



Review Article

A Review of Factors Affecting Food Security Situation of Ethiopia: From the Perspectives of FAD, Economic and Political Economy Theories

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ABSTRACT

The objective of the study was to review the concept and theoretical outlook of food security, the food security situation in Ethiopia, and the major cause of food insecurity in Ethiopia. The assessment was based on intensive reading of both published and unpublished documents. Finally, the data were presented in narration form. The review indicates that Ethiopia is chronically and seasonally food insecure country. Nearly 33 million people are suffering from chronic undernourishment and food insecurity. Different studies indicated that the status, depth and severity of food insecurity in Ethiopia are dynamic. The problem is compounded by backward agriculture, land degradation, drought, population pressure, poor infrastructure facility and low level of off-farm/non-farm activities. To ensure food security in Ethiopia, the development workers should create awareness for the community about family planning, soil conservation practice, technology adoption and rainwater harvesting to reduce the problem caused by drought and erratic rain fall. Agricultural and non-agricultural employment, livelihood adjustment and livelihood diversification should be enhanced.

Key words: Food security, Food insecurity, Drought, Ethiopia

INTRODUCTION

Back ground of the review

Food is both a need and a human right. Enough food in terms of quantity and quality for all people is an important factor for a healthy and productive life as well as for a nation to sustain its development (GAO, 2011). In addition, food is useful for maintaining political stability, and insuring peace among people (Idrisa *et al.*, 2008). Lack of food in long terms will lead to hunger and starvation that can cause death. So that enough food is a necessity condition to be well nourished. However, according to IFAD (2011) finding about 1.4 billion people in the world were living on less than US\$1.25 a day. Out of this, about one billion of them live in rural areas where agriculture is their primary source of livelihood, especially sub-Saharan Africa and Southern Asia. Furthermore, about 805 million people are estimated to be chronically food undernourished in 2012-2014, but it also figured out that reduction in more than 100 million over the last decade and 209 million lower than 1990-1992 (FAO, 2014). The same study conveyed that in the same

period, the prevalence of undernourishment has fallen from 18.7 to 11.3% globally and from 23.4 to 13.5% for developing countries. Moreover, 791 million people in developing countries were estimated to be chronically hungry in 2012-14, down by 203 million since 1990-1992 (FAO, 2014). As to AFSH (2014) finding, Sub-Saharan Africa has the highest prevalence of undernourishment and the prevalence of under nourishment declining from 32.7% to 24.8% over the last two decades. According to the same finding Ethiopia was ranked first in terms of number of people in a state of hunger/under nourishment (32.1 million people), followed by Tanzania (15.7 million); Nigeria (12.1 million); Kenya (11 million) and Uganda (10.7 million), respectively, among sub-Saharan African countries.

Particularly, poverty and food insecurity are crucial and pertinent problems facing the majority of Ethiopians as the economy is mainly dependent on agriculture which is vulnerable to different shocks, seasonality and trends (Bedemo *et al.*, 2014). In the country about 26% of the population lives below the poverty line (UNDP, 2014) and many people died of drought than other problems

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particularly in the periods of the registered and documented recurrent drought epidemics. The country has been facing challenging problems ranging from those induced by environmental crisis to those caused by demographic and socioeconomic constraints that adversely affect people's production system (World Bank, 2008). Moreover, as to FAO (2012) finding the majority of food insecure people in the country resides in the rural areas. About 52% of the rural population and 36% of the urban population consume under the minimum recommended daily intake of 2100 kcal/ person /day. To reverse this problem, the government has been and is formulating and implementing various strategies as well as programs like productive safety net program, ADLI and GTP phase 1 and 2 in which food security strategy is a key component of these programs. In addition, to reduce the incidence of food insecurity households use different kinds of coping mechanisms so as to improve their livelihood. Due to improvement in different kinds of livelihood assets as well as investment strategies and policies there is improvement in households food security status and there is still room for improvement, but it should be supported by location specific empirical evidence (Gemechu *et al.*, 2015). Therefore, assessing food security situation of the country using empirical evidences and identifying the major determinants of food security, which bases theories, provides important information to policy makers, planners and other concerned bodies to intervene and improve the food security situation of the country. Thus, this review work assesses the food security situation and identifies the major causes of food insecurity in Ethiopia.

Objectives of the review

The overall objective of this paper was to assess the food security situation and identify the major cause of food insecurity in Ethiopia. Specifically, the review has addressed the following objectives:

- to review the concept and theoretical outlook of food security;
- to review the food security situation in Ethiopia; and
- to review the major causes of food insecurity in Ethiopia.

LITERATURE REVIEW

Food Security Concept and Definition

Food security is a 'Flexible Concept' as reflected in the many attempts at definition in research and policy usage. The continuing evolution of food security as an operational concept in public policy has reflected the wider recognition of the complexities of the technical and policy issues involved (Clay, 2002).

Food security concept originated in the mid 1970s during the international discussion on global food crisis. The initial focus of food security attention was primarily on food supply problems of assuring the availability and to some degree the price stability of basic food stuffs at the international and national level (FAO, 2005). Thus, in the 1970s the issue of food security referred to the national food supply's capacity to meet the population's energy and nutrient needs. The concept of household food security has been understood by many development workers as the availability of food in the world market

place and on the food production systems of developing countries (Bedeke, 2012).

Since the World Food Conference in 1974 due to food crises and major famines in the world, the term "Food Security" was introduced, evolved, developed and diversified by different researchers. Food security and insecurity are terms used to describe whether or not households have access to sufficient quality and quantity of food. Food security issues gained prominence in the 1970s and have since been given considerable attention. It is perceived at the global, national, household and individual levels. Food security at global level does not guarantee food security at the national level. Moreover, food security at the national level does not guarantee food security at the household or even the individual level (Duffour, 2010).

Different authors and organizations defined food security in a variety of ways. With regard to this, there are approximately 200 definitions and 450 indicators of food security. However, the most comprehensive definition comes from FAO (2004) stating "Food that is available to everyone at all times, that they have means of access to it, that it is nutritionally adequate in terms of quantity, quality and variety, and is acceptable within the given culture. Only when all these conditions are in place it can be said that a population is food secure". Absence of any of these conditions at household, regional and national levels causes food insecurity. It can be considered as severe food insecurity when food intakes are continuously insufficient to meet the daily dietary energy requirements leading to a most severe stage of food insecurity called as 'hunger'. Due to food insecurity, at a global scale, the number of undernourished people have increased from 848 million (during 2003 to 2005) to 925 million in 2010 (FAO, 2010b).

Theoretical Perspectives on Food Security

The emergence of the concept of food security very much relates to the political (policy) concerns towards combating an increasing malnutrition and famine at global level. The early years of the 1970s was when the proportion of the malnourished world population was higher than ever before. This was why the UN/FAO took the initiative to call upon the world nations to take part in the First World Food Conference in 1974, which adopted the Universal Declaration on the Eradication of Hunger and Malnutrition. The declaration proclaims that: 'Every man, women and child has the inalienable right to be free from hunger and malnutrition in order to develop fully & maintain their physical and mental faculties' (UN, 1975).

Hence, the main emphasis was placed on how to enable the world able to feed every individual, at global level, and what should every nation do to become food self-sufficient. In other words, the main issue was how enough food can be made available to eradicate hunger. These questions have indeed attracted academic efforts, particularly a concern to identify and understand predicaments that hinder nations to produce sufficient food and how to enable each person to access adequate food. Thus, the issue of food security has therefore become central to academic research. To this effect, many studies have been conducted with the aim of identifying explanations for food insecurity, particularly in various

regions of the world where food insecurity has been the prevalent problem. Blaikie *et al.*, (1994) comment: 'the study of famine has almost become an academic industry'. This has contributed to the formulation of food security theories with different perspectives. In fact, there have been considerable shifts in thinking and concern regarding food security over the last several decades.

Following the First World Food Conference, the main emphasis of the world nations was on increasing or expanding domestic food production where the potential exists, as well as on creating a favourable situation under which nations can easily import food to bridge the gaps. The following definition of food security by the UN (United Nations, 1975), that put food availability as central concern, is cited in Maxwell (1996: 156): 'Availability at all times of adequate world food supplies of basic food-stuffs ... to sustain a steady expansion of food consumption ... and an offset fluctuations in production and prices'. According to this definition, a nation that can make sufficient food available from either domestic production, import or a combination of the two was regarded as attaining food security. Nations were urged to put in place appropriate development strategies that enable them to be food self-sufficient. Research efforts were directed towards understanding the main constraints to increase agricultural production, and thereby result in sufficient food availability at national level. The outcome of these efforts was the emergence of the theory of the Food Availability Decline (FAD). According to this theory, a decline in food availability may be attributed to various factors, specifically demographic (rapid population growth, and a number of related factors such as diminishing of per capita livelihood resources, land fragmentation and competition over resources) and natural hazards, including drought, flood, pest and, crop and livestock diseases. FAD theories based on demographic and climatic factors are discussed in the following.

Demographic theories: population growth versus food availability

There exist two divergent and competing theories regarding the relationship between population growth and food availability. The first one argues that population growth takes place 'geometrically', while production and means of subsistence increase only 'exponentially'. So, unless population increase is checked, food production increase cannot keep pace with it. This notion is originally the work of Thomas Malthus, who regarding the threat advanced the theory of rapid population growth as a cause of food shortage (famine) (Malthus, 1798). The central argument of the Neo-Malthusian theories is the superior power of populations to expand in general must tend to be kept in check by the requirement of food and other necessities, the production of which cannot be increased rapidly. As a result, hunger and other forms of human poverty and misery are inevitable consequences of the pressure of population growth on the limits of productive capacity (Millman and Kates, 1990).

Malthus' theory is criticized in two ways. First, the theory fails to allow for technological improvements in agriculture, which would enhance agricultural productivity. It has been long since many countries in the

world were able to achieve faster economic growth than the rate at which their populations increase. Second, Malthus did not foresee the transport and communication revolutions (Devereux, 1993). Despite this, Malthus' theory has still practical relevance to the situations of some Third World countries, such as Ethiopia, India, China, and Indonesia. This is why these countries are still attempting to issue and implement the neo-Malthusian 'restrictive population policies'.

The second set of theory regards large population size as a positive stimulus for growth. Within this school of thought, the work of Karl Marx is remarkable. He looked into the relationship between population and production, although his model is somehow specific to the context of the capitalist mode of production. Marx disagreed with Malthus, finding the roots of hunger and other forms of human misery in relation to oppression and exploitation tied to the organization of production (Millman and Kates, 1990). Neo-Marxist line of thinking since 1960 has attempted to study poverty and resultant food insecurity by examining the structure of society.

Ester Boserup (1965) has developed a theory which is essentially contra-Malthusian. Her theory demonstrates the relationship between population growth and the transformation of agriculture. Boserup sees population growth as a force favouring an adoption and diffusion of technological innovation that expands agricultural production, thereby reducing vulnerability to food insecurity and hunger. She argues that the positive effect of population concentration is by making financially feasible investments in infrastructure (water and irrigation, energy, transport, and improved production technologies) (Boserup, 1965). Thus, the two competing theories have remained the important research hypothesis in investigating the link between population increase and food production.

Climatic theory: drought and flood

Drought or flood causes crop failure and can lead to famine in rain-fed agricultural areas. Both scarcity and excessive water have adverse effect upon crops and livestock, the assets which form the main source of livelihood for subsistence peasants. This is witnessed by many famine disasters that had caused the deaths of millions of people in sub-Saharan Africa and South Asian countries over several decades. For instance, the Ethiopian famines in 1958, 1973, 1984, and 2002-2003 are partly explained by drought and resultant crop failures and massive deaths of livestock. Harrison (1988) indicates that 21 countries in Africa experienced severe drought during 1984-85 and, as much as any other factor, this was responsible for the widespread famine over the continent at that time. Drought manifests itself not only in reducing production, but also through the adverse effect it brings about in terms of reducing rural employment and drastic increases of food prices on market. Although many socio-political factors accounted for part of the explanation, the Bangladesh famine in 1974 was triggered by flood that disrupted rice production (Devereux, 1993).

Economic theories

There are two economic approaches to explaining food insecurity: Food Entitlement Decline (FED) and

'market failure'. The FED model is pioneered by Amartya Sen (1981) as an alternative method to FAD. His theory has brought about a shift in famine analysis, from seeking explanations for the short supply to the identification of symptoms of the failure in demand. It suggests that food availability in the economy or in the market does not entitle a person to consume, and famine can occur without aggregate availability decline. Sen presents a range of evidence for his argument: the Bengal famine of 1943, the Ethiopian famines of 1973 and 1984 and the Bangladesh famine of 1974. He believes that it is access to food that plays a crucial role in securing command over food, which in turn is determined by source of entitlement to food. The four possible sources of entitlements are production-based, trade-based (exchange), own-labour, and inheritance and transfer. An issue relating to access at individual level resulted in the formulation of a new definition for food security: 'Access by all people at all times to enough food for an active, healthy life' (World Bank, 1986: 1).

One of the strong points of the FED approach, which distinguishes it from FAD counterpart, is the potential capacity to identify which group of people will be affected by various threats of availability or access to food, differentiation depending on the degree of vulnerability (Maxwell and Smith, 1992). However, the model has certain weaknesses to be addressed before directly applying it as a framework to a study of food security. The main limitations of the FED model include: failure to take into consideration intra-household distribution of food; exclusion of relief entitlement (aid food), a source that can be mobilized when conventional sources fail; concentration on proximate causes of famine, such as market prices, rather than addressing underlying causes; heavy focus on food deprivation, and presumption that famine mortality is induced by starvation; omits all non-legal transfers of resources, hence the role of violence and social disorder leading to entitlement collapse; failure to give attention to the significance of cultural preferences and tastes in determining voluntary under-consumption when entitlement is adequate; and no temporal dimension and the analysis is a historical and cannot account for changing vulnerability to entitle failure (Maxwell and Smith, 1992; Devereux, 1993).

Devereux (1993) has introduced another possible economic explanation for food insecurity. This is specifically related to market failure, which can happen in two ways: demand (pull failure) and supply (response failure). Pull failure refers to people's lack of purchasing power which is caused by poverty and can therefore be explained in terms of lack or collapse of exchange entitlements to food. In contrast, response failure can happen when markets fail effectively to meet people's demand (Devereux, 1993). This is a very important input because, to some extent, the idea reconciles one of the many conflicts between the proponents of FAD and FED.

Political economy theory

The concept of political economy in its current uses in development studies refers to interrelations between society and government actors. Policies as government actions and economic processes as determinants of people livelihood are interrelated, and they act as the link

between government and public. In the light of this, there are certain hypotheses which have not yet been recognized to the status of fully-fledged theories of famine, and are regarded by some authors as general explanations to food shortage. These include ecological degradation, inappropriate development strategy, government policy, and war and civil strife. Although this notion has been highly questioned recently, there is an argument that relates the recurrence of famine in Western Sudan to ecological degradation, in particular the expansion of the Sahara Desert into the arable land, exposing vulnerable people to famine (Devereux, 1993). Dependency theorists also argue that poverty and famine have exacerbated colonial and post-colonial relationships between poor countries in Africa, Latin America and Asia on the one hand, and the rich capitalist countries of Europe and North America on the other. This is a good example of how inappropriate development strategy marginalizes the poor (Ghosh, 2001). Famine in India during late 19th century and 1940s would rightly illustrate this issue. Lack of good governance also contributes to the occurrence of famine. Dreze and Sen (1989: 6) argue that 'many famines in the world have actually arisen from and been sustained by inflexible government policies undermining the power of particular sections of the population to command food'. Governments contribute to the occurrence of famine through four ways: inappropriate policies (Sahelian famines); failure to intervene (the Chinese famine of 1958–1961, the Bangladesh famine of 1974, and the Ethiopian famine of 1974 and 1984); by-products such as civil war (Mozambique and Chad in 1980, Ethiopia in 1985 and Somalia in 1990); and malign intent or deliberate government creation of famine (Soviet Famine of 1933 and Dutch famine of 1944) (Alamgir, 1980; Devereux, 1993; de Waal, 1997).

Following the above issues, the discussion is continued on the political economy factors in relation to governments' attitudes and policies towards pastoral society, as well as the relationship between peasants and the agro-pastoralists in terms of access and control of livelihood resources. In this context, the political economy approach can be used as a framework to understand the livelihood situation of pastoralists and how this livelihood has been regarded as non-viable way of life by the government actors. 'Marginalization' and 'social differentiation' are the central concepts for the political economy analysis of competition over resources by different land users. According to Horowitz & Little (1987: 61), marginalization of pastoralists refers to 'the compaction of the ruminant herding in areas of low biological productivity, usually areas not yet experiencing agriculture'. Pastoralism retreats to areas of low biological productivity in the face of the appropriation of rangelands by other users, notably agriculturists and ranch farmers. The same holds true for the subsistence food crop producers whereby their land is being encroached upon by plantation agriculture mainly producing cash crops, as well as by the establishment of national parks on arable lands. Various studies conducted in Western Africa (Niger, Nigeria and Mauritania) and in Eastern Africa (Kenya, Ethiopia, Sudan, Somalia, Djibouti, and Uganda) have well documented how the subsistence economies of both pastoralists and peasants are marginalized by the

expansion of commercial farmers and the national parks (Monod, 1975; Baxter, 1975; Baker, 1975; Horowitz, 1975; Ibrahim, 1984; Turton, 1995; Campbell, *et al.*, 2000; Getachew, 2001; Ayalew, 2001; Degefa and Baudouin, 2004).

By social differentiation we mean growing inequality between pastoralists and other groups of regional and national economies, and among pastoralists themselves (Horowitz and Little, 1987). Understanding this is important because who has access to production resources and who has not, is largely determined either by social structure or by state bias in favouring a dominant and powerful group at the expense of the others: 'The allocation of state-controlled resources in rural development usually disfavours the physical and social margins' (Blaikie and Brookfield, 1987: 18).

A response from marginalized groups may be silence or resistance. A government system would be what enforces people's silence, whereas, in the context of rural settings, resistance puts a marginalized group in conflict with other groups whose activities are favoured by government. Land use conflicts between peasants and herders in many parts of Africa have been the direct manifestation of the government's bias against the latter. The relatively recent observations in this regard include: Central Niger (Longhurst, 1986), Mursiland, South-Western Ethiopia (Turton, 1995), between Mossi (peasants) and Fulbe (herders) in Central Plateau of Burkina Faso (Breusers *et al.*, 1998), conflict in the Kajiado District of Kenya (Campbell *et al.*, 2000), between Karrayu and peasants in surrounding areas in central Ethiopian Rift Valley (Ayalew, 2001), between Oromo agropastoralists and Amhara peasants in the Borkena wetland, North-Western Ethiopia (Berhanu, 2001), between farmers and transhumant Fulanis in the Koutiala District of the Cotton Zone in Southern Mali (Benjaminsen, 2002), and between Guji and Gedeo in southern Ethiopia (Hussein, 2002).

Case analysis and discussions

Food security situation in Ethiopia

a) An overview of food security situation in Ethiopia

Achieving food security in its totality continues to be a challenge not only for the developing nations, but also for the developed world. The difference lies in the magnitude of the problem in terms of its severity and proportion of the population affected (Tsegaye, 2009).

Ethiopia has a history of famine between 1983 and 1985; the country experienced the worst famine in current history, with a substantial crop and livestock loss. About eight million Ethiopians were affected, and around one million have died. The famine also had long term effects in that many of the poor had depleted their assets to deal with the famine, which left them even more vulnerable to future crises. Famine vulnerability continued through the mid 1990s owing to conflict in the northern regions and protracted drought in other regions of the country (Webb and Von, 1994).

Ethiopia has experienced long periods of food insecurity. As a result, more than half of the population is poor and food insecure of which the largest group is rural people with insufficient assets to produce and purchase food (Sisay and Adugna, 2001). Similarly, the blend of

manmade and natural factors results serious and growing food insecurity problem, which expose five to six million people to chronic and transitory food insecurity problem each year; and ten million people, are exposed to vulnerability with weak resilience (FAO, 2006).

According to FAO (2014) Sub-Saharan Africa is the worst of all regions in prevalence of undernourishment and food insecurity; Ethiopia (ranking No. 1) is the worst of all African countries as nearly 33 million people are suffering from chronic undernourishment and food insecurity. This indicates that Ethiopia has one of the highest levels of food insecurity in the world, in which more than 35% of its total population is chronically undernourished. The report of different studies indicated that chronic and acute food insecurity is prevalent in Ethiopia, especially among rural populations and smallholder farmers. Another study by UNICEF (2014) prevails that about 10% of Ethiopia's citizens are chronically food insecure and this figure rises to more than 15% during frequent drought years; 2.7 million people will require emergency food assistance in 2014 and 238,761 children require treatment for severe acute malnutrition in 2014. On the other side, the report of World Food Program (WFP) demonstrated that favorable food security conditions prevail in most parts; however, over 7.1 million people were estimated to live in conditions of crisis. These populations are in North Eastern Amhara, Eastern Tigray, and Eastern Oromia; whereas, the number of children with severe acute malnutrition in Afar, Amhara, Oromia, Southern Nation Nationality Peoples region, Somali and Tigray regions showed a slight decrease from 21,566 (86.2% reporting rate) to 21,105 in 2014 (84.4% reporting rate) (WFP, 2014).

b) Empirical evidences on food security situation of Ethiopia

Different studies were carried out in rural as well as urban part of the country and these studies concluded that the food security status of the households is different from region to region and from district to district. Empirical evidences argued that the majority of households in the central part of the country are food insecure. For example, Beyene and Muche (2010) pointed out that about 64% of the households were food insecure and the rest 36% were food secure. It also revealed that average value of the energy available for food insecure and secure households was 1,822 Kcal/AE/day and 2,908 Kcal/AE/day, respectively. The minimum and maximum energy available for food insecure households was 1,043 Kcal and 2,098 Kcal, respectively. Whereas the minimum and maximum energy intakes of food secure households were 2,203 Kcal and 3,492 Kcal, respectively. Furthermore, another study conveyed that 58.16 % of the total households in the area were food insecure with food insecurity gap and severity being 20 % and 9.4 %, respectively (Girma, 2012).

Different findings in the northern part of Ethiopia showed that there is high incidence of food insecurity. As to Mesfin (2014) finding, 48% of the households in the area were vulnerable to food insecure. In addition, the incidence of food insecurity in west and east Gojjam zones of Amhara region was 51.3% and 59.2%,

respectively (Motbainor *et al.*, 2016). A study conducted in drought prone areas of northern part of the country also indicated that the majority (74%) of households were experiencing food insecurity (Arega, 2013). Unlike to this, Tsegay (2009) figured out that the incidence of food insecurity in rural households of Tigray region was 42% which lower relative to other drought prone areas while 58% of rural households being food secure.

Many empirical evidences in eastern Ethiopia argued that the majority of households were food secure. For example, Lemma and Wondimagegn (2014) revealed that the majority (62.7%) of households were food secure and about 37.3% were food insecure. Furthermore, Hussein and Janekarnkij (2013) pointed out that 63% of the households in Somali region were food secure, while 37% were found to be food insecure. As opposed to this, another study confirmed that about 56.5% of households in the area were food insecure (Abdirahman, 2015). In addition to this, Gemechu *et al.* (2015) conveyed that the majority (67.1%) of households in West hararghe were food insecure whereas 32.9% households were food secure. Moreover, about 75% of households in Dire dawa were food insecure (Bogale and Shimelis, 2009).

Different findings in the southern part of Ethiopia showed that the incidence of food insecurity is lower relative to other parts of the country. As to Mitiku *et al.* (2012) finding, about 64% of households in Shashemene district were found to be food secure while 36% were food insecure. In addition, Mequanent *et al.* (2014) revealed that 42.9% households were food insecure; whereas, 57.1% of them were food secure. Despite this, Nigatu (2011) depicted that about 54% of the households in some parts of southern Ethiopia have been facing mild to severe food insecurity. Ahmed (2015) also supported this by figuring out that about 77% of households in bule hora as food insecure households. Moreover, the majority (84.91%) of rural households in guraghe zone were food insecure (Zelalem, 2014). A study conducted by (Buom, 2013) in Gambella region revealed that 80.8% of rural households were food insecure, whereas 19.2% of sampled rural household was food secure.

Generally, there is high incidence of food insecurity in different parts of the country but, it is more pronounced in the western and drought prone areas relative to other parts of the country. Because in this parts of the country agricultural production and productivity highly vulnerable to climate variables.

Major causes of food insecurity in Ethiopia

The causes of the existing food insecurity problem in Ethiopia are numerous and interrelated (ATA, 2010). Based on the reviewed documents, this study point out the following major causes of food insecurity:

1) Political economy theory related factor: *Backward agriculture*

Agricultural technology can contribute to increased food production (food availability), increased agricultural and rural incomes (better access to food), and entails positive spillovers to other sectors and contributes to economy wide growth. But in Ethiopia smallholder farming is the dominant livelihood activity and the source of vulnerability to poverty and food insecurity (Kidane *et al.*, 2006).

The performance of agriculture, the sector that makes livelihood for 85% of the country's population, has been poor over the last few decades, to the extent that the country could not adequately feed its population from domestic production. This has been manifested in the prevailing chronic and transitory food insecurity. Similarly, Ethiopia is currently facing challenging problems that are induced by environmental crises, demographic and socio-economic constraints, which adversely affect people's production system. This has resulted in agriculture being poor for several years to the extent that the country could not adequately feed its population from domestic production and prevailing both chronic and transitory food insecurity (Degefa, 2002).

On the other hand, the discussion of Deverux (2000) indicated that dependence on unreliable and low productivity rain fed agriculture may well be the primary determinant of household food insecurity in Ethiopia.

2) Political economy theory related factor: *Land degradation*

Land degradation, poverty and food insecurity are pervasive and interconnected problems in Ethiopia (Stein and Bekele, 2004). Land degradation coupled with erratic rainfall, drought and poverty problems pose a serious threat on households' food security in Ethiopia. Among the various forms of land degradation, soil erosion is the most serious problem, which results in soil nutrient depletion and loss of fertility of farm land. Loss of soil nutrient and its productive capacity due to soil erosion leads to low productivity of land, which in turn brings loss in crop yields and results in a vicious cycle of poverty and food insecurity (Genene and Wagayehu, 2010).

Land degradation is seriously affecting the soil fertility, contributing to considerable yield decline, loss in food production, and hence the food security at household and country levels. Food security cannot be achieved without effective planning and improved management strategies of soil and nutrient resources. Land degradation, is recognized as the most critical problem affecting the agricultural growth and causing increased rural poverty in sub-Saharan Africa (FAO, 1997). Ethiopia loses about 400 tons/ha of topsoil, and it is estimated that the amount of grain lost to land degradation alone can feed more than 4 million people. Thus, a condition becomes a cause of economic stagnation and decline, which aggravates poverty and food insecurity (Sisay and Tesfaye, 2003).

3) FAD theory related factor: *Drought*

The Eastern part of African Continent was hit by recurrent drought during 1997–2000. Around 12 million people were suffering from starvation in the Horn of Africa (Somalia, Ethiopia, north-eastern Kenya), stricken by the worst drought in the past 60 years (Albert, 2012). Ethiopia, in addition to existing economic problem, as part of the region, experienced prolonged drought and famine that caused considerable crop failure and livestock damage resulting in severe food shortage (Abraham, 2003). Currently in Ethiopia, there are more than 10 million people who have been affected by drought. Some 4.6 million people are threatened by hunger and malnutrition and require urgent food assistance (WFP, 2009). Furthermore, the problem of food insecurity has

continued to persist in the country as many rural households have already lost their means of livelihood due to recurrent drought and crop failures (Bogale, 2002). Drought and famine have become an everyday reality in Ethiopia. The country has faced three major famines and numerous famines like situations in the past three decades that significantly affected the country's food production. During the period between 1958 and 1977 over 25 million people were directly affected by famine and drought. The number of deaths was estimated between three and five million people. The 1984/85 famine alone had taken the lives of 300,000 people. It was estimated that close to 58 million were affected by famine between 1973 and 1986 (Berhanu, 2001).

4) FAD theory related factor: *Population pressure*

Ethiopia, with a population of about 84.3 million (CSA, 2008a), is the second-most populous country in sub-Saharan Africa. Food insecurity is a major and ever worsening problem. Rapidly increasing population pressure is one of the underlying cause food insecurity (USAID, 2012). Population pressure coupled with droughts and other unfavorable weather conditions is a challenge to famine prevention in Ethiopia (Alexander, 2009).

Most of the countries with the highest numbers of people facing food insecurity also have high fertility rates and rapid population growth. This increases the challenge of adequately meeting nutritional needs. Sub-Saharan Africa has the highest population growth rate in the world (United Nations Population Division, 2009).

Large population reduces income per head, expenditure per head and per capita food consumption. The likely explanation is that in an area where households depend on less productive agricultural land, increasing population results in increased demand for food. This demand, however, cannot be matched with the existing food supply from own production and this ultimately end up with the household becoming food insecure (Robert *et al.*, 2013).

5) Economic theory related factor: *Poor infrastructure facility*

Infrastructure in terms of adequate energy and water/irrigation supplies, high-speed communications, and seamless transportation systems connecting areas of high production with centers of high consumption, all play a crucial role in safeguarding food security. But much of that food loss occurs during or after harvest in developing countries due to inadequate infrastructure, lack of proper storage facilities, lack of education on grain storage and lack of efficient markets to ensure grains move through the supply chain. This food loss reduces incomes of smallholder farmers, raises food prices and contributes to hunger and malnutrition. Some regions in Ethiopia produce surplus, while people in other regions face famine threats. There are of course infrastructural problems in the country to link the surplus producing regions to the food-deficit ones (Alexander, 2009).

The weak system of marketing and transport operations to procure and collect agricultural products from widely dispersed rural producers and to distribute essential agricultural inputs on time contributes not only

to the fall in production in some years, but also to the problems caused by failure to move the available food itself to needy areas (Gezahegn, 1995).

6) Economic theory related factor: *Low level of off-farm/non-farm activities*

Although rural households tend to turn to off-farm activities to meet their needs and offset income shortfalls, participation appears to be constrained by capital assets: human, social, financial, and physical (Mintewab *et al.*, 2010).

Income from the agricultural production may not be the only source of income for the rural household. The success of households and their members in managing food insecurity is largely dependent on their ability to get access to off-farm/non-farm job opportunities, which could serve as livelihood diversification strategies. Smallholders who solely depend on farm activities have inadequate income to purchase farm inputs and fulfill family needs and thus, they are found to be food insecure (Beyene and Muche, 2010).

In Ethiopia, agriculture is the main source of income and employment but it has been highly constrained by various constraints and thus leaves the country to remain food insecure especially in drought prone and degraded areas. As a result, focusing in agricultural production alone is not enough to combat the food insecurity problem; therefore, engaging in non-agricultural or nonfarm activities is crucial to sustain the people's livelihoods (Bereket and Zenebe, 2011).

Conclusions

Ethiopia has experienced long periods of food insecurity. Among Sub-Saharan countries, Ethiopia is the worst of all regions in prevalence of undernourishment and food insecurity. Nearly 33 million people are suffering from chronic undernourishment and food insecurity. This indicates that Ethiopia has one of the highest levels of food insecurity in the world, in which more than 35% of its total population is chronically undernourished.

A number of factors can explain the trend towards the increasing food insecurity situation in Ethiopia. Drought, poor health, erratic rainfall, backward agriculture, poor infrastructure facility, natural disaster, land degradation, population pressure and low level of technology led to a significant decline in the productivity per households and cause food insecurity and starvation.

Therefore, future policies, investment strategies as well as different actions directed towards improving food security situation in Ethiopia should focus on:

- Enhancing household heads and members of the household to engage in different income generating activities for means of living, to use coping mechanisms and to escape from hunger and undernourishment;
- Improving farmers' access and use of fertilizer, improved seed varieties, irrigation water, extension service, etc.;
- Encouraging the farmers to develop and adopt soil and water conservation measures to reduce soil erosion, improve and maintain soil fertility, and to enhance the habit of using rain water harvesting to alleviate problems caused by shortage of rain fall;

- Improving households' access to financial and social capital;
- Awareness creation on family planning, adoption of technologies, pre and post harvest management and education of household heads are also crucial activities; and
- Incorporating different research outputs to design programs for food insecurity intervention.

REFERENCES

- Abdirahman A, 2015. Food insecurity and coping strategies of agro-pastoral households in Babile district of Somali regional state, Ethiopia. An MSc Thesis of Graduate Studies of Haramaya University, Ethiopia.
- Abraham H, 2003. The Effect of Drought in South East Ethiopia: Study of Pediatric Admissions to Gode Hospital. *Ethiop J Health Sci*, 13: 125-131.
- AFSH. 2014. Undernourishment Multiple Indicator: Time lag for verifiable comparable information across countries 12 to 18 months, 2014.
- Ahmed M, 2015. Determinants of household food security and coping strategies: the case of Bule-hora district, Borana zone, Oromia, Ethiopia. *Eur J Food Sci Technol*, 3: 30-44.
- Alamgir M, 1980. *Famine in South Asia, Political Economy of Mass Starvation*, Cambridge: Olgeschlager, Gunn & Hain.
- Albert S, 2012. Food Security for Africa: An Urgent Global Challenge. *Sasson Agriculture & Food Security*, 1: 2.
- Alexander AV, 2009. Understanding Famine in Ethiopia: Poverty, Politics and Human Rights. In: *Proceedings of the 16th International Conference Of Ethiopian Studies*, Ed. By Svein Ege, Haraldaspen, Birhanu Teferra And Shiferaw Bekele, Trondheim, 2009.
- Arega B, 2013. Determinants of Rural Household Food Security in Drought Prone Areas of Ethiopia: Case study in Lay Gaint District, Amhara Region, Ethiopia. PhD dissertation, University of South Africa.
- ATA, 2010. Accelerating Ethiopian Agriculture Development for Growth, Food Security and Equity. Ethiopian Agricultural Transformation Agency (ATA), Addis Ababa, Ethiopia, July, 2010, pp: 1-116.
- Ayalew Gebre, 2001. *Pastoralism Under Pressure: Land Alienation and Pastoral Transformations among the Karrayu of Eastern Ethiopia, 1941 to the Present*. The Netherlands: Shaker Publishing.
- Baker R, 1975. Development and the pastoral people of Koramoja, NorthEastern Uganda, an example of treatment of symptoms. Monod, T. (ed.) *Pastoralism in Tropical Africa*. Studies presented and discussed at the XIIIth International African Seminar, 187-205. International African Institute. Oxford: Oxford University Press.
- Bedeke SB, 2012. Food insecurity and coping strategies: A perspective from Kersa district, East Hararghe Ethiopia. *Food Sci Qual Manage*, 5: 19-26.
- Bedemo A, G Kindie, B Kassa and SPR Chaurasia, 2014. The role of rural labor market in reducing poverty in West Ethiopia. *J Develop Agric Econom*: 6: 299-308.
- Benjaminsen TA, 2002. Enclosing the land: Cotton, population growth and tenure in Mali. *Norsk Geografisk Tidsskrift-Norwegian J Geograph*, 56: 1-9.
- Berhanu GB, 2001. Food Insecurity, In Ethiopia: The Impact of Socio-Political Forces.
- Bereket Z and G Zenebe, 2011. Effect of Nonfarm Income On Household Food Security In Eastern Tigray, Ethiopia: An Entitlement Approach. *Food Science And Quality Management*, 1: 1-22.
- Breusers M, S Nederlof and T Rheenens, 1998. Conflict or symbiosis? Disentangling farmer-herdsman relations: the Mossi and Fulbe of the Central Plateau, Burkina Faso. *J Modern African Stud*, 36: 357-380.
- Berhanu Gutema, 2001. Environmental, social and economic problems in the Borkena plain, Ethiopia. Christian Michelsen Institute Working Paper No 8. Bergen: CMI.
- Beyene F and M Muche, 2010. Determinants of Food Security among Rural Households of Central Ethiopia: Quarterly *J Int Agric*, 49: 299-318.
- Blaikie P and H Brookfield, 1987. *Land Degradation and Society*. London & New York: Methuen.
- Bogale A, 2002. Land Degradation, Impoverishment and Livelihood Strategies of Rural Households in Ethiopia: Farmers' Perceptions and Policy Implication. Shaker Verlag, Germany, ISBN-13: 978-3832202149, Pages: 234.
- Bogale A and A Shimelis, 2009. Household level determinants of food insecurity in rural areas of Dire Dawa, Eastern Ethiopia. *Afric J Food Agric, Nut Develop*, 9: 1914-1926.
- Boserup E, 1965. *The Conditions of Agricultural Growth*. New York: Aldine.
- Buom N, 2013. Determinants of seasonal food insecurity and coping mechanism in rural household in Lare district in Nuer zone of Gambella, Ethiopia. An MSc thesis, Mekele University, Ethiopia.
- Campbell D, H Gichohi, A Mwangi and L Chege, 2000. Land use conflict in Kajiado District, Kenya. *Land Use Policy*, 17: 337-348.
- Clay E, 2002. Food security: Concepts and measurement. Paper for FAO Expert Consultation on Trade and Food Security: Conceptualizing the Linkages, Rome, 11-12 July 2002, pp: 1-7.
- CSA, 2008a. Summary and Statistical report of the 2007 population and housing census: Population size by age and Sex. Addis Ababa: Central Statistics Agency of the Federal Democratic Republic of Ethiopia.
- de Waal A, 1997. *Famine Crimes: Politics and Disaster Relief Industry in Africa*. Oxford: James Currey & Indianan University Press.
- Degefa, T. 2002. Household Seasonal Food Insecurity In Oromia Zone, Ethiopia.
- Devereux, S. 2000. Food Insecurity in Ethiopia. A Discussion Paper for DFID.
- Devereux, S. 1993. *Theories of Famine*. New York & London: Harvester Wheatsheaf.
- Degefa Tolossa and Baudouin, A. 2004. Access to natural resources and conflicts between farmers and agro-pastoralists in Borkena Wetland, north-eastern Ethiopia *Norsk Geografisk Tidsskrift-Norwegian J Geograph*, 58: 97-112.

- Dreze J and A Sen, 1989. *Hunger and Public Action*. Oxford: Clarendon Press.
- Duffour, K. 2010. The Budget statement and economic policy of the government of Ghana for the 2011 financial year. Presented to Parliament on Wednesday, 18th November, 2009, Accra, Republic of Ghana, pp: 1-52.
- FAO, 1997. Integrated soil management for sustainable agriculture and food security in southern and east africa proceedings of the expert consultation Harare, Zimbabwe.
- FAO, 2004. FAO statistics. Food and agriculture organization of the united nations, statistic division, socio-economic statistics and analysis service.
- FAO, 2005. Assessment of the world food security situation. Committee on world food security, thirty-first session, May 23-26, 2005, food and agricultural organization, Rome, Italy.
- FAO, 2006. Special report on crop and food supply assessment mission to Ethiopia. Rome, Italy.
- FAO, 2010a. Food insecurity in the World: addressing food insecurity in protracted crises. Food and agriculture organization of the United Nations, Rome, online available at: <http://www.fao.org/docrep/013/i1683e/i1683e.pdf>.
- FAO, 2012. FAO crop and food security assessment mission to Ethiopia. Special report. pp: 25-30. Available online at www.fao.org.
- FAO, 2014. State of Food Insecurity in the World. Food and Agriculture Organization of the United Nations, Rome, 2014. State.
- FAO, 2014. Ethiopia: prevalence of undernourishment and the state of food insecurity in (2012-2014).
- GAO, 2011. Office. food insecurity in sub-saharan Africa, Washington, DC 20548.
- Gemechu F, L Zemedu and J Yousuf, 2015. Determinants of farm household food security in HawiGudina district, West Hararghe zone, Oromia Regional State, Ethiopia.
- Genene T and B Wagayehu, 2010. Farmers' Perceptions of Land Degradation and Determinants of Food Security at Bilate Watershed, Southern Ethiopia. EJAST, 1: 49-62.
- Getachew Kassa. 2001. Among the Pastoral Afar in Ethiopia: Traditions, Continuity and Socio-economic Change. Utrecht: International Books.
- Gezahegn K, 1995. Agricultural Marketing Policies and Food Security in Ethiopia. Proceedings of the Inaugural and First Annual Conference of the Agricultural Economics Society of Ethiopia. Addis Ababa, Ethiopia.
- Ghosh BN, 2001. Dependency Theory: Revisited. Aldershot, Ashgate.
- Girma G, 2012. Determinants of Food Insecurity Among Households in Addis Ababa City, Ethiopia, Aksum University, Shire Campus Investment potentials of Ethiopia, Addis Ababa, 10: 159-173.
- Harrison GA (ed.), 1988. *Famine*. Oxford & New York: Oxford University Press.
- Horowitz MM, 1975. Herdsman and husbandman in Niger: Values and strategies. Monod, T. (ed.) *Pastoralism in Tropical Africa*, Studies Presented and Discussed at the XIIIth International African Seminar, 387-405. International African Institute. Oxford: Oxford University Press.
- Horowitz MM and PD Little, 1987. African pastoralism and poverty: Some implications for drought and famine. Glantz, M.H. (ed.) *Drought and Hunger in Africa: Denying Famine a Future*, 59-82. Cambridge and New York: Cambridge University Press.
- Hussein Jemma, 2002. Competition over resources and ethnic conflict in Federal Ethiopia: The case of recent Guji-Gedeo conflict. Unpublished research report submitted to the Organization for Social Science Research in Eastern and Southern Africa.
- Hussein W and P Janekarnkij, 2013. Determinants of Rural Household Food Security in Jigjiga District of Ethiopia. Kasetart J Soc Sci, 34: 171-180.
- Ibrahim FN, 1984. Ecological Imbalance in the Republic of the Sudan – with Reference to Desertification in Darfur. Bayreuth: Drukhaus Bayreuth Verlagsgesellschaft mbH.
- Idrisa YL, MM Gwary and H Shehu, 2008. Analysis of food security status among farming households In Jere Local Government of Borno State, Nigeria. J Trop Agric, Food, Environ Exten, 7: 199-205.
- IFAD, 2011. Rural Groups and the Commercialization of Smallholder Farming: Targeting and Development Strategies (Draft). (Issues and Perspectives from A Review of IOE Evaluation Reports and Recent IFAD Country Strategies and Project Designs.) Rome: International Fund for Agricultural Development.
- Kidane W, M Maetz and P Dardel, 2006. Food Security and Agricultural Development In Sub-Saharan Africa (SSA): Building A Case For More Public Support. Rome: FAO.
- Lemma Z and M Wondimagegn, 2014. Smallholders' Vulnerability to Food Insecurity and Coping Strategies: In the face of climate change, East Hararghe, Ethiopia. J Econom Sustain Develop, 5: 86-100.
- Longhurst R, 1986. Household Food Strategies in Response to Seasonality and Famine. IDS Bulletin 17: 73-80.
- Malthus, TR 1798. An essay on the principle of population. Wrigley and David Souden (eds.) *The Works of Thomas Robert Malthus*. Volume 1. London: William Pickering.
- Maxwell S, 1996. Food security: A post-modern perspective. Food Policy 21: 155-170.
- Maxwell S and M Smith, 1992. Household food security: A conceptual review. Maxwell, S. & Frankenberger T.R. (eds.) *Household Food Security: Concepts, Indicators, Measurements*. A Technical Review, 1-72. Rome: UNICEF and IFAD.
- Mequanent Muche, B Endalew and T Koricho, 2014. Determinants of Food Security among Southwest Ethiopia Rural Households. Asian J Agric Res, 2014: ISSN 1819-1894, Malaysia.
- Mesfin W, 2014. Determinants of Households Vulnerability to Food Insecurity in Ethiopia: Econometric analysis of Rural and Urban Households. J Econ Sustain Develop, 5: 70-79.
- Mintewab B, G Zenebe, G Liyousew and K Gunner, 2010. Participation in Off-Farm Employment, Rainfall

- Patterns, and Rate of Time Preferences. Environment for Development Discussion Paper Series.
- Millman S and RW Kates, 1990. Toward understanding hunger. Newman, L.F. Crossgrove W, Kates RW, Matthews R & Millman, S (eds.) *Hunger in History: Food Shortage, Poverty and Deprivation*, 3-24. Cambridge: Basil Blackwell.
- Mitiku A, F Bekabil and T Beyene, 2012. Empirical analysis of the determinants of rural households food security in Southern Ethiopia: The case of Shashemene District. *Basic Res J Agric Sci Rev*, 1: 132-138.
- Monod T, 1975. Introduction. Monod, T. (ed.) *Pastoralism in Tropical Africa, studies presented and discussed at the XIIIth International African Seminar*, 1-98. International African Institute. Oxford: Oxford University Press.
- Motbainor A, A Worku and A Kumie, 2016. Level and determinants of food insecurity in East and West Gojjam zones of Amhara Region, Ethiopia: a community based comparative cross-sectional study. *BMC Public Health*, 16: 503.
- Nigatu R, 2011. Small holder farmers coping strategies to household food insecurity and hunger in Southern Ethiopia. *Ethiop J Environ Stud Manag*, 4: 39-48.
- Robert A, OM James and T Thomas, 2013. Determinants Of Household Food Security In The Sekyere Afram Plains District of Ghana.
- Sen A, 1981. *Poverty and famine: An essay on entitlement and deprivation*. oxford: clarendon press.
- Sisay A and Z Tesfaye, 2003. Rural poverty, food insecurity and environmental degradation in Ethiopia: a case study from South Central Ethiopia.
- Sisay A and L Adugna, 2001. *Eradicating rural poverty and food insecurity in Ethiopia: The quest for sustainable institutions and technologies*, Addis Ababa, Ethiopia.
- Stein H and S Bekele, 2004. Land degradation, drought and food security in a less-favoured area in the ethiopian highlands: a bio-economic model with market imperfections. *Agric Econ*, 30: 31-49.
- Tsegay G, 2009. *Determinants of Food Security in Rural Households of Tigray Region*. Msc Thesis Addis Ababa University, Ethiopia.
- Turton D, 1995. *Pastoral livelihoods in danger: Cattle disease, drought, and wildlife conservation in Mursiland, South-Western Ethiopia*. OXFAM Working Paper, UK & Ireland.
- United Nations. 1975. Report of the world food conference. Rome, 5-16 November 1974, New York.
- UNDP, 2009. *World population prospects: The 2008 Revision*. New York: UN population division; FAO.
2010. "Food Security statistics: prevalence of undernourishment in total population.
- UNDP, 2014. *United Nations Development Program in Ethiopia, annual report*.
- UNICEF, 2014. *Ethiopia Humanitarian Situation Report*.
- USAID, 2012. *Tackling Food Insecurity and Malnutrition in Ethiopia through Diversification*. P Webb and J Von Braun, 1994. *Famine and Food Security in Ethiopia: Lessons for Africa*. London: John Wiley.
- World Bank, 1986. *Poverty and Hunger: Issues and Options for Food Security in Developing Countries*. Washington DC, World Bank.
- World Bank,. 2008, "Agriculture for Development". *World Development Report, 2008*. Washington World Bank.
- WFP, 2009. *Food Security and Vulnur ability in Addis Abeba*. WFP-Ethiopia, September 2009.
- WFP, 2014. *Global Food Security Update: Tracking Food Security Trends In Vulnerable Countries*. World Food Programme, Issue 13, February 2014.
- Zelalem F, 2014. *Determinants of food security in the rural households of Meskan Woreda, Gurage Zone, SNNPR, Ethiopia*. Institute of Agriculture and Development Studies, Rural Development Department, St. Mary's University, Addis Ababa, Ethiopia.