



Review on Determinants and Challenges of Household Food Security in Ethiopia

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<p>Abstract: The issue of food security is a major concern and a top priority area for Ethiopia. Food security is a relative term that refers to the fact that all people have access to enough food to enable them to live an active, productive, and healthy life. Households are considered to be food secure when they produce enough staple food to meet their daily needs or when they have sufficient income to purchase food from the market. Like many developing countries, the highland farmers in Ethiopia mainly rely on subsistence agriculture and are often affected by food insecurity. The main objective of the paper is to review the determinants of households' food security in Ethiopia.</p> <p>Keywords: Food security; staple food; consumption; subsistence farming.</p>	<p>Research Paper</p>
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1. INTRODUCTION

Between 2010 and 2012, an estimated 870 million people worldwide were undernourished (as measured by dietary energy intake). This number represents 12.5% of the world's population, or one in eight people. The vast majority of them, 852 million, live in developing countries, where the risk of malnutrition is currently estimated at 14.9% of the population (Gina *et al.*, 2013).

Over the past five years, Ethiopia's economy has grown by 11% annually and the poverty rate has fallen from 38% in 2004/05 to 29% in 2009/10. But it remains one of the least developed, low-income, food-deficit countries and one of the poorest in Africa: its gross domestic product of \$472 per capita is well below the sub-Saharan African average of \$1,077. Despite the decline in food poverty, the level of food insecurity and malnutrition remains serious: 23 million people do not have sufficient income to meet their food needs (Cafer *et al.*, 2015). Almost a quarter of Ethiopia's population is undernourished and the majority suffers from chronic hunger.

Some estimates suggest that the chance of crop failure could be as high as 10% in some parts of Ethiopia (Joint, F. A. O., World Health Organization, & WHO, 2006). The situation can be much worse if measures to ensure food security are underestimated and the gap

between food production and per capita consumption is caused by a slowdown in the growth rate of agricultural production (FDRE, MoH, 2001).

Scientists, planners, donors and international development agencies have made studying the food system and food security a top priority as food crises continue to worsen. Despite the available resources and the efforts of governments at different times, food insecurity remains one of the greatest challenges to economic development and has been exacerbated by torrential rains and recurring wars (Dercon, Stefan, & Hoddinott, John, 2004).

Ethiopia is one of the world's poorest countries with indicators suggesting low levels of development. Many Ethiopians live in chronic hunger and have low average daily energy requirements (Bernard, T., Abate, G. T., & Lemma, S., 2013). A clear indicator of food insecurity in Ethiopia is the growing dependence on foreign food aid (Berhanu, WN, 2004). Food aid has kept people alive but has done nothing to address the causes of food insecurity. Over the last decade, Ethiopia has received an average of 700,000 tons of food aid per year, a figure that has increased significantly in the last years of the crisis (the amount of food requested has quadrupled since 1996, the quantity of food appealed for has multiplied by 4.5, while the number of beneficiaries multiplied by 6. The unpredictable timing and volume of

aid flowing through the emergency channel means there is little opportunity to do more than meet humanitarian needs (Kudi, T. M., Odugbo, S. B., Banta, A. L., & Hassan, M. B., 2009).

There is no more serious problem of underdevelopment than food insecurity (Reutlinger, Shlomo, 1986). Most Ethiopians live in rural areas and face the same challenges in obtaining sufficient food. However, due to topographical and biophysical differences across Ethiopia, seasonal malnutrition varies across geographic space and time. However, the performance of agriculture in feeding the country's population, which is growing at about 2.9% annually, is poor. Currently in Ethiopia, there are more than 10 million people who have been affected by drought. Around 4.6 million people are at risk of hunger and malnutrition and need emergency food aid. The deteriorating situation is exacerbated by high food prices; since the beginning of the year, the cost of grains has more than doubled in many markets, making it more difficult for many people to meet their basic food needs and making them even poorer (Wiesmann, D *et al.*, 2009).

In the early 1980s, a paradigm shift in food security occurred following claims that food security was more of a demand-side problem affecting the poor's access to food, which was supply-side problem affecting food availability nationwide. Since then, it has been widely accepted that food security has been defined primarily as a problem of access to food. Farmers' own production was increasingly seen as a means of accessing rights, either directly through their own food supply or indirectly through lower market prices for consumers (Maxwell, Simon, 1996).

Ethiopia is the fourth largest and second populist country in Africa, with an area of almost 1.1 million square kilometers and population of 61.7 million in July 1999 and a population growth of 3.2% per year (DeLind, Laura B., 1999). The core of the economy was mainly the agricultural sector, measured by the employment of the population, contribution to GDP, exports of goods and the direction of industries. The country has natural resources that make up 60% of the area and are known for their great potential for agricultural development. We know that only 15% of this potential farmland is developed.

2. LITERATURE REVIEW

2.1 Concepts and Definitions of Food Security

Food security is defined differently by international organizations and researchers. World Food Summit, which broadly adopted the definition of achieving food security "at the individual, household, national, regional and global levels" "when all people have physical and economic access at all times to sufficient, safe and nutritious food to meet their nutritional needs and food preferences for an active and

healthy life" (Kudi, T. M., Odugbo, S. B., Banta, A. L., & Hassan, M. B., 2009). Currently, a synthesis of these definitions, focusing mainly on availability, access and use, serves as an operational definition in the projects of international organizations.

Food security is a concept that has evolved significantly over the years. Most definitions of food security differ from those of the World Bank (Maxwell, Daniel G., 1996). Food security is defined as everyone's access to enough food at all times to lead an active and healthy life (Reutlinger, Shlomo, 1986). The essential elements of this definition are availability (sufficient food supply); Access through internal production, market purchasing or transfer of food; Stability, when availability and access are always guaranteed; and use, which refers to the appropriate biophysical conditions (good health) required for the appropriate use of food to meet specific nutritional and safety needs, such as: balance between vulnerability, risk, security; and time (Maxwell, Simon, & Frankenberger, Timothy, 1992).

Food availability means that sufficient quantities of appropriate and essential types of locally produced food, commercially imported food or food assistance are continually available to, or at a reasonable distance from, individuals. At the national level, this is the sum of national food supplies, net commercial imports, food aid and domestic production. Individuals have adequate access to food if they have "sufficient income or other resources to purchase or barter to obtain a sufficient quantity of appropriate food necessary to maintain adequate levels of nutrition." Finally, appropriate use of food is achieved when "food is used appropriately, appropriate food processing and preservation techniques are used, adequate knowledge of child nutrition and care techniques is present and implemented, and services are in appropriate place (Klak, Thomas, 1992). Gradually, the concept of food safety has taken on a more subjective meaning than initially assumed, integrating the quality and diversity of individual needs as well as respect for local eating habits, thus overcoming a purely quantitative approach. Food security is a multidisciplinary concept that includes economic, political, demographic, social, cultural and technical aspects.

2.2 Concepts and Definitions of Food Insecurity

Food insecurity is a situation in which people do not have the basic foods they need to obtain the energy and nutrients they need to live fully productive lives. It can be temporary (temporary food insecurity) or persistent (chronic food insecurity) (Alexandratos, Nikos, 1995). Malnutrition occurs when calorie intake is below the minimum energy requirement (MDER). MDER is the amount of energy required to perform light activities and maintain the minimum allowable body weight to achieve a height of. This varies from country to country and from year to year, depending on the gender structure and age of the population. On the other

hand, food insecurity is a situation that occurs when people do not have reliable access to sufficient quantities of safe and nutritious food necessary for normal growth and development and for an active and healthy life (Hart, T GB., 2009). It is a dynamic phenomenon; its effects vary depending on duration, intensity and local socio-economic and environmental conditions (Union, Europäische, 2009).

The diminishing food supply approach explains that famine or food shortage occurs when the overall food supply decreases. According to this approach, people go hungry because a local, national, or regional decline in food availability drops below the minimum required for survival. However, the FAD has been criticized for only focusing on supply and ignoring demand. People's income and purchasing power are not mentioned. Furthermore, differences in vulnerability and access to food outside the affected area were not taken into account (Ejiga, J, 2006).

According to the right to food theory, food availability at the global or national level alone cannot ensure food security at the household level. Therefore, according to the rights approach, increasing national production does not necessarily prevent famine or starvation unless production is distributed equally and the system of rights that determines access to food is changed. Food insecurity affects people who do not have access to sufficient food regardless of food availability (e.g. due to poverty) Even when there are adequate food supplies and well-functioning markets, food insecurity can occur (Sewnet, Yenesew, 2015).

Types of food insecurity

Food insecurity can be temporary (if it occurs in times of crisis), seasonal, or chronic (if it occurs continuously). A person can be sensitive to hunger even if they are not actually hungry at that moment (Stamoulis, Kostas, & Zezza, Alberto, 2003). Chronic food insecurity means that a household is constantly at high risk of being unable to meet the food needs of its members. In contrast, temporary food insecurity occurs when a household's security temporarily declines and the risk of unmet food needs is short-lived. Transient food insecurity focuses on intra- and inter-annual fluctuations in food access within households. It has been argued that this category can be divided into cyclical and temporary food insecurity (Maxwell, Simon, & Frankenberger, Timothy, 1992). Due to unforeseen and unpredictable circumstances, temporary food insecurity occurs for a limited period of time. Cyclical or seasonal food insecurity occurs when inadequate access to food occurs on a regular basis; this may be due to logistical difficulties or the prohibitive costs of storing or renting food. Chronic food insecurity is generally viewed as a result of widespread poverty characterized by a lack of resources. Food insecurity problems, both chronic and temporary, are widespread and rare in Ethiopia.

2.3 Factors that causes food insecurity

The factors that cause food insecurity are diverse and vary from place to place. However, this literature addresses the following main causes:

2.3.1 Population growth

There are two competing theories about the connection between population growth and food insecurity. According to Malthusian theory, population growth always tends to exceed the productive capacity of the Earth's resources. In general, demographic pressures have become an accelerating factor for food insecurity in situations where: all available land is fully cultivated; the failure to improve old agricultural methods; and alternative employment opportunities do not exist in cases (Bielli, Carla *et al.*, 2001).

In the case of Ethiopia, population growth is increasing rapidly, currently estimated at over 80 million people (Gwartney, J., 2008), and since 1960 the population has almost quadrupled (Ruckert, Arne, 2010). Under current conditions, the population is expected to reach 118 million by 2025 and 170 million by 2050, although food production will grow only slowly (Ararso, G. S., Schultz, B., & Hollanders, P., 2009). In the case of Ethiopia, since Ethiopians' livelihood largely depends on agriculture and people do not switch from agriculture to other economic sectors in search of livelihood, demographic pressure on agricultural land could be the cause of food insecurity in Ethiopia (Vadala, Alexander Attilio, 2009). The impact of population growth is reflected in the size of farms; this leads to a strong fragmentation of the territory and therefore to small farms, which ultimately reduces productivity.

2.3.2 Natural factor

Natural disasters such as drought, climate change and flooding are said to reduce food production for a particular period. In the case of Ethiopia, there is no doubt that droughts have created severe food shortages. According to the (World Bank., 2006) the whole Ethiopian economy is dependent on rainfall and data on rainfall variation and GDP growth from 1982 to 2000 illustrate that there is a positive correlation between the two. Thus, natural disasters have obvious negative impacts on food production and even on the economic performance of the country and thereby bringing food insecurity (Bielli, Carla *et al.*, 2001).

The drought that has been occurring frequently for many years was the main cause of death for many citizens and animals due to the severe shortage of food and feed. The famine a few years ago also posed a threat to the population, as around 14 million Ethiopians were exposed to this famine in the 1970s and 1980s; there was a famine in Ethiopia. Drought is a major cause of loss of food production in regions where agricultural activities are largely dependent on rainfall. In cases, as in Ethiopia, the proportion of irrigated land devoted to agriculture is minimal and all food production activities are based on

rain-fed agriculture; Interruption of rainfall during the season has led to massive food shortages and subsequent famine and starvation (Vadala, Alexander Attilio, 2009). It is therefore clear that drought and rainfall variability limit the food security of rural farmers dependent on agriculture.

2.3.3 Economic factors

Many studies conducted in different regions of Ethiopia have shown that agricultural land, credit, livestock and access to various productive assets influence the food security status of rural households in Ethiopia. Larger farms mean higher yields and production capacity, which in turn increases farm income and improves food security (Quattrini, Cristian, & Tesfaye, Solomon, 2003). Similarly, according to (Sewnet, Yenesew, 2015). A study conducted in shashemene District of oromia Region, the result of logit model showed that total cultivated area, total annual agricultural income per adult equivalent, total non-agricultural income and herd size had a positive and significant impact on the relationship with food security.

2.3.4 Socio-cultural factors

In Ethiopia, the gendered division of labor due to cultural factors limits productivity and food security. According to a study by (Alayu, Geremew, 2021), plowing by women is socially unacceptable in all rural areas of Ethiopia he studied. This is a major obstacle to the timely preparation of fields for planting. So single women had to beg their neighbors and wait for everyone else to finish plowing, otherwise, they had to pay someone to do it for them. (Tsegaye, D, Vedeld, P, & Moe, SR., 2013) has been studied that socio-cultural events such as dietary habits and food preferences, cultural ceremonies, and festivals also influence the food security status of affected communities and the way they save or spend, and directly or indirectly influence food consumption.

2.3.5 Institutional factors

Numerous studies confirm that poor infrastructure, especially roads; Schools, and health services reduces productivity, leading to food insecurity and dependence on food aid. A study on factors affecting food insecurity among rural women in Ethiopia found that the lack of roads and transportation options results in fewer market opportunities, less external influence, and additional difficulties in seeking care or accessing health information, which hinders the realization of food security significantly affects goals (Alayu, Geremew, 2021).

2.4 Indicators of food insecurity

Assessing food insecurity is a difficult task for researchers studying this topic because there are no universally accepted indicators that can serve as a measurement tool. It requires a multidimensional view as it is influenced by interrelated socio-economic, environmental and political factors. For this reason,

various approaches are used to analyze food insecurity, ranging from simple qualitative measurements to a combination of qualitative and quantitative measurements (Debebe, Habtewol, 1995). In this context, several indicators have been identified. In most cases, the choice of indicators is influenced by the goal and depth of the study.

The early warning studies conducted by the then RRC and now the DPPC used three indicators such as food supply indicators (including rainfall, cultivated area, and estimated yield), and social stress indicators (such as market prices, availability of food in the market, work patterns, wages and migration) and individual stress indicators (variables of nutritional status, morbidity, and mortality) to identify situations of food insecurity (Maxwell, Simon, & Frankenberger, Timothy, 1992). Food safety indicators are essentially divided into two main categories: "process and outcome indicators". Process indicators are divided into two areas: indicators reflecting food supply and indicators reflecting access to food. Outcome indicators measure the state of food security at a given point in time and are divided into direct and indirect indicators. Direct indicators of food consumption include actual food consumption, not information from marketing channels, or health status. Indirect indicators include stock estimates, a livelihood potential index, and an assessment of nutritional status (Slack, Alison T, 1999).

However, due to the different characteristics of food insecurity and the different levels of consideration, there is no hard and fast rule as to which method to use. The decision to use a particular method generally depends on resource and time constraints, study objectives, data availability, user type, and the level of precision required (Debebe, Habtewol, 1995).

According to (Maxwell, Simon, & Frankenberger, Timothy, 1992), in most cases, these indicators are aggregated and are not used to assess food insecurity at the household level, but they can provide an overall picture of an area or society. In contrast to supply indicators, access indicators are relatively effective in assessing food insecurity situations at the household level. The most important issue related to the food access index concerns the different coping strategies used by families and the sequential responses they take. The response ranges from disinvestment in productive and non-productive assets to emergency migration to prevent a reduction in food availability. Outcome indicators such as the level and change in food consumption and the quantity of food available serve as rough estimates for measuring the nutritional situation of households. Unlike food supply indicators, these can be disaggregated at the household level.

The main challenge in using these response indicators is that it is difficult to identify a normal family phenomenon and the family's response to food stress or

their response to avoid the risk of food stress. On the other hand, indicators related to the availability of food for consumption, the level and changes in food consumption serve as measures of household food insecurity (Joint FAO/WHO, 1992). Fluctuations in the level of food production and ownership of productive capital are also useful indicators.

2.5 Challenges in Ensuring Food Security in Ethiopia

To ensure the country's food security, some disadvantages must be eliminated, including:

1. A misconception that food insecurity occurs in an overall context of poverty and vulnerability that does not justify a clear focus on food security and the belief that it can be resolved in the normal course of development. This limited the specific attention that could be devoted to alleviating problems of food insecurity.
2. Complementarities and trade-offs between achieving self-sufficiency through domestic production and long-term agricultural exports and the urgency and continued dependence on external assistance to meet the needs of the majority of the food insecure population.
3. Availability of inadequate institutions and lack of effective instruments of current policy. Since the current policy emphasizes areas with better potential and provides an advantage, the inputs and technologies recommended therein are suitable for areas with easier production potential, which can benefit more from the services offered to them, which disadvantages the drought-prone section of society.
4. Last but not least, there is a lack of data to support the formulation and implementation of effective food safety guidelines (Senait, S., 2000).

2.6 Coping mechanisms of food insecurity

Coping strategy is defined as the mechanism through which members of a family or community meet their relief and recovery needs and adapt themselves to future disaster risks without external support (Vinik, Aaron I *et al.*, 2005). The coping mechanisms used by different families may vary from place to place. A study conducted in three of the most deprived and poor regions in northern Ghana found that families use a wide range of community support mechanisms and networks to cope, including wild food collection, market purchases, cash payments in kind (food), support from family and friends, sale of livestock and household valuables, migration and paid work, reduction in the number of meals served daily, reduction in portion/meal size, and consumption of less preferred foods (Bernoni, Luisa, & Wilhemina Leeuw, CDA, 2008).

There are four types of coping strategies that food insecure families typically use: changing diets to cheaper, less preferred alternative foods; Increase food supplies through unsustainable means (e.g., borrowing,

depleting seed supplies, begging). Reduce the number of people supported by a family (e.g. migration); and rationing available food by reducing the size or frequency of meals. Another study conducted by (Negatu, Workneh, 2011) in southern Ethiopia found that a range of coping mechanisms used by respondents included: minimizing the number of meals and the amount of food consumed; diversification of income sources; growing multiple crops, working for wages, migrating seasonally to a nearby community during peak season; and intercropping are just some of the mechanisms used in families.

2.7 Policy options to minimize food insecurity

Food aid is currently seen primarily as a tool to combat temporary and chronic forms of food insecurity in low-income countries. It is important to note that humanitarian organizations or donors in these countries implement food assistance programs to provide immediate assistance to those in need, increase income stability, improve agricultural productivity, and improve the health and nutrition of residents. In addition, it leads to improved availability of food at the national or regional level or improves access to food at the household level through increased agricultural production of food at the household level, market purchases and/or other means, or more efficient use of food at the individual level to meet human biological needs (Webb, Patrick, & Harinarayan, Anuradha, 1999).

According to the African Development Bank report on food security (Muguti, E., & Powe, 2011) the development of policies and regulations that support strengthening regional trade, sustainable access and use of natural resources, and private investment is also essential to the success and sustainability of Food production in terms of security. The following strategies are suitable for eliminating hunger: Strengthening productivity and income: diversifying and growing the economy; simple and economical technology (water management, use of green manure, crop rotation, and agro forestry), development of rural infrastructure (roads, electricity, etc.); Ensuring better irrigation and soil nutrition, natural resource management (including forestry and fisheries); Market and private sector development, food safety and quality Agricultural research, development, and training.

Connections that maximize synergies: Democratic governance Dynamic fourth estate civil society Strong local food supply as a safety net, support for rural organizations; primary care and reproductive health services; prevention and treatment of HIV/AIDS; redistribution of resources (including land reform); Education specifically for girls and women.

Provide direct access to food: feed mother and child; Supplementary nutrition for children (e.g. meals during the school day) and pregnant women; unemployment benefits and pensions food for work and

food for education; Targeted conditional cash transfers food banks and food distribution system for the poor (safety nets); and the failure rate.

3. CONCLUSION AND RECOMMENDATION

3.1 CONCLUSION

Understanding the causes and determinants of household food security would help policymakers design and implement more effective pro-poor policies and programs, paving the way for improved food security. Food insecurity is the biggest problem facing many sedentary and pastoralist households in Ethiopia. Due to unforeseen and unpredictable circumstances, temporary food insecurity occurs for a limited period of time. Seasonal food insecurity occurs when there are regular periods of insufficient access to food.

Food insecurity is a situation that occurs when people do not have reliable access to sufficient amounts of safe, nutritious food necessary for normal growth and development and an active, healthy life. Food insecurity is not static but depends on its duration, severity, and local socioeconomic and environmental conditions.

3.2 RECOMMENDATION

- Governmental and non-governmental organizations should improve understanding of the interactions between food systems at local, regional and global levels.
- The government should close the gap between the ability of current institutions to manage both food safety and environmental objectives.
- Improving food security in the food chain reduces food losses, resulting in increased food availability, stability and use. Therefore, governmental and non-governmental organizations should focus on improving food security. Improving food safety and quality helps improve nutrition and health. Governments and Non-Governmental Organizations Non-governmental organizations should address the food safety dimension through various food security measures.
- The government should raise awareness of the pressures that increasing population growth and consumption patterns place on the sustainable functioning of ecosystems.
- To ensure the stability of food supply, the government should increase domestic food production, an effective food marketing system at all levels and the promotion of good post-harvest technologies are required.
- Agricultural development is one of the most important tools the government can use to reduce threats to food security. Particularly in the agricultural sector, priority should be given to the growth of food crops and livestock production, as these can uniquely contribute to food security.

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