degrading, and it is affecting our physical and mental health. The ecosystems are being polluted by the toxic chemical such as pesticides sprays and run-offs and if we don't have a healthy environment and ecosystem, how can we grow healthy food and be healthy?"* (Age 40, *Gelgele* Female Farmer 2014).

The fact that over 80 per cent people in Ethiopia are living in rural areas, they are heavily and directly depending on ecosystems. Ecosystems directly and indirectly provide sources of basic nutrition for people. Food security is increased by small based local food production system and from the natural environments such as wild foods or food forests. This helps increase access to food for people that do not have the capacity to buy food from somewhere else. The World Health Organisation (2005) mentioned that ecosystem services are vital to the mental and physical well-being of individuals and families.

Wild foods are a very important food source locally in rural Ethiopia, frequently decreasing the hunger gap created by stress such as draught. For instance, Legesse (2013) and a male *Gelgele* farmer stated that:

> *"The Ethiopian indigenous trees, herbs and plants are disappearing at a very fast rate. These trees, plants and herbs are vital to the ecosystem and the humans. They provide wild food for people and are great source different nutrition. If we reverse back this damaged ecosystem and re-populate the Ethiopian highland with these trees, plants and herbs again, we can decrease food insecurity greatly in rural areas"* (Legesse 2013).

> *"When I was a child, we used to pick and eat fruits from the wild trees, plants and herbs. Food was everywhere, because the plants and trees used to be everywhere, we were never hungry even if we stayed out all day and they give us nutrition. But now these trees, plants and herbs are almost gone, the land is drier, barren and you must pack your lunch if you are going out all day"* (Age 60, *Gelgele* Male Farmer 2014).

WHO (2005) mentioned that in the redistribution and recycling of nutrients, ecosystems play a huge role. The natural environments, the ecosystems are crucial in providing vitality for plant and animal species. Creating imbalance in the nutrient cycling can damage the fertility of soil, causing declined crop yields. This damages and decreases the nutritional status of individuals, households and communities. Diet deficiencies, both macro-and micro-nutrients can harm

individuals mental and physical development. WHO added that human health can be damaged by exposure to specific toxins produced by algal blooms and according to WHO.

"*These can occur as a result of nutrients of waterways excessively loaded with nitrates and phosphates infiltrating from run-off water discharged in agricultural, industrial and domestic processes*" (WHO 2005).

In recent years, the way we produce food has changed drastically and it is causing widespread unsustainability in the natural environment. This has become a huge concern globally. For instance, how nitrogen fertilisers are added to crops together with the adoption of nitrogen-fixing crops and fields means that the amount of nitrogen fixed anthropogenically surpasses that fixed by nature itself (Vitousek 1994). The use of chemical fertiliser and pest/herbicide causes risks for humans and other ecosystems. According to the World Health Organisation (2005):

"Such chemical exposures *can occur when attempts to improve water access lead to contamination from natural sources and when human actions release toxic chemicals into the environment for example, through pesticide use. Toxic chemicals in water and food can have adverse effects on various organ systems. Exposure to low concentrations of some chemicals such as PCBs, dioxins and DDT may cause endocrine disruption, interfering with normal human hormone mediated physiology and impairing reproduction"* (WHO 2005).

The intense chemical use on the land is creating major issues, said one of the key informants of *Gelgele* village. This issue includes the increase of people being sick from the spray of pest/herbicide and the small insects or other harmless but useful plants being destroyed from this spray. There were evident that people have reported they became sick after exposure to these chemicals. According to a research officer from Addis Ababa University interviewed (2013), Ethiopia is not experiencing food shortages, there is enough food being produced by the farmers; and not only that it can feed all Ethiopians, but it could even feed more people outside of Ethiopia. Consequently, the great importance given to more food production in the expense of the fragile ecosystems and people's health is insane. He added that:

> *"If we have genuine concern to feed the population, the work should focus on food access for the people, give people the freedom to access the food they need then you can reduce food insecurity in Ethiopia. There is very little attention given to the social and environmental cost of this fast accelerated agricultural transformation that is taking place in Ethiopia currently. All the Government is concerned with is how to*

increase food productivity, and this is being done now under many social and environmental costs. Displacing people from their land in order to sell the land to big business is one big issue now in the country" (Addis Ababa University Research Officer 2013c).

According to AAU social research officer (2013), political situations and interests, food insecurity, hunger and poverty tend to force people in rural areas onto marginal drought-prone places with dry land and infertile soil and others to urban areas. Most communities in the highlands of Ethiopia are affected by degraded land such as that caused by soil erosion. Soil erosion has significantly decreased crop yields in Ethiopia. The research officer added that:

"In the past, our ecosystem used to be rich, our land was more fertile, and we had more trees, plants and herb in our areas. We were very close with nature, but now the land is degraded, soil runs off easily because we don't have those trees anymore due to deforestation. People, who don't have good fertile land, are forced to migrate to the dry, more degraded land. And those with good fertile land are also being displaced by the Government now" (Addis Ababa University Research Officer 2013a).

According to the World Health Organisation (2005) how human well-being and human development can be affected:

"As well-being declines, people's options for regulating their use of natural resources at sustainable levels are reduced. Immediate needs inevitably take priority, increasing the pressure on ecosystem services, and can create a downward spiral of increasing poverty and further degradation of ecosystem services" (WHO 2005).

A male *Yetnora* village labourer expressed that:

"I am struggling to even find the day-to-day food, the basic need, looking after the ecosystem happens when you have eaten well, so for me the priority is to find food, I work as a day labourer so I can make some money and buy food. If I cannot find a job that day, I have no food to eat" (Age 27, *Yetnora* Male Labourer 2014).

According to Sen (1985), food insecurity happens when a specific group of people could not purchase food. This could be because of high prices, a fall in wages, or both. Sen articulated that people experience food insecurity because they have no access or entitlement to food and as a result they are forced to decrease their demand for it. A 37 year old interviewee in *Yetnora* stated that:

> *"Every time I go to the village market day, there are lots of crops, such as teff, corn wheat; fruits like oranges, bananas, mangos and vegetables like cabbages, tomatoes carrots and many others are available for sale, food availability is not the problem in our area, food is everywhere. But if you have no money to be able to buy anything you want to satisfy your food need, availability is nothing, it is having access and entitlement to it that a problem and is vital for food security"* (Age 37, *Yetnora* Female Farmer 2014).

Conceição *et al*. (2011) stated that for human development, increased food security could have a tremendous impact. For example, by just basically freeing up household spending resources other than food but spending on other necessary resources such as health and education; it is possible to increase human development. Increased food availability, accessibility, entitlement, quality and utilisation can increase human-well-being and human development. Human development can be strengthened through interventions to boost food production, continuous access to food by the poorest and most vulnerable and nutritional security to enable human development. A female *Gelgele* farmer and a male participant from *Yetnora* mentioned that:

> *"If we have confidence that we will have enough nutritional food to eat for the day for the week, a year and so on, a sustainable food supply and access, we will not stress and get depressed. This can improve our well-being greatly"* (Age 34, *Gelgele* Female Farmer 2014).

> *"Every time I know I can go out and buy all the food I need from the market, I feel confident and great"* (Age 34, Male *Yetnora* Farmer 2014).

According to Anderson (2008), democratic involvement in food system choices affects more than one area. Having a truly transparent and just access to all necessary resources by farmers for food production and marketing is vital. A true sustainable food system is only that can be truly leading to sustainable human development. A *Yetnora* participant expressed that:

> *"If our leaders are truly concerned about us and care about our food security, they will not use us as their agricultural input marketing system. They will not manipulate us in buying their agriculture products under the name of more food growth. They will not control our market price through their clever system and exploit our farming system. The system in place now is not for us, but for the politicians own political agenda, this*

way you cannot increase human well-being and bring true human development" (Age 29, *Yetnora* Male Farmer 2014).

A fair food system ensures adequate amounts of nutritious food that are affordable and accessible to all people at all times. It also provides an equal playing field for farmers and is furthermore maintained by R&D and innovation systems that provide to the needs of the well off and the less off people equally. It also encourages vital elements that support a more balanced human development (Misselhorn, *et al*. 2012). According to Qizilbash (1996):

"Development economists have moved away from thinking of economic development in terms of growth in per capita GNP. The main reason for this is that such growth may fail to translate into increases in human well-being and human development for the majority of the population. Some tried to develop new conceptions of human development which insist on human beings as the ends rather than the means of development. Development is conceived of, roughly, in terms of an improvement in the quality of human lives which is equitable within and across generations and consistent with the non-violation of human rights" (Qizilbash 1996, p.144).

According to Qizilbash (1996), the capability approach is very important for the evaluation space for assessment of the quality of life and well-being. As Sen articulated, the procedure of economic development is best understood as an extension of people's capabilities, and development is perceived as a procedure of freeing from the compulsory requirements to "*live less and be less*" (Sen 1984). The AAU social research officers have articulated that:

"Our leaders are so obsessed with development, GDP growth, and economic advancement. For example, they are investing hugely on building dams for electricity; this is under the name of earning more foreign exchange from the electricity hoping to be sold to other countries outside of Ethiopia. This building of dams comes with lots of social and environmental cost now in Ethiopia. It is displacing people from their homes, denying them their fertile farm land, and if they complain leading them to prisons. But the concern for the Government is not that this is affecting the people's ways of life, quality of life and the natural environment, but it is to make money under any cost. So is this development?" (Addis Ababa University Research Officer 2013b).

"Now in our country, under this new economic growth and agricultural development policy plan, people's well-being and ways of life are being degraded. What is the

purpose of development if it is not to improve people's quality of life for the better, increase their well-being and increase their human development? Material development is nothing if it undermines people's physical, mental physiological and spiritual development" (Addis Ababa University Research Officer 2013a).

Furthermore, farmers from both *Yetnora* and *Gelgele* villages have emphasised that:

"Our leaders are now using our land to exploit raw materials so that they can sell these raw materials to other countries and make money. They claim that they are trying to improve Ethiopia's economy by making money through this type of natural resources extraction. But this money never reaches us, they use the money for themselves, to get rich. We never see any change in our area, but more destitution from this type of policy" (Age 56, *Yetnora* Female Farmer 2014).

"We increasingly feel that we are incapable of living our life the way we want. We have no more freedom in how we use our land. If we are told to leave our land by the Govenment we have to leave it. There is no ownership. This new development policy is forcing a lot of farmers off their land. For instance in our area, Gelgele village, the fact that it is in the Blue Nile Gorge, the land is now being used to extract raw materials such as gypsum, ceramic for export to foreign countries. How can you displace people, force them off their land where they get their food from without proper replacement and call this developemnt?" (Age 30, *Gelgele* Male Farmer 2014).

Qizilbash (1996) stressed that iif someone is e-capable of "*doing*", that person is both positively and negatively "free to *do"*. That person has the capacities that are relevant and necessary outlooks and there is nothing external holding back the person from doing. Therefore, if someone is e-capable there is no argument between negative and positive freedoms. Several authors have written and listed a collection of documents down as ingredients of what they think contributes to the human quality of life, basic human needs and aspects of well-being that contributes to human development (Alkire 2002). According to Max-Neef *et al.* (1992):

"*Human needs, self-reliance and organic articulations are the pillars which support human development. However, these pillars must be sustained on a solid foundation and creating those conditions where people are the leaders of their future. If people are to be the*

main actors in the human development aspect both the diversity as well as their independence of spaces in which they act must be respected" (Max-Neef *et al.* 1992, p.197).

Being able to achieve the transition of an object-person into a subject-person is in the process of development and is a challenging issue. In the current increasingly globalised world, a system that is organised hierarchically and where decisions flow from top-down, there is no possibility for people to have free active participations according to their will. Development must nurture local spaces, facilitate micro-organisations and support diversity of cultural environments comprising civil society. This type of development must unite, rediscover and integrate the diverse collective identities that make up the social body (Max-Neef *et al.* 1992).

In this study, I have found that there was a big gap and disconnection between the Ethiopian Government policy makers and the people that adopt the policy in their day-to-day life at the ground level. Moreover, there seems to be that bottom-up policy had no place in the policy making process of the Government's ATP plan. As a result, the policies in place are in fact causing people more problems affecting their well-being and their human development aspect in the study villages from the participants' point of view. For instance social researchers form AAU (2013) have expressed that:

> *"The people who make the policies at a top level have no clue what life is at a ground level, such as how farmers live. The Ethiopian politicians and elite individuals deal with other elites such as those in the African Union and from the WB or UN agencies when making a policy for the people at a farming level. They spend their times in offices or fancy meetings at the international level when dealing or making a policy for the people. Those who adopt the policies get to know about it when it reaches their door step. There is a big gap between policy makers and policy receivers in Ethiopia"* (Addis Ababa University Research Officer 2013c).

> *"I can tell you that the current food security policy that the farmers are now adopting is a one way, or a top-down only process. Bottom-up policy to actually shape policy or create a new form of policy is unthinkable in Ethiopia. To start with, the policy already in place now is there to serve the elite individuals so that they can extend their power position in the country and not to serve the people genuinely. There is also a disconnection between the people on the ground and the politicians that make the policy at the top level. This is because, one is that they don't actually care about what the*

people really wanted and another is that they use policy to control people politically" (Addis Ababa University Research Officer 2013a).

"As a social research officer, I am witnessing more and more issues related to the well-being of the people in the farming community due to the food security policies in place. When we do a research at the ground level, we can see that people are distressed and frustrated about the Government and its policies. Some raise issues related to the ATP plan openly, but most would not say; but people are depressed and frustrated in silence. This have a huge implication on the people's quality of life related to their well-being" (Addis Ababa University Research Officer 2013c).

The farming participants in both villages have also expressed that there is a gap between policy makers and the farming community at the ground level. This issue has been raised many times during the in-depth interviews and key informant interviews in both villages. The participants have emphasised that:

"*When we get to know about the policies that we have to adopt though the extension workers in our Kebele, we wonder who and how they actually made the policies. Because some of the things we have to do as part of the policy are just strange. For example why do we have to meet every few days and update our day-to-day life and farming activities to the (1to5) system team leaders? For us we feel that it is a tight control of our day-to-day activity so that the Government knows about us in great detail"* (Age 44, *Gelgele* Male Farmer 2014).

"The food security policy we have to adopt did not come from us; as it just comes from the top leaders and it seems like we have to do what they say to serve their purpose. This is making a lot of farmers frustrated and it is affecting a lot of people in negative way. We now fear more of the Government as every time someone does something against the Government, he/she is denied any fertiliser or improves seeds from buying. A lot of us now are using these technologies and buying the packaged technologies has become a must" (Age 40, *Yetnora* Female Farmer 2014).

"Our well-being is being affected by the policies in place. This is not a concern for the leadership; because all they want to do is control us through these policies. There is no way the gap between the farming community and the leaders would narrow now. The

frustration and resentment is far too much to reverse it back. All I want to see is this Government system gone. Let's hope a better one, a one that care about us sincerely and does what we want and not the other way around so that our children have a better brighter future ahead" (Age 50, *Gelgele* Female Farmer 2014).

The Ethiopian Government currently is commercialisation the agriculture system through the engagement of the private sector and also thought the state owned big farming activities. Small-scale farmers are encouraged to grow cash crops for commercial purposes. In the study villages, this policy has been pushed through the food production acceleration system. The farmers have to adopt the technologies so that they can contribute to the nation's food growth demand for consumption and export purposes. Through food exports, the Government can earn foreign exchange to accelerate its GDP growth. There are some concerns raised by the academic staff at AAU and also the farming communities in the study villages. For instance the academics and a *Gelgele* farmer stated that:

"The private sectors, foreign and home investors now in Ethiopia are taking over big fertile lands in the country. The Government is selling the good fertile lands to these investors sometimes even by taking land off from the farmers. These farmers have no choice but to migrate to less fertile lands given to them by the Government" (Addis Ababa University Research Officer 2013a).

"The Government claims that they need the money from the private investors to invest on other infrastructures such as roads and electricity dams. But in reality, a huge portion of this money is not invested on the public; but it disappears on the pockets of the politicians. Corruption is one big problem in the country now. So the land deals are not benefiting the people, but the private sectors and the politicians" (Addis Ababa University Research Officer 2013b).

"Our land is being sold to such as Indian and Saudi investors so that they can grow some flowers and sugarcane for export purpose. The most fertile lands are given to these investors from our hands, and the Ethiopian farmers have to do just with a dry land. The money gain from these deals is not even serving us. The politicians are scrambling it among themselves in a rush before they lose their power in the country. I really hope they go away soon, because it cannot get any worse than this" (Age 24, *Gelgele* Male Farmer 2014).

These were some of the most important concerns raised by the social research officers from Addis Ababa University and the participants in *Gelgele* and *Yetnora* Villages.

7.3 Conclusions

Sustainable food security increases greatly when people are capable and can access and have freedom and entitlement to it. Food availability, stability and utilisation are also vital elements for a healthy and stress free life. Food production alone does not increase food security. From the findings in both *Gelgele* and *Yetnora* villages, people are producing more food using the technological inputs adopted through the ATP extension systems; and most people are eating three times a day. However, farmers have expressed that the food quality they are consuming has reduced in recent years due to the agricultural inputs they are now using to grow more food. This is affecting their well-being and their human development prospect.

There is also a clear disconnection between the Ethiopian policy makers and the people that adopt the policies at the ground level. Policy is only top-down and bottom-up policy is almost non-existence. The policies in place are not serving the people genuinely; but instead, they are used to control people politically. This is creating a lot of frustration among the farming community in the study villages and as a result, it is affecting their well-being. The following chapter, chapter eight concludes this thesis and give recommendations for further study in this area.

Chapter 8. Conclusions and Recommendations For Further Study

Food is life. Food is fundamental to people's quality of life, well-being and physical, mental and spiritual development. What we grow and eat sustains our body parts, our mental ability; it cultivates our culture and communities. And yet, presently, over ten million people in Ethiopia are suffering from food insecurity; millions of people lack adequate nutrition in their day-to-day diet, and as a result these people are experiencing low quality of life and their well-being is at a risk.

Currently, the food system is broken. The problem today is not one producing more food, but access to food where it is most needed and entitlement to the food that is already available. The Ethiopian Government and its policies have failed in delivering a sustainable food system for the people they serve. Instead the food security policy is used as a weapon to control people politically.

The African Union, working with its international partners, such as G8s, the World Bank, Bill & Melinda Gates Foundation has policies in place to solve the food insecurity issue of the continent. The profit-driven, chemical-intensive, industrial scale model of agriculture is seeming to be the answer of AU leaders to the food insecurity issue of Africa including Ethiopia through the New African Green Revolution, AGRA. The New Partnership for Africa's Development (NEPAD) working with AGRA implements its food security policy agendas through the Comprehensive Africa Agriculture Development Programme (CAADP) at a country level.

The international leaders such as the G8s, the African Union and the Ethiopian Government policy makers have a narrative that, we need to intensify more food production in order to achieve food security for the people of Africa. Yet, despite the growing global food production over the past half century keeping ahead of global demand, food shortage is experienced by many people in Africa including Ethiopia. In the 68 years since the Universal Declaration of Human Rights was adopted, the right of all for access to sufficient, safe and nutritious food is far from becoming a reality.

The African Union current food security policy, which is operating through NEPAD, AGRA and CAADP framework, have been initiated and made by a handful of key elites', actors for different political purposes, using narratives and discourses. These policies are top-down in nature, and are being passed on to the people on the ground using the top-down implementation system. Moreover, the African food system is increasingly becoming on the hands of a handful large corporations that are controlling large parts of the agriculture system through the supply of agricultural inputs and direct control of huge farm lands. This is being operating through the new AU Green Revolution Agenda, using the CAADP framework.

The member States of the African Union have adopted the new African Green Revolution Agenda, which aims to expand and intensify food production through the adoption of chemical intense agricultural inputs. These countries are now implementing the Agenda at the national level, using the top-down policy implementation system. Ethiopia was one of the African first countries to adopt the new African Green Revolution agenda, CAADP Framework and currently is implementing this policy at the ground level. Ethiopia incorporates CAADP framework with its own national food security policy.

Ethiopia has a country level development programme. The Growth Transformation Plan (GTP) is one of the main programmes now in the country that is set out to bring development, end poverty, ensure food security and lead the country in to a middle income state by the year 2025.

Under the GTP, the Agriculture Transformation Plan (ATP), through the Agriculture Transformation Agency (ATA) is the main policy in place that is currently transforming the Ethiopian agriculture system. The commercialisation of the small scale-farmers and the engagement of the big business, private sector is the main aim of the ATA, which is now converting the Ethiopians agriculture system in order to create investment in the country. Through foreign exchange earnings, the leadership believes that food security can be increased.

Ethiopia has a top-down policy implementation programme, which operates through the administrative systems in place. Policy flows through; from the Federal Government, to the Regional Governments, then to *Zones*, after that, it goes down to *Woredas*, *Kebeles* and finally reaches households. This study has found that, this implementation system seems to be very effective and efficient in delivering policy at the ground level.

Using the top-down policy implementation approach, the Ethiopian Government is implementing its ATP policy on the places where it identifies as areas with potential to grow food. These potential areas are being reached through the agriculture extension workers',

delivering polices on the ground, household level. From the Government potential areas, *Dejen Woreda* has been selected for this study in order to assess the policy implementation process, policy adaptation and the effectiveness of the policy at the ground level from the farmer's perspective.

Two villages, *Gelgele* and *Yetnora* have been selected from the *Dejen Woreda*, and have been studied to help assess the policy implementation process, effectiveness and the impact of the policy it has on the farming community at a close up level. What it means to be food secured from the farming communities' perspective in these villages have also been assessed for this study. A number of primary data has therefore been collected to help understand the policy implementation process and effectiveness in *Gelgele* and *Yetnora* Villages. The result of this study has shown that, in the studied villages, policy implementation was very much top-down. Using the agriculture extension system, policy reaches the farming community at a household level effectively. The current main policy the farmers in *Gelgele* and *Yetnora Kebeles* adopting was the agricultural inputs. These inputs are improved seeds, chemical fertiliser, and chemical herb/pesticides to help the farmers improve and increase food productivity.

The people who have been participating in this study, around 95 per cent, have stated that, the agricultural inputs the Government supplying them with now are helping them improve crop productivity. Their food productivity improves greatly mainly if they use the improved seeds, chemical fertiliser, and chemical herb/pesticides together. Participants in both villages have articulated that, they must use the three inputs together; not separate if they are to be productive. The Ethiopian Government ATP policy, working with the African Green Revolution Agenda, which is to increase food productivity of the small-scale farmers using the improved seeds, chemical fertiliser, and chemical herb/pesticides inputs, is working very well from the evidence found in *Gelgele* and *Yetnora* Villages.

However, most of the farming participants in both Kebeles have raised pressing issues related to the ATP policy at the ground level. Some of the most significant problems raised by about 98 per cent of the study participants in both Villages were that, the cost of the agricultural inputs and the growing dependency on the inputs to grow food. The *Gelgele* and *Yetnora* farmers have stated that, when the Government first introduced the agricultural inputs, they were free to some extent, and if not free, they were very cheap and most farmers have started using them.

However, every year, the cost of the inputs was going up; and now, the cost is too high and most of the time farmers cannot afford it, but must buy the inputs out of choice. This is because the land is used to the inputs and without the inputs; the productivity of the land is lower than even before they started using these inputs.

The consequence of the fact that farmers must use the inputs as their land needs it is creating the feeling of being trapped by the ATP policy. Key informants from the study sites have stated that, there is a feeling of frustration among the farming community. Farmers now even have to borrow money from family, friends or lending agencies set-up by the Government to be able to afford the inputs; because without the inputs, the land is not productive anymore. If farmers cannot afford to buy the inputs, they borrow money, and if they cannot pay the money back, they usually migrate out to towns and cities in order to avoid being arrested by the Government.

The ATP policy at the ground level is creating a wealth gap among the farming community in both *Gelgele* and *Yetnora* Villages. Those who can afford the inputs can buy the three, improved seeds, chemical fertiliser and chemical herb/pesticides together every season, and can grow more, be able to sell more and get more income. On the other hand, those who cannot afford it are becoming more destitute, feeling trapped and frustrated by the ATP policy. For instance a *Gelgele*, *Yetnora* and *Dejen Woreda* participants stated that:

> *"The Government has systematically used these inputs to trap us. The ATP policy is not there because our leaders are so concerned about us and really wanted to improve our food security. The policy is a sale mechanism, to sale us their product, to make our land and us dependent on their system and to control us politically"* (Age 58, *Gelgele* Male Farmer 2014).

> *"We in our community, in Yetnora Village, we see that adopting the inputs have given some positive changes to some farmers who can afford it every year, because we know the inputs do improve productivity. But who can afford it every year? It goes higher year by year, and we must buy the three products together and our land needs more year after year. We now understand that we have been trapped by the leaderships' agriculture policy. All this policy is doing when you look at the big picture is, trapping us, putting us in our own prison, in our own land"* (Age 40, *Yetnora* Male Farmer 2014).

> "*The current Ethiopian leadership is using the ATP policy to control people politically. Food productivity might go up for the farmers who can afford it, but this is an agenda*

used to control us, because our food security is now on the hands of the leaders. If they wish to make us starve, all they have to do is stop supplying the inputs to us. The fact that, almost all the farmers are now using the inputs, whether they can afford it or not, and the soil is used to it! if there is no more supply of the inputs, yes people will starve" (Age 53, *Yetnora* Female Farmer 2014).

"One big trick they have used on us was that, selling the improved seeds to us. We must every year buy the improved seeds from the Government agency, and these seeds can only grow once. The next year, we must buy another. This means that, we cannot save seeds for the coming year. This is one of the weapons they have now, if they stop giving us the seeds, we have no seeds to plant basically, this means starvation and you can control people this way easily. The ATP is not a policy that has been designed to bring us food security; in fact it is making us live in fear and depression" (Age 37, Dejen Woreda Farmer and Trader 2014).

Farmers in *Gelgele* and *Yetnora* have strongly expressed their fear and frustration about the negative impacts of the ATP policy. The participants have claimed that, the agricultural inputs are not only creating dependency and are costly, but they are also decreasing food security, related to the quality of the food people consume. It was stressed by the participants that, the improved seeds they are now using are not the same quality as the traditional seeds people used to use.

The Ethiopian traditional seed used to have more nutrition, evidence of this according to the farmers was that after one meal, you get full and do not have the sensation of feeling hungry just after eating a meal. However, the crops that are now being produced from the improved seeds, give no value to the body, they have less taste, and people must consume more food and more often in a day in order to get full. As a result, child stunting and adults feeling fatigue and more tired without doing much of physical activity is a growing trend in both villages according to the farmers. Farmers relate these changes in their community related to the agricultural inputs they are now using in their farm land to produce more crops.

The African Union NEPAD, AGRA and CAADP policy makers and the Ethiopian Government strongly believe that the agriculture system must be transformed in order to increase food productivity. And through more food productivity, food security can be enhanced for the people. But can food security be achieved through more food production? The study has looked at the link between food production and food security.

Food security is not just about food production, but over time, it has come to signify the availability, access, utilisation, quality and stability and freedom of food. Food nutritional security is fundamental to food security; beyond food being accessible, it must be clean, nutritious, healthy and prepared and processed by the body in such a way as to sustain well-being and human development. The biology of human beings has a primary need for food, water, clean air and shelter. Stresses on food producing systems, freshwater sources, fertile land and climate regulation could cause major adverse health impacts (WHO 2005). The importance of food security as a determinant of people's health and well-being should be given great importance and awareness must be raised among the general population.

The impact of food insecurity mentally, physically and psychologically has a devastating impact on human well-being. (Hadley 2008). The many determinants of food and nutrition security mean that the actuality of global food security rests at the meeting of several pressures, both on the supply and demand sides of food quality, availability, access and utilisation (Misselhorn *et al*. 2012).

In the current food system, there are clearly challenging demands, objectives and values held by many actors. For instance, activities that increase food security for some actors in one nation or region may weaken the food security of other actors. In the effort to improve global food security, enhancing food production remains a basic strategy. However, with more than enough food currently being produced *per capita* to feed the world's population, enhanced food production by itself is evidently not enough to the duty of assuring food security for every human beings. Enhanced food production, at first through extensification and more recently through intensification, has guaranteed that in 2009/10 around 325 kg of grain has been produced yearly per capita, significantly more than the 219 kg of grain needed yearly to meet basic caloric requirements of 2100 calories per day per person (Gregory *et al.* 2002).

The need to increase food production drastically through the new Green Revolution in Africa, Ethiopian ATP policy raises many questions about the sustainability and possible social and environmental costs it has in a short and long term. Human development and food security are intertwined deeply. Though food production highly contributes to food accessibility and food availability, it does not necessarily solve the issue of nutrition. It is therefore vital to gain a better understanding of the links between dietary nutritional patterns and human development outcomes.

The reduction of malnutrition and other diseases related to nutrition deficiency must be a high priority of policy makers in order to increase human well-being and human development (Misselhorn *et al*. 2012). How food production, food security, human well-being and human development interact with one another is an aspect that is not currently well studied. To bring real change in the food system, it must be sustainable, food must meet the dietary requirement an individual needs, and people must be free and have the capability to access the food they need at a local level.

For this to happen, policy change, political will, better understanding and research is essential about the micro and macro-level connections and communications between the determinants of food security, human well-being and of human development results in Ethiopia. Food security, particularly, nutrition and the well-being of households and individuals need greater emphasis by the Ethiopian policy makers when designing a policy and in research agendas and outcomes. The Ethiopian Government policy and decision-makers of food security must involve the civil societies, the general population and individuals when making a policy and the policy must be clearly understood and agreed on by the general public before it is implemented at the ground level.

Policy making must also incorporate bottom-up policy approach, not only to monitor and evaluate but also to initiate policy based on the peoples need at the ground level. The Ethiopian research institutes currently play great role in the implementation of policy, but have very little role in initiating policy and in the policy making process based on research at the ground level. This needs great attention by the Ethiopian Government and the leadership must involve the research institutes in the policy making process. Research institutes must undertake research based on the peoples' way of life, culture, need and the environment if food security and human well-being and quality of life is to be increased in Ethiopia. Quality of life is the degree to which objective human needs are satisfied relative to individual or group views of subjective well-being (Costanza *et al.* 2007). Human beings have basic needs. Costanza *et al.* (2007) cited that:

"Humans have the need for subsistence, affection, reproduction, security and so on. Subjective well-being is assessed by individuals' or groups' responses to questions about happiness, life satisfaction, utility, or welfare. The relation between specific human needs and perceived satisfaction with each of them can be affected by mental capacity, cultural context, information, education and nature; usually in complex ways. Moreover, the relation between

the fulfilment of human needs and overall subjective well-being is affected by the time-varying, weights individuals, groups, and cultures give to fulfilling each of the human needs relative to the others" (Costanza *et al*. 2007, p.8).

Farmers from *Gelgele* and *Yetnora* villages stressed that:

> *"Increasingly, people in our community are losing their independence, confidence. We are being systematically controlled in how we live our life, especially how we produce our food, how we use our land and if we can use our land at all. Our life experience is increasingly becoming controlled and limited by the policies that come from the top level, our Government"* (Age 25, *Gelgele* Male Farmer 2014).

> *"People in our community are living in fear of the Government. If we oppose the political system in anyways, for example if we complain or participate in a meeting or become an opposition party member, we get arrested, and people who have done that kind of activity are still in prison, for many years now. This is to show us the punishment involved if we oppose the Government in any ways. This creates stress, frustration and anger for most of us, this current leadership does not practice democracy as it claims, in reality, and the leadership is dictatorship"* (Age 38, *Yetnora* Male Farmer 2014).

The role of governments and their policy is to create opportunities for people so that their needs are met adequately. Governments must assure freedom, improve and sustain social and natural capitals. The capacity of people to satisfy their basic needs come from the freedom, prospects available and created from social, built, human and natural capitals (Costanza *et al*. 2007).

Currently in Ethiopia, food is increasingly becoming on the hands of traders, the private sector and Government. People are becoming dependent on this system. If people do not have control over their food production, have no local based food access and rely on external markets; they lose their freedom, independence and confidence. The more food is becoming outside of the people's hand, the more likely people will be trapped, and slaves to the system. This is the case from the farmer's perspective in *Gelgele* and *Yetnora Kebeles*.

Small, local based, community-led food production system gives more control and confidence for the people, it is environmentally friendly, and people can manage the water, land and energy available to them. Local based less chemically intense food production system encourages people to produce more diverse foods in a small place they have available, which will in turn

contribute to better nutrition. For instance, using a sustainable food production method is a technique using ecological knowledge as a food production method.

Since ancient times, people have turned to nature and ecological systems for answers to their day-to-day issues. The natural environment was their perfect model (Lomba and Ortiz 2003). An ecologically sustainable based food production system is based on the principle of care for the earth; it ensures the provision of all life to continue and multiply, it cares for people as it proposes access to those resources necessary for human existence, both physical and spiritual (Mollison *et al.* 1991).

This way of food production encourages the development of forests and woodland. This minimises environmental destruction and impacts by integrating ecological designs with living processes and encourage nature, learning and environmental behaviours; not only in rural areas but also in urban settings (Mollison *et al*. 1991).

This method of food production system has proved to increase human well-being. It is proven to be human and environmentally friendly, it gives individuals and communities the ability to be more confident and self-reliant in their food production and food access system. The producing of crops in the form of growing edible plants, having the freedoms to growing organic food and to be aware of what one is eating is vital for human development, physically, mentally and spiritually.

To conclude this thesis; the study had small sizes in number for the policy and implementation data generation; however, the participants were key informants from the relevant departments and I have tried to get a different perspective by interviewing different actors from different sectors. For example by interviewing a policy maker at the Ethiopian Federal level and the African Union level; and by interviewing researchers and extension workers at a ground level, I have gained a different perspective of the policy making and implementation process. I have also tried to get a much deeper understanding of the issue when collecting the village level data by spending as much time as possible in both villages and having a deeper conversation with the people participated in the study.

Overall, designing the research questions, collecting the data and recording the information as much as possible from all the relevant participants and places did have its challenges. For example, I was constrained by time to gather the desired data, having access to some participants was an issue as well and getting together the micro and macro level data gathered

with the literature studied was difficult to some extent. At a ground level, getting passed the *Kebele* gatekeepers was also a big challenge I have encountered when collecting my data.

However, it was also a success; as I have got the desired data and I have been able to write the thesis with concrete findings. Lastly, it was also a great experience. I have enjoyed it very much and I am grateful to have had the opportunity to undertake this research work in Ethiopia; as it is my home land and I feel very strongly about the food security and environmental issues in Ethiopia. Therefore, I am intended to continue researching the issue further in the future.

Recommendations for Further Study

Based on the thesis findings, I recommend the following issues for further future study in Ethiopia. Firstly, the links between food production and food security must be studied carefully. The relationship between policies, politics, power, control and food security also need to be examined. The aspect of food security in relation to nutritional value of the food people consume and its link to peoples' physical, mental and psychological health must be investigated in greater depth.

The freedom, capability and human needs approach related to food security must also be addressed urgently. Lastly, the relationship between environmentally sustainable, local based organic food production system, human well-being and human development need a great urgent attention in Ethiopia.

And finally, a young researcher from Addis Ababa University expressed that:

> *"Ethiopia and the people of Ethiopia were great once upon a time. We have ruled the Axumite Empire, sailed the Mediterranean Sea and traded with the Roman Empire and the Greeks, what has happened to us to reach this level of food insecurity and poverty? And how to become great again is not by how the current Government is going on about development. But by re-discovering our greatness as a nation and people, finding our roots again, digging up our history, saving the ancient books our ancestors left for us and start using them and re-writing and creating our own history; building Ethiopia based on a real human development perspective. A development that centres not materialism, consumerism and individualism; but a development that enhances, nurtures and nourishes the physical, mental, psychological and spiritual aspect of the Ethiopian People"* (Addis Ababa University Research Officer 2013a).

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Appendixes

Appendix 1: Interview Schedules

Phase One Interview Questions

The African Union Interview Questions with the NEPAD and CAADP Officials

1. What is the food production and food security polices at the African Union Level?
2. How do these policies being passed on to a country level policy?
3. What are the implementation processes of the policies in place? Top-down and bottom-up processes
4. What are the monitoring and evaluation of these policies in place?
5. How do you measure the policies effectiveness in relation to improving food security for the people?

The Ethiopian Government Federal Level Officials Interview questions

1. What are the food production and food security policies in Ethiopia?
2. What is the implementation process of the policies in place?
3. Can you please explain how the CAADP and the ATP programme being implemented to reach the people on the ground?
4. Can you please explain how the policies that come from the federal level works in reaching the people on the ground? Explaining bottom-up and top-down implementation processes?
5. Does the monitoring and evaluation system works top-down or bottom-up too? Please explain
6. Do you think the policies are effective in bringing food security for the people?
7. How do you see organic farming in a sustainable way?

The Ethiopian Research Organisations Participants Interview Questions

1. How is the research organisation managed?
2. What is the role of the research organisation in the food security policy making process?
3. What is the role of the research organisation in the food security policy implementation process?
4. How does the research organisation produce and contributes knowledge related to the peoples' way of life?
5. What are the challenges of the research organisation now in Ethiopia?

Regional, Zone, Woreda and Kebele Level Officials Interview Questions

1. Can you please explain how the ATP policies reach the Region, Zone and the process involves in reaching the people on the ground?
2. Can you please explain how the ATP policy reaches the Woreda and the implementation process?
3. Can you please explain how the ATP works at Kebele level and the implementation process?
4. What are the monitoring and evaluation systems in place at this level? (Region, Zone, Woreda and Kebele levels each had these questions).
5. Is policy top-down or bottom-up?
6. How are the bottom-up change policies for the people on the ground?
7. Does the policy works with what people want? According to their needs?

Phase Two Ground Level Interview Questions

Household Questionnaires

1. Name
2. Gender
3. Age
4. Do you have your own farm land or you are sharing?
5. How many harvests a year do you get?
6. Do you use an irrigation system? Rainwater fed? Both?
7. What is your source of energy for food production?
8. Do you use chemical fertiliser?
9. Do you use chemical herbicide and pesticide?
10. Do you use organic fertiliser and pest control?
11. Do you use the improved seeds or the natural seeds?
12. Is your productivity improving, declining or it is the same using the technologies and without using the inputs?
13. Are you involved in an off farm activities? If yes, what are they?
14. Would you say that you are food secured, eat at least 3 times a day?
15. Is there any conservation work in the area? Such as water and land management?

In-depth Interview Questions

1. Please discuss the new technologies that came through the ATP in the area to increase food productivity, such as improved seeds, fertiliser and pesticide and herbicide
2. Please discuss what you think the issues are in your area related to food security
3. Does the issue you mentioned go back to the government? And are there any changes happening?
4. What do you think the solutions are to these issues you have in the area related to food productivity and food security?
5. Is the government's policy top-down or it is bottom-up too? Please explain

6. Please discuss the changes and opportunities that came into the area to help you increase food productivity and food security other that the ATP plan? Such as technologies, roads, market access
7. What are the means on which you manage the water, land resources in the area?
8. What are the means of energy in the area and how do you manage it?
9. What is food security for you? How do you describe it?
10. What is well-being for you? How do you describe it?

Focus Groups Discussions

1. Please discuss the new technologies that came through the ATP in the area to increase food productivity.
2. Please discuss what you think the issues are in your area related to food security
3. Does the issue you mentioned go back to the government? And are there any changes happening?
4. What do you think the solutions are to these issues you have in the area related to food productivity and food security?
5. What is food Security for you? How do you describe food security from your perspective?
6. What is well-being for you?

Appendix 2: Interviews Conducted

Interview Codes

Policy Making and Policy Implementation Process Interviews

1. Part One (P1): The African Union Policy Making Process Interviews
2. Part Two (P2): The Ethiopian Government Policy Making Process Interviews
3. Part Three (P3): The Ethiopian Research Organisations Interviews
4. Part Four (P4): Policy Implementation Process Interviews

Policy Adoption and Effectiveness at the Ground Level Interviews

Dejen Woreda (DW)

Gelgele Kebele (GK)

Yetnora Kebele (YK)

1. Household Level Interview Participants (HHIP)
2. Focus Group discussion Interview Participants (FGIP)
3. In-depth Interview Participants (IIP)
4. Key-Informant Interview Participants (KIP)

Interviews Conducted

Code	Position/Description	Date Interviewed	Place
P1-1	NEPAD Agency Expert	April 2013	The African Union Headquarter, Addis Ababa
P1-2	CAADP Framework Representative	April 2013	The African Union Headquarter, Addis Ababa
P1-3	CAADP Food Security Specialist	April 2013	The African Union Headquarter, Addis Ababa
P1-4	NEPAD Water Management Expert	April 2013	The African Union Headquarter, Addis Ababa
P1-5	NEPAD Land Management Expert	May 2013	The African Union Headquarter, Addis Ababa
P2-1	GTP Policy Representative	May 2013	The Ethiopian Ministry of Agriculture, Addis Ababa
P2-2	ATP Policy Representative	May 2013	The Ethiopian Ministry of Agriculture, Addis Ababa
P2-3	The Ethiopian Research and Development Researcher (a)	May 2013	The Ethiopian Ministry of Agriculture, Addis Ababa
P2-4	Ethiopian Food Security and Emergency Preparedness Agency Director	June 2013	Main Office, Addis Ababa
P2-5	Ethiopian Seed Enterprise Agency Director	May 2013	Main Office Addis Ababa

P2-6	Ethiopian Development Agency Representative	June 2013	Main Office Addis Ababa
P3-1	The Ethiopian Agriculture Research Institute Director	June 2013	The Ethiopian Agriculture Research Institute Main Office, Addis Ababa
P3-2	The Ethiopian Agriculture Research Institute Soil and Water Management Director	June 2013	The Ethiopian Agriculture Research Institute Main Office, Addis Ababa
P3-3	The Ethiopian Seed Enterprise Agency Director	June 2013	The Ethiopian Seed Enterprise Agency Main Office, Addis Ababa
P3-4	The Research for Ethiopian's Indigenous Trees Founder	June 2013	4 Kilo Addis Ababa University, Addis Ababa
P3-5	The Ethiopian Social Research Officer (b)	June 2013	6 Kilo Addis Ababa University, Addis Ababa
P3-6	Architecture and Town Planning Lecture	June 2013	6 Kilo Addis Ababa University, Addis Ababa
P3-7	The Ethiopian Research and Development Researcher officer (c)	June 2013	The Ethiopian Research and Development Agency, Addis Ababa
P3-8	The Ethiopian Research and Development Researcher (d)	June 2013	The Ethiopian Research and Development Agency, Addis Ababa
P4-1	The Federal GTP Officer	April 2014	The Ethiopian Ministry of Agriculture, Addis Ababa
P4-2	Regional GTP, ATP Representative	May 2014	Bahrdar, Regional GTP Office, Gojjam
P4-3	East Gojjam Zone GTP, ATP Representative	May 2014	Debre Markos, Zone GTP Office, Gojjam

P4-4	Dejen Woreda ATP Representative	May 2014	Dejen Woreda ATP Office, Gojjam
P4-5	Gelgele Kebele ATP Representative	May 2014	Gelgele Kebele Office, Dejen Gojjam
P4-6	Yetnora Kebele ATP Representative	May 2014	Yetnora Kebele Office, Dejen Gojjam
P4-7	Extension Workers (3)	May 2014	Dejen Woreda
GHHI	Gelgele Farmer Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHH2	Gelgele Farmer Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHH3	Gelgele Farmer Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHH4	Gelgele Farmer Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHH5	Gelgele Farmer Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHH6	Gelgele Farmer Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHH7	Gelgele Farmer Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHH8	Gelgele Farmer Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHH9	Gelgele Farmer Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHH10	Gelgele Farmer Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHH11	Gelgele Trader Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHHI2	Gelgele Farmer Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHHI3	Gelgele Trader Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHHI4	Gelgele Farmer Participant	May 2014	Gelgele Kebele, Dejen Woreda
GHHI5	Gelgele Trader Participant	May 2014	Gelgele Kebele, Dejen Woreda

GHHI6	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHHI7	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHHI8	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHHI9	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHH20	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHH21	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHH22	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHH23	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHH24	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHH25	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHH26	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHH27	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHH28	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHH29	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
GHH30	Gelgele Farmer Participant	June 2014	Gelgele Kebele, Dejen Woreda
YHH1	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH2	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH3	Yetnora Trader Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH4	Yetnora Trader Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH5	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda

YHH6	Yetnora Trader Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH7	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH8	Yetnora Trader Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH9	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH10	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH11	Yetnora Trader Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH12	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH13	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH14	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH15	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH16	Yetnora Trader Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH17	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH18	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH19	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH20	Yetnora Trader Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH21	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH22	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH23	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH24	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH25	Yetnora Trader Participant	June 2014	Yetnora Kebele, Dejen Woreda

YHH26	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH27	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH28	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH29	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
YHH30	Yetnora Farmer Participant	June 2014	Yetnora Kebele, Dejen Woreda
GFG1	Gelgele Focus Group Participants: 1,2,3,4,5,6,	June 2014	Gelgele Kebele, Dejen Woreda
GFG2	Gelgele Focus Group Participants: 1,2,3,4,5,6,	June 2014	Gelgele Kebele, Dejen Woreda
GFG3	Gelgele Focus Group Participants: 1,2,3,4	June 2014	Gelgele Kebele, Dejen Woreda
GFG4	Gelgele Focus Group Participants: 1,2,3,4,5,6,	June 2014	Gelgele Kebele, Dejen Woreda
GFG5	Gelgele Focus Group Participants: 1,2,3,4,5,6, 7	June 2014	Gelgele Kebele, Dejen Woreda
GFG6	Gelgele Focus Group Participants: 1,2,3,4	June 2014	Gelgele Kebele, Dejen Woreda
YFG1	Yetnora Focus Group Participants: 1,2,3,4,5,6,7	July 2014	Yetnora Kebele, Dejen Woreda
YFG2	Yetnora Focus Group Participants: 1,2,3,4,5,6,7	July 2014	Yetnora Kebele, Dejen Woreda
YFG3	Yetnora Focus Group Participants: 1,2,3,4,5,6,7	July 2014	Yetnora Kebele, Dejen Woreda
YFG4	Yetnora Focus Group Participants: 1,2,3,4,5,6	July 2014	Yetnora Kebele, Dejen Woreda
YFG5	Yetnora Focus Group Participants: 1,2,3,4,5,6	July 2014	Yetnora Kebele, Dejen Woreda
YFG6	Yetnora Focus Group Participants: 1,2,3,4,5,6	July 2014	Yetnora Kebele, Dejen Woreda
GII1	Gelgele In-depth Interview Participant	June 2014	Gelgele Kebele, Dejen Woreda
GII2	Gelgele In-depth Interview Participant	June 2014	Gelgele Kebele, Dejen Woreda
GII3	Gelgele In-depth Interview Participant	June 2014	Gelgele Kebele, Dejen Woreda

GII4	Gelgele In-depth Interview Participant	June 2014	Gelgele Kebele, Dejen Woreda
GII5	Gelgele In-depth Interview Participant	June 2014	Gelgele Kebele, Dejen Woreda
GII6	Gelgele In-depth Interview Participant	June 2014	Gelgele Kebele, Dejen Woreda
GII7	Gelgele In-depth Interview Participant	June 2014	Gelgele Kebele, Dejen Woreda
GII8	Gelgele In-depth Interview Participant	June 2014	Gelgele Kebele, Dejen Woreda
GII9	Gelgele In-depth Interview Participant	June 2014	Gelgele Kebele, Dejen Woreda
GII10	Gelgele In-depth Interview Participant	June 2014	Gelgele Kebele, Dejen Woreda
YII1	Yetnora In-depth Interview Participant	July 2014	Yetnora Kebele, Dejen Woreda
YII2	Yetnora In-depth Interview Participant	July 2014	Yetnora Kebele, Dejen Woreda
YII3	Yetnora In-depth Interview Participant	July 2014	Yetnora Kebele, Dejen Woreda
YII4	Yetnora In-depth Interview Participant	July 2014	Yetnora Kebele, Dejen Woreda
YII5	Yetnora In-depth Interview Participant	July 2014	Yetnora Kebele, Dejen Woreda
YII6	Yetnora In-depth Interview Participant	July 2014	Yetnora Kebele, Dejen Woreda
YII7	Yetnora In-depth Interview Participant	July 2014	Yetnora Kebele, Dejen Woreda
YII8	Yetnora In-depth Interview Participant	July 2014	Yetnora Kebele, Dejen Woreda
YII9	Yetnora In-depth Interview Participant	July 2014	Yetnora Kebele, Dejen Woreda
YII10	Yetnora In-depth Interview Participant	July 2014	Yetnora Kebele, Dejen Woreda
GKI1	Gelgele Key-Informant Participant	June 2014	Gelgele Kebele, Dejen Woreda
GKI2	Gelgele Key-Informant Participant	June 2014	Gelgele Kebele, Dejen Woreda
GKI3	Gelgele Key-Informant Participant	June 2014	Gelgele Kebele, Dejen Woreda

GKI4	Gelgele Key-Informant Participant	June 2014	Gelgele Kebele, Dejen Woreda
GKI5	Gelgele Key-Informant Participant	June 2014	Gelgele Kebele, Dejen Woreda
YKI1	Yetnora Key-Informant Participant	July 2014	Yetnora Kebele, Dejen Woreda
YKI2	Yetnora Key-Informant Participant	July 2014	Yetnora Kebele, Dejen Woreda
YKI3	Yetnora Key-Informant Participant	July 2014	Yetnora Kebele, Dejen Woreda
YKI4	Yetnora Key-Informant Participant	July 2014	Yetnora Kebele, Dejen Woreda
YKI5	Yetnora Key-Informant Participant	July 2014	Yetnora Kebele, Dejen Woreda
DWKI1	Dejen Woreda Key-Informant Participant	July 2014	Dejen Woreda
DWKI2	Dejen Woreda Key-Informant Participant	July 2014	Dejen Woreda

Appendix 3: Pictures from the Study Villages

Picture 1: Community Meeting day, Gelgele Village: 2014

Picture 2: A Gelgele farmer with his donkeys after purchasing Chemical Fertiliser from the nearby town: 2014

Picture 3: A new Gypsum Factory in Gelgele Village: 2014

Picture 4: A Gelgele Farmer plaguing, rocky land; 2014

Picture 5: Gelgele Women's market day: 2014

Picture 6: Yetnora Kebele Men's market day

Picture 7: Yetnora Kebele Road link and Electricity: 2014

Picture 8: Yetnora Kebele Farmers plaguing, non-rocky flat land: 2014

Picture 9: Research assistants, walking towards households for interview: 2014

Picture 10: The research assistant, in Yetnora Kebele heading home after a long day: 2014

Picture 11: I the student, dedicating this Thesis to my Beautiful home town Dejen. The Blue Nile George, Ethiopia: 2014