



Food Security Situation in Ethiopia: A Review Study

Abduselam Abdulahi Mohamed

Department of Agricultural Economics, College of Agriculture and Veterinary Science, Ambo University, Ambo, Ethiopia

Email address:

abdisalan654@gmail.com, wwsale2010@gmail.com

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Abstract: Food security is a dynamic concept, which has continuously integrated new dimensions and levels of analysis over the years; this reflects the wider recognition of its complexities in research and public policy issues. Food security is achieved 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. Food insecurity occurs at individuals, households or nation level that has neither physical nor economical access to the nourishment they need. Food insecurity is an enduring, critical challenge in Ethiopia which is Africa's second populous country after Nigeria. The 2015 El Niño drought is one of the strongest droughts that have been recorded in Ethiopian history were more than 27 million people became food insecure and total population of 18.1 million people require food assistance in 2016. As indicated by Africa Food Security and Hunger Multiple Indicator Scorecard, Ethiopia ranked first in having the highest number of people in state of undernourishment which is 32.1 million people in 2014. World Food Program found long-term effects of chronic malnutrition cost Ethiopia approximately 16.5 percent of its GDP in each year. The number of food insecure people in the country increasing from time to time; which was estimated to 2.9 million in 2014 and 4.5 million in August, 2015 and by the end of the same year this figure had more than doubled to 10.2 million food insecure people. Drought and land degradation, population pressure, instability and armed conflict are major sources of food security problems in Ethiopia. To cope with these problems Ethiopian people use sale of livestock, agricultural employment, and migration to other areas, requesting grain loans, sales of wood or charcoal, small scale trading and limiting size and frequency of meal as major coping mechanisms.

Keywords: Food Security, Food Insecurity, Undernourishment, Drought, Shocks

1. Introduction

1.1. Background

Ethiopia is one of the most food-insecure and famine affected countries. A large portion of the country's population has been affected by chronic and transitory food insecurity [2]. The situation of chronically food insecure people is becoming more and more severe. Food security situation in Ethiopia is highly linked to recurring food shortage and famine in the country, which are associated to recurrent drought. According to [26] more than 41 percent of the Ethiopian population lives below the poverty line and above 31 million people are undernourished. By using the threshold of 2,550 kilocalories (Kcal) per adult equivalent per day, 40 percent of Ethiopian households for whom their majority reside in rural parts of the country were food insecure and undernourished [51].

Food insecurity is an enduring, critical challenge in Ethiopia which is Africa's second populous country after Nigeria. Over 80 percent of Ethiopian population live in rural areas and are heavily dependent on rain-fed agriculture; this makes them extremely vulnerable to changes in weather conditions [5]. The current El Niño drought conditions led to a sharp deterioration in food security; the estimated number of food insecure people was 4.5 million due to this vulnerable shock in August, 2015 [27], and by the end of the same year this figure had more than doubled. According to a Government-led multi agency assessment, 10.2 million Ethiopians are considered to be food insecure in 2015/16.

With 80 percent of its population dependent on rain-fed agriculture, Ethiopia is particularly vulnerable to weather-related shocks. Rain varies greatly by region and is particularly unpredictable [54] Although the Intergovernmental Panel on Climate Change (IPCC) predicts

only a modest change in Ethiopia's rainfall patterns in future [12] and [44] findings argue that this can still adversely affect very poor small farmers – especially if such decreases are concentrated in the growing season.

In the history of Ethiopian, drought-initiated production failures occurred in the 1984/85, and 1989/90s. According to [45] the 1984/85 drought is the most serious one by affecting over eight million people and causing the death of one million Ethiopian's. Three years of successive poor rains in pastoral areas of the country was led to 100,000 deaths in 1999-2000; crisis years were also experienced in different parts of the country in 2003, 2008, 2011 and 2013 [17].

In this direction, [10] reported that the 2015 El Niño drought is one of the strongest droughts that have been recorded in Ethiopian history were more than 27 million people become food insecure and total population of 18.1 million people require food assistance in 2016. Furthermore, there is evidence that climate is already changing leading to serious drought. The drought pattern has been 10 years in case for Ethiopia, but at present time the cycle period is becoming shorter and shorter which leads to serious food security problems in every three years.

Households with insufficient access to food often face other challenges related to food insecurity including poor health and a decline in productivity. These challenges can often create a *vicious circle* where households are unable to produce enough food, even in good years, because they are battling chronic health issues and are unable to work to their full potential. The gravity of food insecurity, and its many rippling effects, has led much of the development agenda to search for specific areas for intervention given limited resources and growing populations in many developing countries [35].

On 5 March 2015, the Government of Ethiopia released the 2015 Humanitarian Requirement Document (HRD). The document identifies humanitarian food and non-food requirements for vulnerable groups in the country following on the multi-sectoral ground assessment conducted at the end of 2014 [49]. According to HRD an estimated 2.9 million people require relief food assistance in 2015, an increase from 2.7 million for the same period in 2014. All of the above data indicate that food security situation in Ethiopia has been a long-standing challenge to the government, donors, and other international organizations.

1.2. Objectives

The overall objective of this study is to assess food security situation and its profile in Ethiopia.

Especially the study will try to:-

- Review food security and its dimension in the general context;
- Review the possible major sources of food insecurity in Ethiopia;
- Review major coping strategy used by rural households during food shortage.

1.3. Methodology

The design of this review study involves a qualitative and quantitative analysis of food security situation in Ethiopia. The data collected, interpreted and evaluated here comes from secondary data sources. Different authors and researchers have written on the issue of food security /food insecurity; many government and non-government agencies have produced reports on food security situation in Ethiopia. All these sources have been used to assess the current food insecurity, major sources of food security problems and coping mechanisms used by rural poor households in Ethiopia.

2. Discussions

2.1. Definitions and Concepts of Food Security

Food security is a dynamic concept, which has continuously integrated new dimensions and levels of analysis over the years. This continuing evolution of food security concept reflects the wider recognition of the complexities of concept in research and public policy, because of this food security issue has long history starting from time when global food crisis take place in the first half of the 1970s [11].

Food security is a concept that has evolved considerably over time and its definitions developed and diversified by different researchers, scholars and organizations. [33] There are approximately 200 definitions and 450 indicators of food security. Food security is such a complex notion that it is virtually impossible to measure it directly, and a variety of proxy measures have been suggested. Consumption and expenditure, nutritional status, coping strategies are the most frequently used measures of food security.

In the mid of 1970s and 1974s world food conference was held to solve the problem of world food crises and major famines around the world. Food security and insecurity are the terms used to describe whether or not households have access to sufficient quality and quantity of food. With progress in time and severity of the problem, food security issues gained prominence and great attention at the global, national, household and individual levels. Such progressive work by scientists led to redefining the scope and depth of food security concept. For instance, [19] explained the concept stating that food security at global level does not guarantee food security at the household or individual level.

Without much change in the basic concepts, different institutions and organizations define food security in different ways. According to [25] food security is a situation that achieved at the individual, household, national, regional and global levels 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. On the other hand, in the recent studies, food security is defined as adequate availability of and access to food for households to meet the minimum energy requirements as recommended for an active and healthy life [34].

Food insecurity is a situation which occurs at individuals, households or nation level that has neither physical nor economical access to the nourishment they need. Household is said to be food insecure when its consumption falls to less than 80 percent of the daily minimum recommended allowance of caloric intake for an individual to be active and healthy. In particular, food insecurity includes low food intake, variable access to food, and vulnerability- livelihood strategy that generates adequate food in good times but is not resilient against shocks. These outcomes correspond broadly to chronic, cyclical or seasonal, and transitory food insecurity, and all are endemic in Ethiopia [15].

Chronic food insecurity: is long-term or persistent in that it can be considered to be an almost continuous state of affairs. It is a continuously inadequate diet caused by the inability to acquire food. It affects households that persistently lack the ability either to buy enough food or to produce food by their own food production system [24], [32].

Seasonal or cyclical food insecurity may be evident when there is a recurring pattern of inadequate access to food such as prior to the harvest period (the „hungry season“) when household and national food supplies are scarce or the prices higher than during the initial post-harvest period [16], [32]. It is generally considered to be more easily predicted than temporary food insecurity as it is a known and regular occurrence.

Transitory food insecurity: on the other hand, is usually sudden in onset, short-term or temporary and refers to short periods of extreme scarcity of food availability and access [7], [32]. Such situations can be brought about by climatic shocks, natural disasters, economic crises or conflict. Experiences of transitory food insecurity may arise through smaller shocks at the household level, for example, loss of income and crop failure while not the normal state of affairs shocks can be severe and unpredictable [32].

According to 1996 World Food Summit 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”. Based on this definition [25] developed four main dimensions of food security which are food availability, food accessibility, food utilization and stability. Examining the dimensions of food security provides a more comprehensive picture, and can also help in targeting and prioritizing food security and nutrition policies and programmes.

Food availability: refers to the presence of food at global, national, household and individual level, example when “sufficient quantities of appropriate, necessary types of food from domestic production, commercial imports, commercial aid programs, or food stocks are consistently available to individuals or nations.” Hence, food availability is largely a function of macroeconomic factors [4]. The food availability indicators capture not only the quantity but also the quality and diversity of food. For assessing food availability, adequacy of dietary energy supply, share of calories derived from cereals, roots and tubers, average protein supply, and

average value of food production should be analyzed.

Food access: refers to the resources that households have to obtain foods, either through own production or through purchase. So, individuals need to have assets or incomes to produce, purchase in order to obtain foods needed to maintain their consumption. Hence, food access is largely related to household income and own production [4]. [39] food access depend on; income available to the household, the distribution of income within the household, the price of food in the market and other factors worth mentioning are individual’s access to the market, social and institutional rights.

Food utilization: refers to the nutritional benefits derived from food consumption which is related to proper food processing, storage techniques, adequate knowledge of nutrition; and adequate health and sanitation services exist. Hence food utilization is largely related to nutrition, health and sanitation [4]. The same to this [36] define food utilization as ‘proper biological use of food, requiring a diet that contains sufficient energy and essential nutrients as well as knowledge of food storage, processing, basic nutrition, child care, and illness management’.

Food stability: refers to the stability of all other dimensions of food security over time. Even if your food intake is adequate today, you are still considered to be food insecure if you have inadequate access to food on a periodic basis, risking a deterioration of their nutritional status. Adverse weather conditions, political instability, or economic factors (unemployment, rising food prices) may have an impact on your food security status [25]. Therefore, food security to be insured at global, regional, national, household, and individual level food stability should be maintained.

2.2. Food Security in Ethiopia

Ethiopia is the second most populous country in Africa with an estimated population of 94.3 million people in 2013 [13]. As indicated by Africa Food Security and Hunger/ Undernourishment Multiple Indicator Scorecard, Ethiopia ranked as first in having the highest number of people in state of undernourishment/ hunger which is 32.1 million people. This makes it, the fourth African country scoring (37.1%) of the population being undernourished/ in hunger [2]. The livelihoods of rural Ethiopian people are highly sensitive to climate. Food insecurity patterns are seasonal and linked to rainfall patterns, with hunger trends declining significantly after the rainy seasons. Climate related shocks affect productivity, hamper economic progress and exacerbate existing social and economic problems [4].

Food insecurity situation in Ethiopia is highly linked up to severe, recurring food shortage and famine, which are associated to recurrent drought. Currently there is a growing consensus that food insecurity and poverty problems are closely related in the Ethiopian context. Droughts and other related disasters (such as crop failure, water shortage, and livestock disease, land degradation, limited household assets, low income) are significant triggers, more important factors which increase vulnerability to food security and undermined

livelihoods [41].

Ethiopia has been a net importer of food for more than three decades. In the decade between 1985 and 1994, net domestic production of cereals that on average account for about 85 per cent of household food consumption ranged between 82.7 and 93.8 per cent of total supply. Even though, different factors are contributing to vulnerability of the country which includes rapid population growth with low per capita income, rain-fed agriculture, under-development of water resources, land degradation, low economic development, and weak institutions. Drought, human and livestock diseases as well as resource-based conflicts are aggravating factors for the food insecurity situation in Ethiopia [29].

[48] About 10 percent of Ethiopia's citizens are chronically food insecure and this figure rises to more than 15 percent during the frequent drought years. World Food Program found long-term effects of chronic malnutrition cost Ethiopia approximately 16.5 percent of its GDP each year. 2.7 million People will require emergency food assistance in 2014 and 238,761 children require treatment for severe acute malnutrition in 2014. Estimated number of food insecure people was 4.5 million August, 2015 and by the end of the same year this figure had more than doubled to 10.2 million Ethiopians.

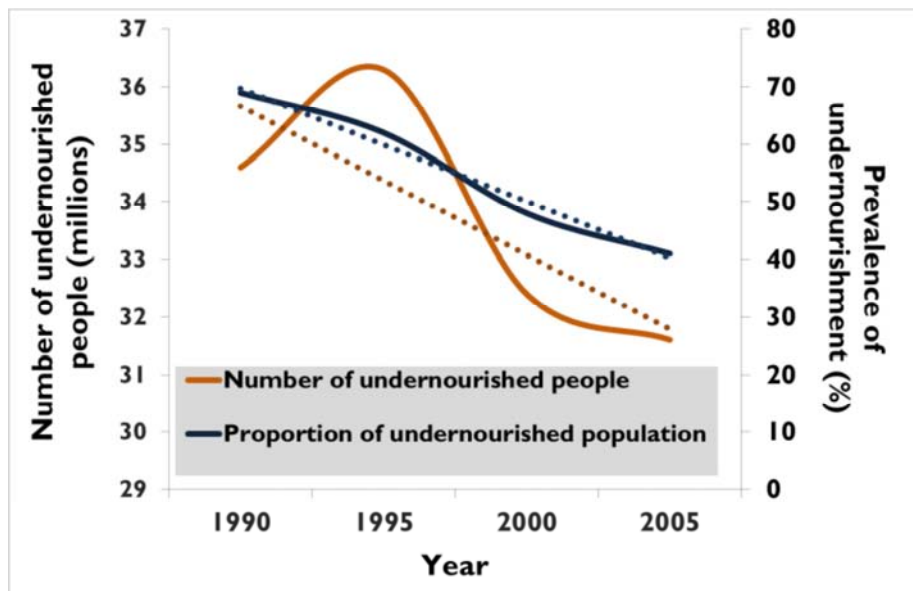
[6] found that factors contributing to the current of food insecurity includes production fluctuations, low non-farm employment, low income, regional fragmentation of the markets, high rate of natural degradation, low level of farm technology, high level of illiteracy and inadequate quality of basic education, poor health and sanitation, high population growth, poor governance and inter-state, intra-state military

conflicts and wars all these factors impede the achievement of food security and sustainable economic development.

As cited in [21] their review in Ethiopian food security situation assessment found that survey results of Goan Ethiopia and concern worldwide in two woredas of the Gambella regional state of Ethiopia's (Jikawo and Lare) indicated that the global acute malnutrition was 19.2 percent and 18.2 percent respectively. In the same way, deterioration of food security situation in Oromiya regional state is prevailed in Arsi zone. The affected woredas are Jeju, Diksis, Sude, Robe, Bilbilo, Sire and Guna. Poor performance of the belg seasonal rains led to shortage of pasture and water and poor development of planted crops.

The estimates reveal results: over 41 per cent of Ethiopian population is considered to be undernourished [26]. In addition, an estimated 7.6 million (or 11 per cent of the rural population) are currently considered chronically food insecure, meaning each year they are relying on resource transfers to meet their minimal food requirements. Over the past four years between 2.2 and 6.4 million additional people were food-insecure or not able to meet their food needs in the short term due to transitional factors. They are temporarily dependent on relief food assistance [27].

Both the number of undernourished people and the prevalence of undernourishment have declined steadily since 1990 ([23]; Figure 1). Even though, significant progress in reducing undernourishment was shown in the period 1990-2005, Ethiopia is faced one of the strongest drought shocks for many years like that of 2015 where 27 millions Ethiopian became food insecure and 18.1 millions dependent on relief food assistance [10].



Adopted from: FAO/WFP, (2012).

Figure 1. Trends of undernourishment in Ethiopia in period 1990/2005.

2.2.1. Vulnerability to Food Security Problems by Regions

In Ethiopia vulnerability to poverty and food insecurity has

strong geographical dimensions which indicate that variation between different regions of the country. One of the strongest predictors of food security problems and poverty in rural

Ethiopia is distance from market towns [4].

According to [56] Poverty Assessment; poverty rates increased by 7% with every additional 10km distance from a market town of at least 50,000 people. This indicate that rural households living far from towns are less likely to access fertilizer and other inputs, are less likely to benefit from gains in agricultural growth and more likely to be food insecure. In similar way, pastoralist regions like Somali, Afar and part of Oromiya region (Borana, Arsi and Bale zone) are more vulnerable than other parts of the country based on the definition of World Bank, due to their poor infrastructure, lack of market accessibility and livestock based livelihood.

According to [9] [56] report in all nine regions of Ethiopia, rural households were more likely to report food shortages, but the highest prevalence of perceived food shortages was found in Somali (25% of urban, 31% of rural), Southern

Nation Nationality People Regional (mainly rural at 37%), Gambela (mainly rural at 35%), and Amhara (mainly rural at 26%). Though food shortages are a subjective concept, it aligns to some degree with other more quantitative measures of food access, consumption and poverty level of households. There are meaningful differences between regions of the country.

Ethiopia can be classified in to five categories according to Ethiopian Development Research Institute (EDRI) based on their agricultural productivity and agricultural conditions those are: moisture-reliable lowlands, *enset* lowlands, drought-prone highlands, moisture-reliable highlands, and pastoral areas. Among these, drought-prone highlands, *enset* lowlands, and pastoral areas are currently targeted by PSNP due to Poverty, drought and other shocks vulnerability, and food security problems as outlined in below table.

Table 1. Classifications of Ethiopia by agricultural productivity.

Area classification	Absolute poor	food gap	Experience shock	Food poverty	Households in PSNP
Moisture reliable lowlands	0.45	0.31	0.87	0.32	0.10
Enset lowlands	0.29	0.36	0.75	0.14	0.59
Drought-prone highlands	0.28	0.25	0.46	0.15	0.69
Moisture-reliable highlands	0.32	0.13	0.63	0.12	0.24
Pastoral areas	0.31	0.21	0.31	0.21	0.22

Taken from: Hill and Porter, 2014; Anderson *et al.*, 2015.

From the above table, the Enset lowlands, Drought-prone highlands, Pastoral areas represent the most vulnerable and food insecure areas of the country, due to their vulnerability government of Ethiopia design food security programs like PSNP to provide food or cash transfer to chronically food insecure households in that areas. The highest households in PSNP indicate the more likely that area is vulnerable to drought, crop failure, livestock disease and other shocks that erode the productive assets of households and left them to be food insecure.

2.2.2. Food Security Policy Context

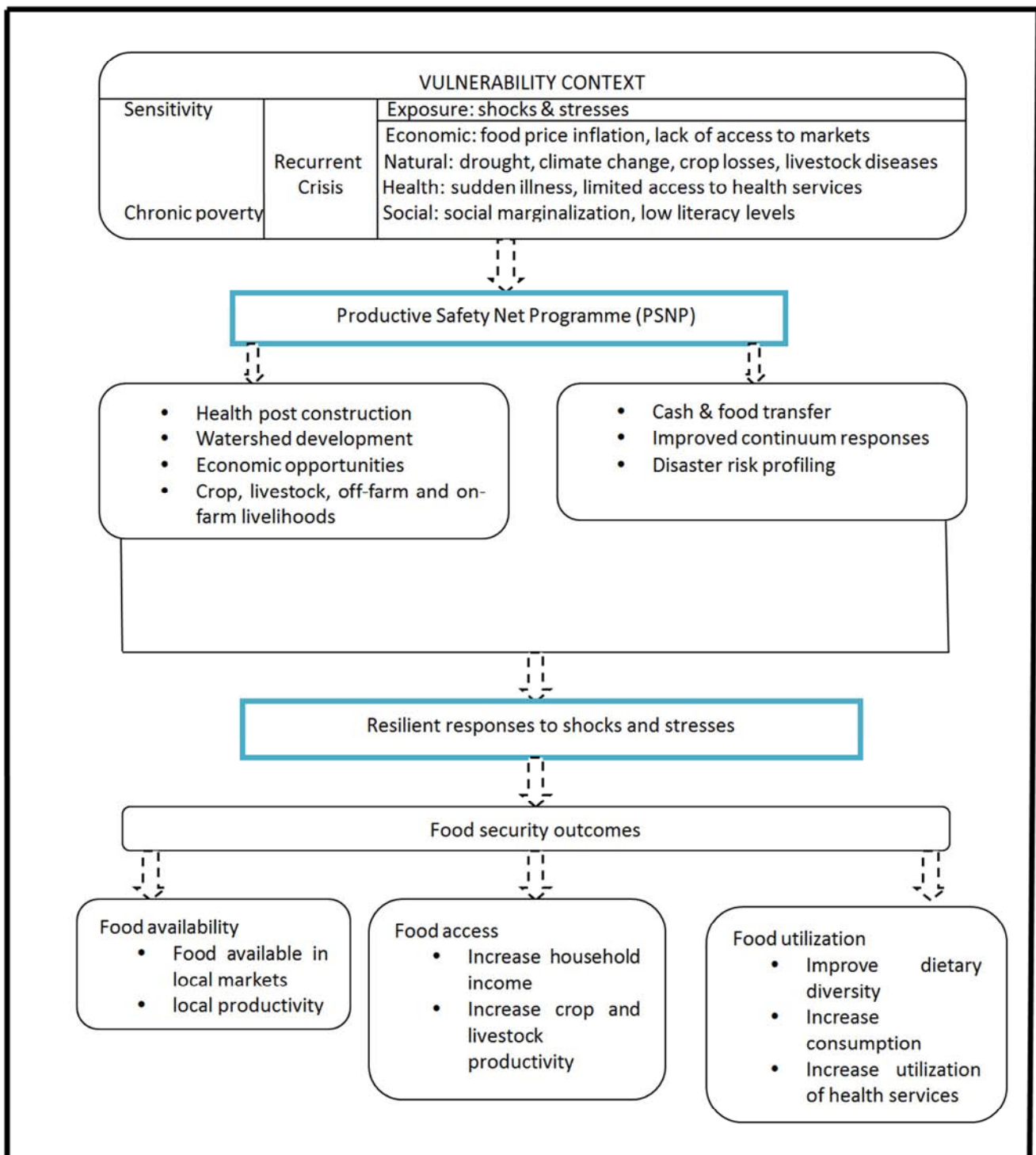
The government of Ethiopia made significant changes to its existing food security program, scaling up its level of intervention toward food security problems. In 2003, the government launched a large scale consultation process called the New Coalition for Food Security (NCFS) by incorporating with a large Productive Safety Net Program (PSNP) [41]. PSNP is a component of the Ethiopian government Food Security Programme (FSP), and is essential feature of the food security investment strategy for chronically food insecure Woredas, launched in 2005. The goal of the PSNP is food security status for chronically food insecure household's members through: direct grants to labor-poor, elderly or incapacitated individuals, and payments to able-bodied members for participation in labor-intensive Public Works activities [43].

The government was invested in many pro-poor strategies including the PSNP which was committed to reduce food insecurity. However, while maintaining internal stability, drought and other related disasters sustainable food security in the long term will be more challenging with a 2.5 percent

population growth rate which implies a doubling of the population in less than 30 years [4]. According to WFP one of the PSNP funding agents, Ethiopian Productive safety net programme operates in Afar, Amhara, Dire Dawa, Harari, Oromiya, SNNP, Somali and Tigray Regions. WFP and eight other development partners contribute to PSNP. The Ministry of Agriculture's Disaster Risk Management and Food Security Sector, along with regional governments, is responsible for programme coordination, management and implementation.

Launched in 2005, the program has grown from 4.5 million to around 7.6 million beneficiaries in 2012, or eight percent of Ethiopia's population; there were plans to reach 8.3 million people by 2015 [55]. However, planning PSNP to reach 8.3 million Ethiopian, the program succeeds to reach 7.9 million by 2015/16 according to Humanitarian Requirements report in Ethiopia. This indicates that the Ethiopian government and international NGOs are still facing great challenges in reducing food security and related problems in the country.

The PSNP targeted towards chronically food insecure households/districts, having accurately identified households that engage in activities which generate low returns and are mainly pursued by poor people. [8] PSNP participants have been poorer in both incomes and assets, and cultivated less land than non-beneficiary households the same is true for districts that are not covered by PSNP and other Ethiopian food security programs. According to World Bank one of the funding agents of PSNP a given households to included in the program should be chronically food insecure household as "having faced continuous food shortages (usually three months of food gap or more) in the last three years.



Source: USAID., (2015).

Figure 2. PSNP Links to Greater Resilience and Food Security.

This diagram illustrates the vulnerability context of PSNP households, which is characterized by chronic poverty as well as exposure to shocks and stresses, and how PSNP interventions improve food availability, access, and utilization, which are the pillars of the food security situation at individual, household, national, regional, and global levels.

2.3. The Causes of Food Insecurity in Ethiopia

Ethiopia has been suffering with drought and food insecurity problems for decades. There is no problem of underdevelopment that can be more serious than food insecurity, which has an important implication for the long term.

economic growth of low income countries. Ethiopia has been plagued with food insecurity for decades. The problem is worsening, despite massive resources invested each year into humanitarian aid and food security programs. Food insecurity in the long run may cause irreparable damage to livelihoods of the poor, by reducing self-sufficiency [22].

The causes of food insecurity in Ethiopia are many and interlinked each other but vary from one region to another. Study by [46] in rural part of the country found that major causes of food insecurity in Ethiopia as general includes natural disasters such as drought and climate change, population growth, land fragmentation and land degradation, lack of secured land tenure, lack of infrastructure, absence of functional multi party political system, and armed conflict with neighboring countries specially Eritrea and Somalia.

For decades both chronic and transitory problems of food insecurity are severe in Ethiopia. Chronic food insecurity exists due to the high ratio of urban unemployment and limitation of rural landholdings. More than one third of the households have less than 0.5 hectares, which under rain-fed agriculture, is adequate for subsistence production of food crops. Lack of draft animals like oxen intensifies the vulnerability associated with excessively smallholdings [28].

El Niño was expected to last at least until April/May 2016, exacerbating the food insecurity caused by the upcoming lean season. Over 15 million people are expected to be in need of humanitarian assistance in 2016. Poor households in affected areas in southern Afar and Sitti (former Shinile) zone in Somali region, in East and West Hararghe zones in Oromiya, and in Wag Hemra and North Wollo in Amhara region, are expected to remain in Emergency [49]. There is no doubt that drought is the main driving forces in food insecurity problems in Ethiopia, many more other disaster that contribute to food deterioration related to currently weather and climate changes.

The [21] were reviewed different studies that have been done on deteriorating situation of food insecurity in Ethiopia. These are population pressure, drought, shortage of farmland, soil erosion, lack of oxen, deterioration of food production capacity, outbreak of plant and animal disease, poor soil fertility, frost attack, chronic shortage of cash income, poor farming technologies, weak extension services, high labor wastage and poor social and infrastructural facility and pre and post-harvest crop loss. To scope the problem, the households respond to the problems caused by seasonal and disaster related food insecurity through sale of livestock, agricultural employment, and migration to other areas, requesting grain loans, sales of wood or charcoal, small scale trading and limiting size and frequency of meal.

A number of factors can explain the trend towards the increasing food insecurity situation in Ethiopia. The interaction between environmental degradation, high population growth, diminishing land holdings and lack of on-farm technological innovations led to a significant decline in the productivity per households and cause food security problems. These trends have combined with the repeated effects of drought over years, to substantially erode the

productive assets of communities and households [38].

The [30] finding indicated that Ethiopian populations have experienced long periods of food insecurity which directly related to several factors which include recurring droughts and also farm lands degradation, soil erosion, inappropriate storage agricultural facility, less purchasing power of households, small and fragmented land size, lack of off-farm income opportunity. These factors have limited the household's ability to have physical and economic access to sufficient, safe and nutritious food that is necessary to meet their dietary needs and food preferences for an active and productive life.

Food insecurity in Ethiopia is persistently caused by a combination of factors that include recurrent drought which has increased in frequency of every 3 to 5 years; the flooding that has become more frequent in flood prone areas along the main river basins. Small land holdings with an average of 0.5 to 2 hectares per household associated with population growth has resulted in land degradation as one of the most critical problems especially in the north eastern, south central and eastern highlands [52]. According to [18] chronic food insecurity situation in Ethiopia is frequently aggravated by (unexpected) shocks such as drought. During the normal years, on average, over 5 million people have been affected by drought related factors. On the other hand the transitory food insecurity is aggravated by a sharp reduction in domestic or imported supply of food because of crop failure, civil war and interruptions in food trade.

The food insecure situation in Ethiopia include: the urban unemployed, people in areas of conflict, destitute peasants, pastoralists who depend on markets for cereal supply and the refugees from neighboring countries, mainly from Somalia and South Sudan. A number of studies have confirmed that there is severe food insecurity in Ethiopia covering a wide range of areas and affecting a large number of people [28]. Food security situation in Ethiopia deteriorated by intra-and-inter-state military conflict and war, different studies indicated that Ethio-Eritrea war and recurrent drought eroded the country resources which become the main causes of food security problems during 1999-2000, pastoralist community in the country come into the conflict due to the control over the pasture and water resources.

Ethiopia has relative political stability in Horn of Africa, however several areas are insecure. UNICEF, 2016 reports suggest that from clashes between government forces and the Ogaden National Liberation Front which was persisted since 1994 in Somali region up to mid-December 2016, the resent violent protests broke out in the Oromiya region, against the urban planning strategy of the government to expand the Addis Ababa city's urban territory many millions of Ethiopian citizens faced difficult to get food from market and through their own production. This indicates that conflict and civil unrest is the major sources of food insecurity problems and lead to serious disaster in Ethiopia, by disturbing the country ongoing economic growth and development progress.

In recent studies by [31] found that Ethiopia has

experienced an unprecedented inflation of food prices, particularly concerning cereal prices, which have been among the highest in Sub-Saharan Africa. Rising food prices hit especially poor people rural part of the country, because they have to spend a higher share of their income on food items. Rising food prices therefore decreases their real income substantially, often with negative consequences for their food and nutritional status.

In the past history of Ethiopia, food price inflation was associated with high variations in agricultural outputs mainly caused by recurring droughts. However, the empirical study of [37] reveals contrary findings, by stating that: “*growth of food prices in Ethiopia is determined by external sector. In other words, the exchange rate and international prices explain a large fraction of Ethiopia’s inflation*”. While the debate on the causes for the hike of food prices in Ethiopia is still ongoing, [56] report indicate that food price has significant impact on food consumption status of Ethiopian population.

[40] cited in [21] argue that immediate causes of food insecurity in Ethiopia include frequently recurring droughts and erratic rainfall patterns, ecosystems degradation, rapid population growth, the low levels of technology employed in agriculture and the resulting low productivity of the sector, poor rural infrastructure and legacies of the past policy constraints are also considered as basic causes of food insecurity and widespread poverty in the country.

Combinations of natural and man-made have resulted in this serious and growing food insecurity problem in many parts of the country.

Food insecurity is a critical challenge for rural households in Ethiopia, different studies on different parts of the country indicate that the main sources of food insecurity in the country are drought and weather related shocks and disasters. [1] the most common causes of food insecurity problem in Sub-Saharan African countries which Ethiopia is the first and other third world countries were; drought and other extreme weather events, pests, livestock diseases and other agricultural problems, climate change, military conflicts, lack of emergency plans, corruption, and political instability, cash crops dependence, aid and rapid population growth. These factors deplete the productive assets of rural households and cause adverse effects on household’s food security status and all are endemic in Ethiopia.

Studies and discussions about causes of Ethiopian food insecurity problem is very complex concept to be addressed; this is why different scholars and researchers given those multiple factors such as Environmental degradation, rapid population pressure, and conflict are deteriorating food security situation in the country. However, different researchers agreed on drought remain one of the key drivers of food insecurity in Ethiopia. Since 1950, the country experienced more than twelve drought-induced food security crises [50].

Table 2. Chronology of drought-related food security crises in Ethiopia.

Year of event	Major relative incidences
1953	Food security crisis in Wollo and Tigray. Raya Azebo is the most vulnerable from Tigray.
1957-58	Food security crisis in Tigray, Wollo, and south-central Shewa. About 1 million farmers in Tigray might have been affected, with about 100,000 being displaced.
1962-66	Many parts of the northeastern Ethiopia suffered from droughts and Food security crisis. Tigray and Wollo were severely hit.
1973-74	This was one of the most significant food security crises which affected parts of eastern Harare, SNNPR and the Bale lowlands. About 100,000 to 200,000 people died as a result of this extensive crisis.
1977-78	Most parts of the Wollo were severely hit by food security crisis owing to erratic rainfall, pest damage, and frost actions. About 500,000 farmers were affected.
1984-85	This was the most serious one by affecting over eight million people and causing the death of one million Ethiopian’s. Most parts of Ethiopia including relatively food secure areas like Wolayta, Kambata and Hadiya were affected by severe food insecurity. Drought and crop diseases were the main drivers of the food security crisis in this case.
1987-88	Tigray, Wollo and Gonder were severely affected due to drought and civil wars.
1990-92	Rain failure and regional conflicts resulted in approximately 4,000,000 people being affected.
1993-94	Widespread food insecurity, but few deaths or cases of displacement were reported because of early responses by the government and international aid organizations.
1999-2000	Three years of successive poor rains in Somali region was led to 100,000 deaths of citizens.
2003-04	Over 13 million people affected, but the response mitigated the worst potential outcomes.
2008-09	Almost 3 million people were affected in which majority from pastoral areas of the country.
2011-13	Severe food security crisis occurred in the south-eastern lowlands. In pastoralist area of Afar, Somali and Borana (Oromiya) the quality and quantity of livestock was decreased.
2015-16	Consecutive failure of two rainy seasons has had profound impact on the lives and livelihoods of millions. Due to El Niño drought more than 27 million people become food insecure and total population of 18.1 million people required food assistance in 2016 and totally over 40 percent of Ethiopian population have been affected. This was the strongest drought that has been faced in Ethiopian history. But numbers of deaths due this shock were not reported.

Taken from: [Catleyet *et al.*, (2016), DFID (2014), Webb *et al.*, (1992)]

From the above table we can conclude that in every two or three years Ethiopia faces one drought year that leads to huge food crises and loss of millions of livestock numbers but also human death in different drought-prone parts of the country.

The 1984/85 was serious drought as reported by different agencies like [45]. However, that of 2015/16 is the strongest drought in the history of the country this indicates vulnerability to drought in Ethiopia increasing from time to time.

2.4. Household's Coping Strategies Practiced in Ethiopia

Coping strategy is defined by different scholars in different contexts. The most common recently used is the definition of coping strategy as a mechanism by which household or community members used to meet their relief and recovery needs and adjust to future disaster related risks and shocks by themselves without depending on any external support [46]. Household's coping strategy determined by level of household food security situation, when individual or households faced extreme hunger and starvation for long period of time it may lead to adopting negative coping strategies of food insecurity like minimizing food frequency and going without food for two up to three days as indicated by many research findings in Ethiopia.

Pastoral and Agro-pastoral areas of the country are more vulnerable to drought, weather related shocks, livestock and human diseases than other parts of the country because of this; they move from one place to others specially in dry seasons in order to find water and pasture for their livestock's which leads them some times to come into conflict with other border flood community. [3] made a research on agro-pastoralists in Babile district of Somali regional state and he found that agro-pastoral community in that area use alternative coping mechanisms such as: moving from one place to other in dry season, sale of more livestock than usual, borrowing of food, reduce number of meal, reduce size of meal, sale firewood and charcoal, seasonal migration, seeking alternative or additional job, rely on less preferred and less expensive food, seeking relief assistance, becoming temporary trade, household splitting, consume wild food, remittance, participating in cash basis project works.

[47] research findings in Gera Keya Woreda of Amhara regional state (Giragn and KimirDinagykebeles) argues that majority of the farm households in this area have responded the reduction in the number of meals per day as their major coping mechanism at times of moderate level of food shortage 82 percent and 90.1 percent respectively. This study indicated that coping strategies practiced at the moderate stage of food shortage in general includes, sale of small ruminants and buy grain, sale fire wood and buy grain, engage in wage labor, cultivate and sale of vegetable crops, sale wool and carpets and buy grain, engage in petty trading, sale oxen/cows and buy grain, reduce the number and type of meals, go hungry for up to two days, sale property, eat crops reserved for seed, borrow some money or grain from acquaintances (relatives, neighbors), move to other place to search of temporary employment, migrate to other area permanently were practiced at the severe stage.

Coping mechanisms used by rural farm households in Ethiopia includes livestock sales, agricultural employment, certain types of off-farm employment and migration to other areas, requesting grain loans, sale of wood or charcoal, small scale trading, selling cow dung and crop residues, reduction of food consumption, consumption of meat from their livestock,

consumption of wild plants, reliance on relief assistance, relying on remittances from relatives, selling of clothes, and dismantling of parts of their houses for sale [14]. Some of the coping strategies are likely to be implemented only after the possibilities of certain other options have been pursued.

In Ethiopia vulnerability of food insecurity and other disasters has strong geographical dimensions which indicate that variation between different parts of the country. However, different researches in different regional administrations of the country show that food insecure households in Ethiopia use almost the same food insecurity and other disasters coping mechanisms irrespective to their geographical variation and livelihood strategies.

3. Conclusions and Recommendations

Ethiopia is facing a massive drought and food insecurity crisis over the years. Drought, recurring food shortage and famine are great challenges faced by Ethiopian people. Different studies on current food security situation in the country show that there is a growing consensus that food insecurity, famine and poverty problems are closely related in the Ethiopian context in which drought and weather related shocks are the main driving forces.

A large portion of the country's population has been affected by chronic and transitory food insecurity. More than 41 percent of the Ethiopian population lives below the poverty line and above 31 million people are undernourished. The situation of chronically food insecure people is becoming more and more severe. Similarly, the number of food insecure people in the country recently increasing; which was estimated to 2.9 million in 2014 and 4.5 million in August, 2015 and more than doubled to 10.2 million at the end of the same year. Consequently, 27 million Ethiopian became food insecure as a result of 2015 El Niño drought and 18.1 million dependent on relief food assistance in 2016 out of this 7.9 million supported by Ethiopian government Productive safety net program (SNP).

A number of factors can explain the trend towards the increasing food insecurity situation in Ethiopia. The interaction between environmental degradation, high population growth, diminishing land holdings, outbreak of plant and livestock disease, chronic shortage of cash income, poor social and infrastructural facility, instability and armed conflicts, pre and post-harvest crop loss and lack of on-farm technological innovations led to a significant decline in the productivity per households and cause food insecurity and starvation. These trends have combined with the repeated effects of drought over years, to substantially erode the productive assets of rural households. To cope with these disasters households response to the problems through sale of livestock, agricultural employment, and migration to other areas, requesting grain loans, sales of wood or charcoal, small scale trading and limiting size and frequency of meal. Almost, in all nine regional administrations of Ethiopia rural households use the same coping strategies to cope with food insecurity and harsh life.

Drought does not necessarily lead to food insecurity and famine in developed nations because the institutions and resources needed to combat the disaster are already in place; likewise, food production in developed economies takes places in commercial farms using irrigation, not rains. However, Ethiopia due to its poor institutional forms and dependency on rain-fed agriculture as a main stay of its economy the country is vulnerable to drought which leads to loss of rural household's lives and livelihoods in every three years.

To make considerable improvement on food security situation in Ethiopia the following measures and actions should be taken by household heads, government of Ethiopia, national and international organizations. The households and productive aged members of the household should participate in different income generating activities and diversify their livelihood strategies that help them to escape from wider state of food insecurity and undernourishments; the government of Ethiopia should have to invest more on pro-poor development programs such as PSNP and improve social accountability to increase the ability of citizens to provide feedback on the services they receive; the international NGOs, local organizations, private sector and government should continue to work together on strengthening the livelihoods, rural market structures and providing the climate resilience services that improve the ability of poor households to cope with shocks.

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