

**Agricultural Policies and Food Security:
Impact on Smallholder Farmers in Northern Ghana**

By

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A Thesis Submitted to
Saint Mary's University, Halifax, Nova Scotia
in Partial Fulfillment of the Requirements for the
Degree of Master of Arts in International Development Studies

September, 2017, Halifax, Nova Scotia
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Date: September 15, 2017

Acknowledgments

First and foremost, I would like to express my sincere gratitude to God Almighty, for without Him, this research would not have come to a successful completion.

I especially thank my research supervisor, Prof. Suzanne Dansereau, for her guidance during my research and study at Saint Mary's University. Her perpetual energy and enthusiasm in research has motivated all her students, including me. In addition, she has always been accessible and willing to assist me that gave way for smooth research life and proved rewarding for me.

My warm and sincere thanks to Prof. Peter Arthur, Department of Political Science, Dalhousie University for his invaluable comments and suggestions. My appreciation also goes to Mr Ulrich Mumburi, Department of International Development Studies, Saint Mary's University, for his great support and encouragement throughout this research.

I would like to thank the FGSR for the scholarship given me; it went a very long way in assisting me complete this programme. I would equally like to whole-heartedly thank Heather Taylor, Shane Costantino and Jenny Harrison for their prompt and helpful response each time I needed assistance from their offices.

With sincere gratitude let me thank Prof. Kate Ervine, Co-ordinator, International Development Studies Programme, St Mary's University, for her kind support and help in my studies.

The acknowledgement would be incomplete if I do not express my gratitude to Professors Mary Vetter and David Sauchy for their guidance, encouragement and continuous financial support for my upkeep and studies in Canada.

Finally, I thank my family for loving me unconditionally, and always believing in me and without whose support and guidance I would have never reached this point today. I especially thank my mother, Mrs Akanpinpak Adeetuk, my father, Mr Daniel Azechum Akangutiba(Late), my sister Benedicta, my Uncle Gilbert Adeetuk, my cousins George Atiim, and Pearl Adeetuk. Most importantly, I thank my lovely wife Priscilla, whose immeasurable and unyielding love, constant support, and encouragement has kept my spirit bright, and I am forever grateful.

Abstract

**Agricultural Policies and Food Security:
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Ghana's government over the years has adopted and implemented several agricultural policies and programmes with the overall objective of stimulating agricultural growth and enhancing food security. This thesis uses the Oxfam model to assess the impact of agricultural policies on food security among smallholder farmers in northern Ghana. It argues that government agricultural policies have failed to have a positive impact on food security among smallholder farmers in northern Ghana because they were more geared towards promoting the large scale commercial agricultural sector than the smallholder agriculture sector. This claim is supported by the data in Ghana which proves that food insecurity is still a major problem among smallholder farmers in northern Ghana despite the policies and programmes put in place to tackle it. The analysis is based on two main sets of data: national agricultural policies and regional policies from 1980 to 2000.

September 15, 2017

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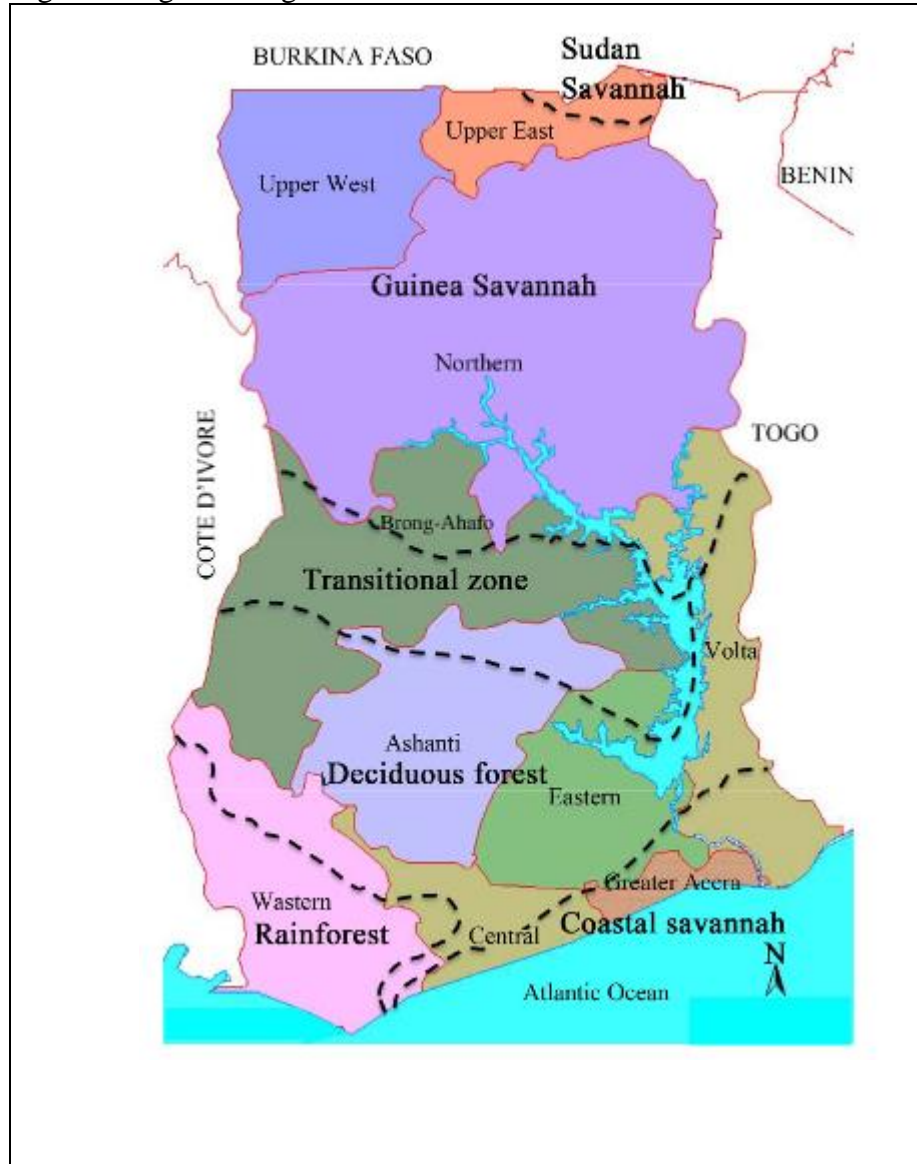
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Acronyms

| | |
|--------|--|
| ADB | African Development Bank |
| CEPA | Centre for Policy Analysis |
| DFID | Department for International Development |
| ECA | Economic Commission for Africa |
| EPA | Environmental Protection Agency |
| FAO | Food and Agricultural Organization |
| GOG | Government of Ghana |
| GSS | Ghana Statistical Service |
| IFAD | International Fund for Agricultural Development |
| IMF | International Monetary Fund |
| MDGs | Millennium Development Goals |
| MOFA | Ministry and Food and Agriculture |
| NADMO | National Disaster Management Organization |
| NDPC | National Development Planning Commission |
| ODI | Overseas Development Institute |
| SSA | Sub Saharan Africa |
| UNDP | United Nations Development Programme |
| UNICEF | United Nations International Children's Emergency Fund |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| USAID | United States Agency for International Development |
| WFP | World Food Programme |
| WTO | World Trade Organisation |

Figure 1: Agro-ecological zone classification in Ghana



Source: Kemausuor Akowuah and Ofori (2013)

Chapter 1: Introduction

Introduction and Research Question

In spite of gaining political independence, many African governments have faced considerable challenges that make it hard to meet the socio-economic needs of their citizens. One of the most critical development concerns facing much of the Sub-Saharan Africa (SSA) today is how to design and implement effective policies to stimulate agricultural growth and enhance food security to meet the needs of the rapidly growing population (Owusu and Abdulai, 2009, p.2; Zimmermann et al., 2009, p.37).

In 2013, Cheru and Modi noted that food insecurity is one of the most critical challenges in Sub-Saharan Africa, where large proportions (70-80 per cent) of the population especially the poor, live in rural areas and depend on agriculture for their livelihoods (Cheru and Modi, 2013, p.17). Although significant progress has made towards achieving economic development and food security worldwide, food insecurity remains a significant problem particularly in Sub-Saharan Africa (Fan, 2010, p.4).

Furthermore, Oxfam Report (2006) notes that while the average percentage of under-nourishment in the developing world is 17 percent, that for Sub-Saharan Africa is 33 percent. The report further notes that most of the poor and undernourished population in Sub-Saharan Africa live in rural areas and smallholder farmers and women in particular are vulnerable to food insecurity as a result of marginalisation and neglect (Mayne, 2006, p.1-3).

Ghana is no exception, like most sub-Saharan African countries, it is also faced with food insecurity particularly in the northern parts of the country. While Ghana has made

progress in reducing the share of the population living in extreme poverty, food security still remains a challenge, especially in the deprived three northern regions (WFP, 2015). Again, even though agriculture persist to be the predominant income source and employment for majority of rural households, food insecurity remains a daily struggle for most of the people especially in the northern Ghana (WFP, 2012).

Between 1992 and 2006, whereas the southern regions of Ghana achieved a decline in the number of poor people by 2.5 million, the regions in the north recorded an increase of 900,000 poor people (International Fund for Agricultural Development [IFAD], 2012, p.5).

Northern Ghana, (comprising Upper East, Upper West and Northern regions), covers about 40 per cent of Ghana's total land area, and about 20 per cent of the total population (Yaro, 2010). Over 80 percent of the population of northern Ghana depend on agriculture for their livelihood with majority being smallholder farmers (Songsore,1996). The farming system is largely dependent on rain-fed cultivation of crops such as maize, rice, sorghum, millet, groundnut and vegetables (Dietz et al, 2004; Shepherd et al, 2005; Nyantakyi-Frimpong, 2013).

However, unlike the southern portion of Ghana where there are two rainy seasons allowing for all year round cultivation, the north which is dominantly of savannah, is characterised by poor soil quality, a single and increasingly erratic rainy season, and recurrent floods and drought (WFP, 2015).

In addition, other reasons contributing to food insecurity include, high population growth, lack of access to education, lack of secured land tenure, poor extension services, inadequate credit, lack of infrastructure such as roads, and widespread poverty (Owusu et al., 2011, p.3; Stanturf et al., 2011).

In a bid to address food insecurity and improve the wellbeing of the population, since the 1980s, several agricultural policies and programmes have been initiated by successive governments to enhance agriculture production and promote food security. However, despite the policy interventions variously pursued by different governments, there is still high incidence of food insecurity in Ghana and in particular among smallholder farmers in northern Ghana. It is currently estimated that about 680,000 people, representing 16 per cent of all households in these regions are facing food insecurity (WFP, 2012, p.20).

This research focuses on assessing agricultural policies and impact on food security in northern Ghana. The central question this thesis sets out to ask is why is there food insecurity among smallholder farmers in northern Ghana although several national and regional agricultural development policies and programmes have been put in place since the 1980s?

This thesis will argue that agricultural policies have not positively impacted the food security in Ghana, particularly among smallholder farmers in northern Ghana because they were more directed towards achieving higher productivity within the large scale commercial sector to the neglect of the smallholder agriculture. More so, government focus has been more on export promotion than that of food crops production.

I recognise that there are many governmental policies in Ghana affecting food security but I will focus on agricultural policies.

Literature Review

This section below will begin by defining food security and then proceed to discuss its components, thereafter, the debate between support to large scale and smallholder agriculture will be discussed. In this chapter, the Oxfam smallholder agricultural-led development model will also be discussed.

The concept of food security came to the fore in the mid-1970s, as a result of the world food crisis which witnessed unprecedented increases in the international trading prices of staple (Allen, 1999, p.117-118). During this period, the focus of the debate was on strengthening food production to increase availability and stability of global food supplies of basic foodstuffs, most especially cereals, to meet growing demands (Mechlem, 2004). Such demands were caused by population growth and the occurrence of a drought across many major grain-producing countries particularly in the developing regions that resulted in heavy demands on international grain markets (Mechlem, 2004). However, the 1980s, saw a shift in the original thinking of food security away from food availability at the national or global level to access at household and individual level (ibid, p.632).

According to Frankenberger, Drinkwater, and Maxwell (2000), Sen's (1981) theory on food entitlement had a considerable influence on this change in thinking, representing a paradigm shift in the way that food insecurity and famines were conceptualized. Food

entitlements of households derive from their own production, income, gathering of wild foods, community support (claims), assets, migration, etc. Thus, a number of socio-economic variables have an influence on a household's access to food. In addition, growing food insecurity was viewed as an evolving process where the victims were not passive to its effects. Social anthropologists observed that vulnerable populations exhibited a sequence of responses to economic stress, giving recognition to the importance of behavioural responses and coping mechanisms in food crises (Frankenberger 1992 cited in Frankenberger et al., 2000, p.2).

Since then, the term has been defined in various ways. For instance, according Baldwin (2006), food security and insecurity are terms used to describe whether or not people have access to sufficient quantity and quality of food. The World Bank in 1986 defined food security as "access by all people at all times to enough food for an active and healthy life" (World Bank 1986 cited in Quaye, 2008, p.334). Maxwell and Wiebe (1999) described food security as the state of having secure and sustainable access to sufficient food for an active and healthy life. According to Pinstrup-Anderson (2009 in Oni and Fashogbon, 2013 p.112), food security was originally described as whether a country has enough access to food to meet all its citizens food energy requirements. According to Maharjan and Khatri-Chhetri (2006, p.3), food security is widely considered as all people at all times have access to enough food for an active life, while food insecurity is the inability of a household or individual to meet required consumption levels in the face of fluctuating production, prices and incomes. Yaro (2004, p.20) defines food security as having "secure access by households and individuals to nutritionally

adequate food at all times and procured in conformity with human aspirations and dignity”. Added to this, the ECA described food security as the ability of households, communities and the state to mobilize sufficient food, through production, acquisition and distribution, on a sustainable basis (Economic Commission for Africa [ECA], 2009, p.24). The United Nations Development Programme (UNDP, 2012) states that

People are considered well-fed and well-nourished when they can obtain safe food of sufficient quantity, variety and quality to sustain their lives. They need food that provides energy for growth, physical activity and basic human functions, from breathing and thinking to circulation and digestion (UNDP, 2012, p.9).

Further, in Ghana food security is understood as “good quality nutritious food, hygienically packaged and attractively presented, available in sufficient quantities all year round and located at the appropriate places at affordable prices” (MOFA, 2007, p.24).

Schmidhuber and Tubiello, (2007, p.1) argue that food security is not merely defined whether food is available, but also whether the monetary and nonmonetary resources at the disposal of the population are sufficient to allow everyone access to adequate quantities of food. Eme et al. (2014) also argue that food security is not simply having sufficient and adequate quantities of our various staple foodstuffs but it also encompasses access to the entire citizenry to these food items at affordable prices. At the household level, food security is defined as sustainable access to food of sufficient quantity and quality to ensure adequate dietary intake and a healthy life for all household members (Mallick and Rafi, 2010).

According to the IFAD, household food security is defined as ‘the capacity of households to procure a stable and sustainable basket of adequate food’ (IFAD, 1996

cited in de Waal and Tumushabe, 2003, p.1). Also, “a household is food secure when it has access to food needed for a healthy life for all its members and when it is not undue risk of losing such access” (Sultana and Kiani, 2013, p. 12973). Pinstrup-Andersen (2009, p.6) explains two reasons why household food security may not guarantee food security for all household members. Firstly, the ability to obtain enough food may not be transformed into actual food procurement. Secondly, the intrahousehold allocation of the food may not be based on the needs of every member of the household.

Food Insecurity

Food insecurity refers to the inability of a household or individual to meet required consumption levels in the face of fluctuating production, prices and incomes (Maharjan and Khatri-Chhetri, 2006, p.3). Also, food insecurity “occurs when food systems are stressed so that food is not accessible, available, and of sufficient quality” (Beaumier and Ford, 2006, p. 196). The Hunger Task Force described food insecurity as “a condition in which people lack basic food intake to provide them with the energy and nutrients for fully productive lives” (cited in Meakin and Kurvits, 2009, p.10). Further, UNDP (2012) defined food insecurity as “the inability to consistently acquire enough calories and nutrients for a healthy and productive life” (UNDP, 2012, p.1). According to Sen (1981), “food insecurity occurs when the sum of all food that individuals, households or groups acquire from production, labour, trade and transfers is inadequate to meet their minimum consumption needs” (Sen 1981 in Devereux, 2016, p.53). Simmons (2013, p.9) explains food insecurity as state of condition which prevails when people’s access to the food that they grow themselves or obtain from the market place is disrupted, reducing the volume

and quality of foods available to them to live an active and healthy life. Weaver and Hadley (2009) argue that food security is a broader concept that embraces not only lack of food, but also situations in which individuals feel that their future food supply may be threatened and, in the face of this recognition, change their dietary intake or their behaviours. In this way, a person can be consuming sufficient food calories but still be experiencing anxiety over future food (p.265).

Basically, food insecurity can be classified into two major forms namely chronic and transitory food insecurity (Misselhorn et al., 2010, p.89). Chronic food insecurity refers to a persistent lack of “sufficient, safe, nutritious food to maintain a healthy and active life,” and is generally caused by extreme poverty (FAO 1996 in Hendrix and Brinkman, 2013, p.4). Similarly, it occurs “when people are unable to meet their minimum food requirements over a sustained period of time” (Misselhorn et al., 2010, p.89). Adeoti (1989 in Amaka et al., 2016) opine that chronic food insecurity emerges from lack of resources to obtain and produce food thereby leading to persistent inadequate diet.

On the other hand, transitory food insecurity refers to “a sudden (and often precipitous) drop in the ability to purchase or grow enough food to meet physiological requirements for good health and activity” (Barrett and Sahn, 2001, p.1). WFP (2004) noted that “transitory food insecurity affects households that are able to meet their minimum food needs at normal times, but are unable to do so after a shock” (WFP, 2004 in Misselhorn et al., 2010, p.91). According to the World Bank (1986) “The major sources of transitory food insecurity are year-to-year variations in international food prices, foreign exchange earnings, domestic food production and household incomes.

These are often related. Temporary sharp reductions in a population's ability to produce or purchase food and other essentials undermine long term development and cause loss of human capital from which it takes years to recover" (World Bank, 1986 cited in FAO, 2003, p. 32).

Baldwin (2006) has indicated that food insecurity applies to a wide range of phenomena, from famine to periodic hunger to uncertain food supply. Hunger can be experienced temporarily by people who are not food insecure, as well as those who are food secure. Hunger is often used to refer in general terms to millennium development goal (MDG1) and food insecurity. Baldwin (2006) further noted that about 10% of world hunger is acute, when lack of food is short term, and is often caused when shocks such as drought or war affect vulnerable populations. Chronic hunger is a constant or recurrent lack of food and results in underweight and stunted children, and high infant mortality. 'Hidden hunger' is a lack of essential micronutrients in diets (Baldwin ,2006, p.2). According to Baldwin (2006), poverty, health, food production, political stability, infrastructure, access to markets, and natural hazards are major determinants of food security. Clark et al. (2008), argue that food insecurity is not merely caused by failure of agriculture to produce enough food, but also by many structural inadequacies that make it difficult for households to have access to food. They also noted that accessibility to food may be influenced by factors such as income levels, population growth, infrastructure, lifestyles and preferences, and human resource development (p.28).

Components of Food Security

The definition of food security is commonly conceived to encompass four key dimensions of food supplies namely availability, stability, access, and utilization (Schmidhuber and Tubiello, 2007). Elaborating further, Schmidhuber and Tubiello, (2007) explains that availability refers to the overall ability of the agricultural system to meet food demand and its subdimensions include the agro-climatic fundamentals of crop and pasture production and the entire range of socio-economic and cultural factors that determine where and how farmers perform in response to markets. Stability, which is the second dimension, refers to individuals who are at high risk of temporarily or permanently losing their access to the resources required to consume adequate food, either because these individuals cannot withstand or cope with income shocks or they lack enough “reserves” to smooth consumption ex post or both(*ibid*). access as the third dimension, refers to access by individuals to adequate resources (entitlements) to acquire appropriate foods for a nutritious diet. “Entitlements are defined as the set of all those commodity bundles over which a person can establish command given the legal, political, economic, and social arrangements of the community of which he or she is a member” (*ibid*). Finally, the fourth dimension of utilization embraces all food safety and quality aspects of nutrition and therefore its sub-dimensions are related to health, including the sanitary conditions across the entire food chain(*ibid*).

According to FAO, IFAD and WFP (2013), there are four core determinants of food security namely availability; accessibility; utilization and stability.

Food Availability: - availability plays a significant role in food security. Providing enough food in any given country or region is a necessary, but not adequate to guarantee or ensure that people have sufficient access to food. Over the years, population has grown faster than food supply thus leading to food unavailability per person (ibid, p.18).

Accessibility: - A person's or an individual's ability to have access to food depends on two major conditions: economic and physical access. Economic access depends on one's income, price of food and purchasing power and access to social support. Physical access on the other hand depends on the availability and quality of infrastructure needed to produce and make food available to where it is required. Lack of economic access to food is due to an increase in the rate of poverty (ibid, p.18-19).

Food utilization: - Food utilization is determined by two outcome indicators which reflect the impact of inadequate food intake and utilization. The first outcome is assessed by under-five years of age nutrition level whereas the second measurement is quality of food, and preparation, health and hygiene. According to FAO, assessing the nutritional status of children under five years of age is an effective approximation for the entire population. The indicators for measurements of children under five years of age are stunting (being too short for one's age), underweight (being too thin for one's age) and wasting (being too thin for one's height). Since 1990, the prevalence rates for stunting and underweight in children below five years old have declined in some developing countries while some countries still report prevalence rates of 30% or more and WHO classifies this as being high (WHO-UNICEF, 2011 cited in FAO et.al.,2013).

Stability: - Stability concerns about exposure to short-term risks which may have a way endangering long-term progress. Principal indicators for exposure to risk include climate shocks such as droughts, and volatility in the prices of input for food production. The world price shocks produce domestic price instability which is a threat to domestic food producers as they stand the chance of losing invested capital. Ghanaian farmers particularly in the northern part of the country are mainly smallholders producing mainly for subsistence, this makes it hard for them to cope with changes in the prices of inputs, and it also lowers their ability to adopt new technologies thus resulting in reduced overall production.

The above four elements of food security are independent of each other. This illustrates that the attainment of one component does not automatically translate to the attainment of others and food security will not be considered to have been obtained unless the four dimensions are met. In summary, food availability is necessary but not sufficient to guarantee accessibility the same way accessibility does not guarantee utilization (Webb et al., 2006). For instance, food may be available in the market, but an individual may not have resources (money) to purchase it or an individual may have the funds to buy food but it may not meet the nutritional requirements, as it could be unwholesome. In short it implies that any government policy seeking to address food insecurity must give due consideration to all the four dimensions.

Food Sovereignty

The notion of ‘food sovereignty’ was originally brought to light by La Vía Campesina to discuss the nature of power relations within the food system and the hope for the democratic, widely dispersed, and just distribution of those powers over food (Wittman, Desmarais and Wiebe, 2010, p. 2). Windfuhr and Jonsen (2005) noted that “while food security is more of a technical concept, and the right to food a legal one, Food Sovereignty is essentially a political concept” (p.15). Food sovereignty was coined to “recognize the political and economic power dimension inherent in the food and agriculture debate and to take a pro-active stance by naming it” (Wittman et al., 2010, p. 2). Food sovereignty, broadly defined as the “right of nations and peoples to control their own food systems.... has emerged as a critical alternative to the dominant neoliberal model for agriculture and trade” (Wittman et al., 2010, p. 2). Richard Lee (2013) added that the food sovereignty discourse “demands the removal of agriculture from the international trade system and rejects agricultural biotechnology and energy-intensive (or ‘industrial’) agriculture in favour of localised food production and the protection of rural livelihoods across all nation-states” (p.218). Also, Windfuhr and Jonsen (2005) established that the “food sovereignty framework is some counter proposal to the neo-liberal macroeconomic policy framework. It is not directed against trade per se, but is based on the reality that current international trade practices and trade rules are not working in favour of smallholder farmers...” (p.32).

La Via Campesina is an international movement comprised of peasants, small and medium-scale farmers, rural women, farm workers and indigenous agrarian communities

in Asia, the Americas, Western Europe and Eastern Europe and Africa (Desmarais, 2017). La Vía Campesina first discussed the key principles embodied in food sovereignty at its Second International Conference, held on April 18–21, 1996, in Tlaxcala, Mexico and then presented it in the international arena at the World Food Summit held in Rome in 1996(Wittman et al., 2010). As Martínez-Torres and Rosset (2010) notes, La Vía Campesina claims that every country and its people must have the right as well as the capacity, to define their own food and agricultural policy, that they must have the right to protect domestic markets and public sector budgets for agriculture that may include subsidies which will not lead to over production, exports, and dumping in other countries (ibid). Further, they believe that low prices are the worst force that confront farmers, particularly smallholder farmers, across the world therefore we need to effectively ban dumping, employ anti-monopoly measures at the national and global levels, effectively check overproduction in the large agroexport countries, and address the kinds of direct and in-direct, subsidies that trigger low prices and overproduction. Better still, that we need to move from policies that cause low food prices and embrace ones that will ensure fair prices for producers and consumers (Martínez-Torres and Rosset, 2010, p.160).

In 2007, the International Forum on Food Sovereignty held in Nyeleni, Mali broadly defined the concept as follows:

Food sovereignty is the right of peoples to healthy and culturally appropriate food, produced through ecologically sound and sustainable methods, as well as the right to define their own food and agriculture systems. It puts those who produce, distribute and consume food at the heart of food systems and policies rather than the demands of markets and corporations. It defends the interests and inclusion of the next generation. It offers a strategy to resist and dismantle the current corporate trade and food regime, where directions for food, farming, pastoral and

fisheries systems are to be determined by local producers. Food sovereignty prioritises local and national economies and markets and empowers peasant and family farmer-driven agriculture, artisanal fishing, pastoralist-led grazing, and food production, distribution and consumption based on environmental, social and economic sustainability. Food sovereignty promotes transparent trade that guarantees just income to all peoples and the rights of consumers to control their food and nutrition. It ensures that the rights to use and manage our lands, territories, waters, seeds, livestock and biodiversity are in the hands of those of us who produce food. Food sovereignty implies new social relations free of oppression and inequality between men and women, peoples, racial groups, social classes and generations. (Via Campesina, 2007 cited in Patel 2009, p.666)

Based on this definition, Food Secure Canada argued that food sovereignty should include six key pillars;(1) focuses on food for the people by: a) placing people's need for food at the centre of policies; and b) insisting that food is more than just a commodity. (2) places control at local level by: (a) placing control in the hands of local food providers; and (b) rejecting the privatization of natural resources. (3) values food providers by: (a) supporting sustainable livelihoods; and (b) respecting the work of all food providers. (4) localizes food systems by: (a) reducing distance between providers and consumers; (b) rejecting dumping and inappropriate food aid; and (c) resisting dependency on remote and unaccountable corporations. (5) promotes knowledge and skills by: a) building on traditional knowledge; b) using research to support and pass on this knowledge to future generations; and c) rejecting technologies that undermine local food systems. 6) works with nature by: (a) maximizing the contributions of ecosystems; and (b) improving resilience (Food Secure Canada, 2012).

This framework serves as critical approach to this research because the central objective of the thesis is to assess the impact of agriculture policy on food security among smallholder farmers. The food sovereignty model shows that for food security to be fully

achieved, agricultural policy interventions need to provide opportunities for smallholder farmers to have control of productive resources and this supports the Oxfam model which will be discussed in subsequent sections.

Food Security and Agricultural Policy

Large Commercial Agriculture Policies Versus Support to Smallholder Production

The thinking on the fundamental role that agriculture plays in structural transformation in the policy discourse has evolved over time (Pingali and Rosegrant, 1995; Byerlee, et al., 2009). The literature presents dichotomous views on the role of agriculture in economic development, and in most cases the discourse focuses on the extent of market orientation, and production diversification. Agriculture in Sub-Saharan Africa, has for decades been characterized as smallholders cultivating less than 2 hectares of lands and living in endemic poverty. The transition from subsistence to market-oriented commercial enterprises is a critical driving force in the agricultural transformation process (Johnston and Mellor 1961). However, today, the smallholder led development strategies have failed to transform the agriculture in SSA which has led many scholars to question the effectiveness of a smallholder-led strategy in transforming SSA agriculture production systems from small household-based enterprises to commercially oriented farms (Houssou et al. 2016, p.5).

Since the 1960s, most of the agriculture development economics has followed the ‘inverse productivity’ relationship, argued by Chayanov (1926), that output per hectare are higher on smaller farms than on larger farms. Similarly, Mellor (1976) argued agriculture production stimulates forward consumption and backward production

linkages. These growth-linkages are most effective when agricultural growth is driven by broad-based productivity increases in a rural economy dominated by small farms, as in much of Asia (Mellor, 1976 cited in Byerlee et al., 2009, p.2). Smallholder-led Strategy is inspired by the view that most population across the developing regions is predominately rural and living in marginal lands and in poverty, in view of this, any policy strategy must focus on smallholders aimed at poverty reduction (Hazell et al., 2006).

However, scholars have extensively criticized the relevance of the smallholder-led strategy towards agriculture development especially in Africa (Collier 2008; Collier and Dercon 2014). For instance, Collier (2008) argued that smallholder and subsistence mode of production is ill suited to agricultural development in a rapidly changing world in which 'scale is helpful' and that market-oriented agricultural production is the best pathway for developing economies especially in Africa to advance growth and catch up with the developed world. Also, Collier and Dercon (2008) argue that development strategies need to shift focus away from smallholder farm models and embrace new forms of commercialization without involving large state-led farms, but rather encourage serious, large-scale investment in commercial agriculture. They identified several advantages that larger scale commercial farms have over smallholder farms. First, larger scale farms are better able to exploit of economies of scale, in trading, marketing, and storage. Second, larger farms are in a better position to produce to meet the growing urban population food demands than millions of smallholder farmers with less or no surplus produce to sell. Third, these larger farms are in a far better position than

smallholders to adopt new technologies and access to finance and logistics. Finally, decades of effort to promote smallholder agriculture development and food security have seen little success in Africa.

Food Insecurity in Sub-Saharan Africa

Sub-Saharan Africa (SSA) is widely regarded as the poorest region in the world (Chauvin et al., 2012, p.1). Also, Sub-Saharan Africa is the only region of the world where hunger is projected to worsen over the next two decades unless some drastic measures are put in place to improve governance and attain the economic development required to reverse the current trend (FAO, 2005, p.1).

In 2003, 38 million people in SSA were affected by acute food insecurity, and an additional 24,000 died daily from hunger (Clover, 2003, p.6). Between 2000–2002, over 850 million were estimated to be undernourished worldwide, of which SSA alone accounts for 25 percent (Haile *et al.*, 2005). Also, Oxfam (2006) notes this challenge, stating:

Lack of food availability is a significant problem in sub-Saharan Africa: agricultural production has barely kept pace with population growth in some countries, and drought and locusts can result in local shortages. Moreover, conflict and poorly functioning markets in many countries can cut off food supply (Oxfam, 2006, p.9).

Furthermore, ActionAid (2009) identifies several challenges hindering smallholder agricultural production in sub-Saharan Africa including the following:

- In sub-Saharan Africa, millions of farmers depend on increasingly degraded, less productive land, many cultivating on smaller plots while

landholdings are placed in the hands of large scale farmers or plantations(ibid).

- Only 4 percent of farming land in sub-Saharan Africa is irrigated, implying that smallholder farmers largely dependent on rain-fed agricultural farming system. Often these farmers are at the mercy of the increasingly erratic weather(ibid).
- Most smallholder producers engage only basic farming techniques, relying on family labour, recycled seeds and a hoe, at the same time they have limited access to drying and storage facilities, making it difficult to raise productivity(ibid)
- In many rural areas farmers also face problems that constrain them from selling their produce at good prices. Food markets are often controlled by exploitative private sector traders and middlemen who offer low prices for produce at farm gates(ibid)
- Government extension services, such as training and support to small-scale, are generally weak and often non-existent, particularly in more remote rural areas. Several countries, there exists few affordable credit facilities that suit the needs of smallholders. This implies that farmers' ability to invest in crop and/or land improvement to attain increased yields in agricultural and food production is seriously hindered (Action Aid, 2009, p.5).

Factors that Impede Food security in Sub-Sahara Africa

There are various factors militating against the efforts by sub-Saharan African countries to achieve food security and various scholars have made the attempt to unravel these issues, below are some of these factors discussed.

Low Agricultural Productivity

The Government Accountability Office (GAO) notes that one of the most significant factors that contribute to food insecurity in sub-Saharan Africa is its low agricultural productivity. It added that low agricultural productivity in sub-Saharan Africa is in part due to insufficient investment and the low use of modern inputs. According to FAO report, productivity has remained stagnated due to underutilisation of water resources, limited use of fertilizer, low application of improved soil-fertility management practices and weak support services (FAO, 2005). Also, Mwaniki (2006) notes that over 90 percent of the food in Sub-Saharan Africa is produced under rain fed agriculture hence food production is vulnerable to adverse weather conditions(ibid). Other constraining factors include rural-urban drift leading to shortage of labour rural agriculture, rapid growing population, inadequate access to agriculture-related technical assistance, and insufficient know-how about profitable soil fertility management practices resulting in expansion into unsuitable lands(ibid). Gebremedhin (2000) adds that the “poor performance of agriculture and the insecurity of food supplies in Sub-Saharan Africa over the past quarter century have been due primarily to inappropriate policies—to policies that discriminated against agriculture and resulted in largescale governmental interventions in international trade” (p.229).

Poverty

According to Mwaniki (2006), the root cause of food insecurity in sub-Saharan Africa is the inability of people to gain access to food due to poverty. Similarly, Kuwornu et al. (2013) argue that poverty is the most important determinant of food insecurity in Sub-Saharan hindering food production and people access to food. According to Shi (2014) across the developing world particularly sub-Saharan Africa, poverty and unequal human rights are the major driving factors of food insecurity. Also, despite sub-Saharan African has seen rapid economic growth in the last decade, it remains the only region in the world where poverty has been increasing for the past three decades (Nkurunziza, 2006). Further, sub-Saharan Africa is the only region of the world where the share of people below the poverty line has been rising(Chen and Ravallion, 2007). According to the UNDP Report (2006), “more than 40 percent of the region’s population live on less than US\$1 per day, while more than 70 percent have less than US\$2/day. In the region as a whole, more than 40 percent of the total population fall below national poverty lines” (UNDP, 2006 cited in Faures and Santini, 2008, p.18).

Constraints to Market Access

Another critical constraint on food security in sub-Saharan Africa is poor access to market by smallholder farmers. The problem according Mwaniki (2006) is in many-fold mainly poor infrastructure and barriers in penetrating the market caused by limited resource base, inadequate information and lack of support institutions and poor policies. Poor infrastructure literally limits the markets to which smallholder farmers can

profitably take their farm produce by increasing the cost of transportation, and hence also serves as hindrance to market penetration. Other obstacles include market standards, limited product differentiation, limited information, requirements for large initial capital investments, and handicapping policies (Mwaniki, 2006).

Lack or limited employment opportunities in rural areas

According to GAO (2008), poor rural development and employment has also been considered as a major factor aggravating food insecurity in sub-Saharan Africa. Koira (2014) assert that Sub-Saharan Africa's economic growth over the last two decades has failed to generate employment opportunities. He further stated that while this is partly due to the rapidly growing labour supply, it is largely due to the inability of the region's economies to create enough jobs. UNDP (2012, p.34) observed that throughout sub-Saharan Africa limited opportunities for salaried employment at decent wages impede people's ability to obtain food and that even in poor households that rely on salaries and wages as a major source of income, "wages are no guarantee of a life without poverty and hunger". Further, it noted that "smallholder farmers devote most of their resources to growing food, but their farm productivity is too low to meet all their food needs, so much of their cash income goes towards more food rather than towards other goods" (UNDP African Human Development Report, 2012, p.34). Similarly, Nkurunziza (2006) observed that many sub-Saharan Africans in the agricultural sector who are either self-employed or wage earners are the poorest people, mainly because of the poor growth of the agriculture sector.

Bad governance and misguided policies

Inappropriate policies, it is noted have had a significant impact on poor economic performance and food insecurity in the sub-Saharan African (Mule, 2001). The author further pointed out that the majority of sub-Saharan African countries for several years after independence have pursued import, substituting industrial policies, which negatively impacted on domestic terms of trade for agriculture(ibid). Also, a report by the UNDP stated:

Misguided policies, weak institutions and failing markets are the deeper causes of sub-Saharan Africa's food insecurity. For decades, the policies of national governments and international institutions neglected sub-Saharan Africa's rural and agricultural development in favour of urban populations. Structural adjustment programmes aimed to close budget gaps but instead created large human development deficits, especially among the vulnerable poor, and skewed allocations of national revenue and foreign aid that overlooked agriculture and nutrition (UNDP, 2012, p.2).

Added to this, Eicher and Staatz (1985, p.218) note that the challenge of food insecurity in sub-Saharan is not only due to recurrent drought but also because of the failure of most governments to create economic systems that produce sufficient income for the poor to gain access to adequate food produced at home or purchased in the market.

Corruption

Corruption is another major issue widely considered to have great impact on sub-Saharan African agricultural growth and food security. Martin (2010) for instance, noted that another key factor that has hampered agricultural development in Sub-Saharan Africa is government misallocation of public funds, which many times has been tied to corruption, and other times, tied to bureaucratic and institutional restraints. He further

noted that inept governments have posed a major challenge at times to the adoption of more effective responses to malnutrition and the establishment of food security based development (Martin, 2010, p.2). Also, as the Africa Commission (2005) noted that, many sub-Saharan Africa countries have:

... suffered from governments that have looted the resources of the state; that could not or would not deliver services to their people; that in many cases were predatory, corruptly extracting their countries' resources; that maintained control through violence and bribery; and that squandered or stole aid (Africa Commission, 2005, p.106).

The UNDP 2012 report states that “chronic food insecurity in sub-Saharan Africa stems from decades of poor governance. Regimes bent on amassing wealth absorbed the region’s resources into patrimonial power structures. Self-serving elites, quick to profit from graft and patronage, have stood between leaders and the people, monopolized state revenues and emptied the countryside, but they have provided neither employment nor industry”. The report proceeds to state that “across sub-Saharan Africa rural infrastructure has deteriorated, farming has languished, gender and other inequalities have deepened and food systems have stagnated. Smallholder farmers, on whose shoulders the recovery of its agriculture rests, have long been pinned between a rock and hard place” (UNDP, 2012, p.vi). Bain et al. (2013) add that misappropriation of state funds and corruption have resulted in division amongst peoples, wars, high spending on war equipment, further impoverishment of the population, compounding the burden and consequences of food insecurity in sub-Saharan Africa.

Unfavourable international policies

In addition, unfavourable international policies and practices have also been recognised as one of the major contributing factors behind the poor agricultural growth and food insecurity. For instance, the UNDP Report in 2012 noted that “multiple biases in international agricultural trade— large subsidies to farmers in high-income countries and to biofuel producers, the decline in assistance to agriculture in sub- Saharan Africa — hamper sub-Saharan Africa’s food systems” (UNDP, 2012, p.53). The report further notes that “agricultural subsidies that benefit the rich in developed countries while hurting the poor in sub- Saharan Africa are one of the most egregious and persistent distortions in world trade” (ibid, 2012, p.53). Similarly, Oxfam Report of 2006 indicates that;

inadequate debt cancellation, declining and poor-quality development aid, flawed advice from donors, conditions attached to aid that forced countries to adopt damaging agricultural policies, and unfair trade rules...” are critical to understanding the current food security situation of SSA (Oxfam, 2006, p.14).

Health conditions

Diseases such as tuberculosis, malaria, HIV/AIDS also increase household food insecurity in sub-Saharan African countries. HIV/AIDS is one of the leading causes of adult mortality and morbidity in sub-Saharan African (Mwaniki 2006). As of 2003, about 2.2 million of SSA population died of the disease and an estimated 12 million children in the region lost one or both parents to HIV/AIDS (UNAIDS, 2004, p.30). In 2005, 38.6 million people were living with HIV/AIDS, of which 63 percent were in SSA (Baldwin, 2006, p.4). “FAO estimates that AIDS has killed seven million agricultural workers in

Africa since 1985. It has the potential to kill 16 million more within the next 20 years” (Interagency Coalition on AIDS and Development [ICAD],2001, p.1).

Population growth

The problem of food insecurity in sub-Saharan Africa is further compounded by high population growth (Binswanger-Mkhize, 2009). According the Commission for Africa (RCA), between 1980 and 2002, sub-Saharan Africa’s population grew from 383 to 689 million people, representing an increase of 80percent. The report further noted the rate of increase is 2.7 percent annually, which is much faster than other developing regions such as South Asia (2percent) and the East Asia and Pacific Region (1.4 percent). Rapid population growth in sub-Saharan Africa is increasing pressure on food supplies and the natural resources base, including fisheries, and grazing land for livestock (Rukuni, 2002). Similarly, increased growth of population in most countries of sub Saharan Africa have resulted in small, fragmented farms, making intensive farming difficult, reducing output and lowering land value (UNDP,2012).

Further, the UNCTAD reported that since the 1970s, sub-Saharan Africa’s population has been growing faster than the rest of the developing regions, exerting greater pressure on food security and compelling farmers to intensify production beyond the point of environmental sustainability (United Nations Conference on Trade and Development[UNCTAD], 2009, p.46). The Inter Academy Council Report (IAC,2004) adds that the per capita availability of natural resources has been declining in rural Sub-Saharan Africa; and many farms are becoming too small to support rural farm households’ due to growing population.

Political instability and conflict

Conflict and political instability have also been identified as major drivers of food instability and food insecurity in sub-Saharan Africa (Brody, Spieldoch, and Aboud, 2014; UNDP, 2012). The 2015 report of the UN Economic Commission for Africa(ECA) noted that armed conflict is one of the major factors aggravating people vulnerability in the region. Thrupp and Megateli (1999, p. 29) noted that continuous conflict and famine have wrought devastation and have disrupted human ecologies, resource use, and access arrangements of millions of people over large areas; the collapse of the states of Somalia, Liberia, and Rwanda is an example. They further noted that lack of participatory democracy has been identified as another cause of problems in SSA. State systems have continued to be nondemocratic and often oppressive, and although corruption is difficult to document, it has contributed to food and environmental insecurity as it provokes instability, inequities, and institutional weaknesses (Thrupp and Megateli 1999, p.30).

Maldistribution and natural hazards

Another critical reason often cited for the food security problem in Sub-Saharan Africa is the poor distribution of food supplies among the poor and vulnerable populations. Ehrlich, Ehrlich, and Daily (1993, p.3-4), reveal that the widespread and persistent chronic food insecurity and undernourishment in many parts of the developing regions particularly Sub-Saharan Africa results from maldistribution of otherwise abundant food supplies, and that better distribution would address the food hunger problem. From their perspective, outright starvation today is primarily a problem of food

distribution failures, often triggered or precipitated by political turmoil in an already vulnerable, poorly nourished population, as in the tragic situation in Somalia and a few years ago in Ethiopia and Sudan.

In addition, recurrent natural disasters such as drought and floods also increase the risks faced by the poor in the SSA region. As Chopra (2004) noted, drought, flooding and unseasonal weather coupled with chronic poverty, HIV and AIDS have continued to hamper food security in SSA. It is estimated that droughts and floods account for about 80 percent of the loss of life and 70 percent of the economic losses in SSA (Shiferaw et al., 2014). The World Water Forum (2000) notes that one-third of the people in SSA resides in drought-prone areas and are vulnerable to the impacts of drought (Boko *et al.*, 2007, p.437). In 2007, the United Nations (cited in Sasson, 2012, p.6) estimated that “zones struck by drought in sub-Saharan Africa might increase from 60 million to 90 million hectares from now to 2060...” and that “the number of people suffering from malnutrition might increase up to 600 million from now to 2080”. Furthermore, between 1980 and 2014, it is also estimated that, more than 363 million people have been affected by droughts (FAO, 2015, p.39). The same report further noted between 1991 and 2013, droughts caused losses of agricultural production (both crop and livestock) estimated at about USD 31 billion (*ibid*).

Gender inequality

In many Sub-Saharan Africa countries, the agriculture sector is underperforming, and one of the key reasons is that women do not have equal access to the resources and

opportunities they need to be more productive (FAO, 2011). Madzwamuse (2014) noted that gender inequality is one of the most significant structural reasons why sub-Saharan Africa has failed to attain its MDGs on poverty eradication and other development targets. Also, Hyder et. al. (2005) note that rural women farmers in sub-Saharan Africa have a very low social status. “They own 1% of land, receive less than 7% of farm extension services, receive less than 10% of the credit given to small farmers and are undernourished and illiterate” (Hyder, et al., 2005, p. 328). Further, Jato (2004) notes that women are most vulnerable populations to food insecurity in sub-Saharan Africa due to inequalities in access to productive resources and lack of control over labour as well as income.

Conclusion

This chapter examined the food security situation of sub-Saharan Africa, demonstrating that there are multiplicity of factors contributing to food insecurity in sub-Saharan Africa and these factors broadly can be considered under socio-economic, political and environmental factors.

Oxfam Model of Smallholder-Led Agricultural Production

For decades, the quest to increase agricultural production to meet demands of growing population especially across the developing world, has seen different models developed by several individual scholars and organisations providing various explanations as to how poverty alleviation, and food security can be achieved.

One of such key models is Oxfam smallholder-led agriculture development model. In this model, Oxfam has argued that food security can best be achieved if the agricultural

policy (or the policy framework) contains measures directly aimed at strengthening the capacities of small farmers, particularly women. Oxfam believes that such measures enhance the role of the small scale farmer in agricultural production by empowering and insulating them against discrimination, at the same time enabling them to improve their livelihoods as well as increase their food supplies, raise rural employment, purchasing power and foster more sustainable agricultural practices.

As Oxfam noted “supporting small-scale farmers is an important means to achieving more equitable poverty reduction, narrowing rural disparities and ensuring more broad-based rural growth. Small farms can also play a critical role in the preservation of environmental goods, in particular sustaining crop genetic diversity (which may well have implications for food security in the long-run)” (Oxfam International Research Report, 2009, p.13).

This model put forward by Oxfam suggest that food security can not be meaningfully achieved when agriculture interventions turn to ignore or neglect the smallholder producers who constitute the dominate producers in many parts of the developing world. For instance, according to IFAD (2013), there are an estimated 500 million small farms in the developing world and these small farms provide about 80 per cent of the food consumed in sub-Saharan Africa and Asia. Hence, any agricultural policy intervention seeking to promote agricultural production and raise rural income and reduce poverty must incorporate the needs of smallholder farmers. Within the model therefore Oxfam has prescribed seven critical elements that needs to be incorporated in agricultural policy frameworks or interventions geared towards smallholder agricultural development

and food security. These measures include, access to land, physical infrastructure which include rural roads, markets, and irrigation, extension services, access to credit and financial services, gender equity, and support to producer organisations.

Ensuring smallholder access to land and other productive assets as the model considered is necessary in any agricultural policy geared towards food security in view of the fact that it helps to enhance productivity and strengthen local land rights as well promote investment in sustainable management among smallholder producers (ibid, 2009). For example, as noted by Selim (2014) “without the security of land tenure, [smallholder farmers particular] women are also less likely to experiment with innovative farming methods and technologies (a problem compounded by their inability to access lending services” (p. 1089). Also, the Economic Commission for Africa (ECA, 2009) noted “land offers a wedge for the poor to mobilize their own power to chart their development destiny, and any attempt to mitigate poverty ought to be centered on the reinforcement of rights and opportunities arising from land and agriculture” (p.12).

For instance, a recent study by FAO shows that that if smallholders particularly women farmers had the same opportunities of access to productive resources such as (land, and credit) as men, they could raise yields by 20-30 percent (Garcia, 2013). Similarly, a 2010 report of the OECD noted that the lack of ownership of land and access to credit suffered by women smallholder farmers directly affect the wellbeing of their families. The number of malnourished children is 60 percent higher when there is no ownership of land. And when there is no access to credit, this figure increases to 85 percent (OECD, 2010, p.2).

Furthermore, another important element as the Oxfam model prescribed is promoting of physical infrastructure in rural areas (such as roads, irrigation and market facilities). Oxfam beliefs such measures help to enhance productivity of smallholder producers because majority of these people live in rural areas where these facilities are often poorly developed. As Vorley et al. (2012, p.22) have noted “a lack of appropriate policy and physical infrastructure would tend to favour large-over small-scale farming by raising the cost of procuring produce from multiple scattered smallholdings, and would increase the likelihood that investors will prefer in-house production on land they own or lease themselves”. Similarly, an FAO (2015) report noted that “for smallholders, limited access to markets increases their vulnerability to shocks and hinders economic opportunities that could arise if trade was easily available” (p.18). Mbise et al. (2010) argued that, the size of transaction costs could also affect the decision of farmers on how much quantity to supply to the market. This was discovered in the study of Bwalya et al. (2013) who noted that in Tanzania, small holder farmers only contribute 20 to 30 percent of marketable surplus. The low rate of supply and market participation can be attributed to high transaction costs faced by smallholder farmers in accessing adequate and timely markets as well as fair prices (Maziku et al., 2015).

Thesis Statement

The concept of food security as the literature vividly shows has been expanded so that not only food availability but it is also about the ability of people to access and utilise food. Again, we have learned from Oxfam and ActionAid what needs to be found in agricultural policies to support smallholder farmers to achieve food security.

This thesis examines Ghana's agricultural policies to determine if support went to large scale agricultural sector or did some policies include the measures prescribed by Oxfam to support small scale farmers. This is a useful framework because it provides what is needed in a policy to support small scale farmers. Oxfam has identified certain key elements as steps to reach the four components of food security which include access to land, rural roads, markets, and irrigation, extension services, credit and financial services, gender equity, and support to producer organisations.

This model put forward by Oxfam shows that in order to promote agricultural growth and address rural poverty, the needs and aspirations of smallholder farmers must be incorporated into policy designs. We will then apply this model by analysing the agricultural policies and programmes put in place by the Ghanaian government to see if some of these elements are incorporated in them. In particular, the focus of this thesis is on government's agricultural policy direction.

Methodology

This study is a qualitative case study of agricultural interventions and its impact on food security in northern Ghana. A case study approach was chosen to provide an in-depth evaluation of literature on Ghana's government agricultural interventions to address food insecurity in the three northern regions. Several types of data were collected from both primary and secondary sources in the course of this study. The data used for this case study can be divided into several categories: national poverty and food security in Ghana, national agricultural interventions, incidence of poverty and food insecurity in northern Ghana, causes of food insecurity in northern Ghana, and regional agricultural programmes.

The data collected on Ghana's government effort to address food insecurity in northern Ghana include its data on national and regional agricultural policies and programmes from (1980 to 2015) and its poverty and food insecurity data from the year 2009 till date. This was done in order to provide some context to the author's argument and to demonstrate the persistence of food insecurity in northern Ghana even in the mist of numerous interventions made within the agricultural sector.

The data used in the study was garnered from a variety of primary and secondary sources. Primary data used includes data from the Ghana Living Standards Survey (GLSS) from the Ghana Statistical Service (GSS), Ghana Ministry of Food and Agriculture (MoFA), Base line surveys of the United Nations World Food Programme, the websites of the World Bank, UNDP, FAO, IFAD, ECA, ADB, CARE International, from

other websites, databases, and archival records. Secondary data was gotten from journals articles and books. This thesis uses a combination of primary documents and secondary sources in an attempt to triangulate the data so that it is as accurate as possible.

The research conducted for this case study just as almost every research has its limitations and shortcomings:

1. This thesis only discusses governmental level analysis and does not involve community based field work. It only reviewed what is available on paper and what can be assessed on line. It is therefore imperative to know that the actual implementation of agricultural programmes and policies as well as how things happened on the ground might be different and thus the thesis may not be accurate in assessing the 'real' impact since there was no field work.
2. The thesis is only about agricultural interventions in relation to food security. Interventions by government in relation to other sectors such as health, mining, and industry could have different impact.
3. Some related secondary data was sometimes not available or accessing available usable data was difficult/ impossible. One has no idea if information could be available in hard copy since the researcher solely depended on online data and information.
4. Giving the constraints of the research methodology, some published literatures may have missed. However, despite the limits, this is a good step towards a more comprehensive future research.

Chapter Two: Agricultural Production and Food Insecurity in Ghana

Introduction

This chapter provides a brief discussion of the structure and contribution of agriculture to Ghana's economy. It will also examine the situation of food insecurity in Ghana, in order to present a true picture of the food security problem in northern Ghana. In this chapter, the underlying factors of food insecurity in northern Ghana will be discussed.

Like most other developing economies in sub-Saharan Africa, agriculture has contributed and continued to be a key driver of Ghana's economy growth and development (Egyir *et al.*, 2014). For instance, Quiñones and Diao (2011) observed that agriculture has been the main engine behind the tremendous economic growth that Ghana has witnessed in the last two decades. Also, Agricultural sector in Ghana has experienced growth rate of approximately 5 percent per year and this has contributed to a significant poverty reduction, increased farmer's income, and improved child and adult malnutrition (Leturque and Wiggins 2011, p.3).

Agricultural sector contributed 23 percent to GDP in 2012 and employed 53.6 of the labour force (FAO, 2015). In addition, the World Bank has demonstrated that agriculture also supports large segments of the population. According to a recent World Bank report of 2016, "agriculture remains the dominant source of income for the bottom 40 percent of the population, the sector employs 42 percent of workers, and will very likely continue to be a net job contributor in the foreseeable future" (World Bank, 2016, p.10). A World Food Programme (WFP) study showed that the welfare of the population, especially of

the poor who are mainly found in rural areas of northern Ghana, largely depends on the agricultural sector (WFP, 2012).

Structure of the Agriculture and Contribution to Ghana's Economy

In Ghana, the agricultural sector includes five sub-sectors namely, crops, cocoa, livestock, fisheries, and forestry. Table 1 shows the contribution of various subsectors to agriculture to GDP of Ghana in 2010.

Table 1: Contribution of Various Sub-sectors to Agricultural GDP (%) (2010).

| | |
|-----------|------|
| | |
| Crops | 66.8 |
| Forestry | 12.2 |
| Cocoa | 8.2 |
| Livestock | 6.1 |
| Fisheries | 7.3 |

Source: Statistics Research and Information Directorate (SRID) of the Ministry of Food and Agriculture (MOFA) 2011.

The non-cocoa crop sub-sector includes cereals (i.e. maize, sorghum and millet) roots and tubers (cassava, and cocoyam), industrial crops (tobacco, cotton, oil palm, and rubber), horticultural crops (mango, pineapple, ginger, and orange) and other crops such as plantain, and banana (MoFA, 2002). Maize is the largest staple crop in Ghana and contributes significantly to consumer diets. It is the number one crop in terms of area

planted and accounts for about 50-60 percent of total cereal production (Millennium Development Authority, 2014).

Furthermore, the sector is dominated by smallholder farmers and largely dependent on rainfed, particularly in the North. It is estimated that about 90 percent of farm holdings are less than one hectare (MoFA, 2007). The main farming system is traditional with hoe and cutlasses being the main farming tools. While there is little mechanized farming, bullock farming is practiced in some places, particularly in the northern parts of the country (MoFA, 2011).

Additionally, agricultural structure and the regional distribution of agricultural GDP in Ghana significantly differ across the agro-ecological zones. The Forest Zone remains the major agricultural producer, accounting for 43 percent of agricultural GDP, compared to about 10 percent in the Coastal Zone, and 26.5 and 20.5 percent in the Southern and Northern Savannah Zones, respectively (Breisinger et al., 2008). The Northern Savannah zone (northern Ghana) is the main producer of cereals and livestock. More than 70 percent of the country's sorghum, millet, cowpeas, groundnuts, beef and soybeans come from the Northern Zone, while the Forest Zone provides a large share of higher-value products, such as cocoa and livestock (especially commercial poultry) (Breisinger et al., 2008, p.12).

According to the Organisation for Economic Co-operation and Development (OECD), the heterogeneous agricultural production structure also shows differences in the agricultural income structure across regions. The Forest Zone generates about half its agricultural income from two of Ghana's primary export products (cocoa and forestry).

Including non-traditional exports and fishery, export agriculture also plays a major role in total agricultural income for the Coast and Southern Savannah Zones. In contrast, 90 percent of agricultural income comes from staple crops and livestock in the Northern Zone (Diao, 2010, p.17-18)

Food Insecurity in Ghana

In recent times, Ghana like most other sub-Saharan countries has made significant strides in terms of its economic growth. In its 2015 report, the World Bank notes that Ghana has witnessed steady and robust growth over the past two decades, with unprecedented average growth rates of nearly 8% between 2006 and 2012 (Paci and Pavelesku, 2015). Also, the country's tremendous economic growth has been accompanied with significant poverty reduction. For instance, national statistics show that the proportion of the population living in poverty dropped by almost half, from 51.7 percent to 28.5 percent between 1991/92 and 2005/06, indicating that every year on average, the share of the population was thus reduced by about 1.5 percentage points (World Bank, 2007, p.20). Similarly, it is revealed that in absolute terms, the number of Ghanaians considered undernourished went down from 4.2 million to 1.2 million during the same period (van Berkum et al., 2011, p.17).

Ecker et al. (2013) add that in the past two decades, Ghana has also achieved a significant reduction in the prevalence of child undernutrition and that 1 percent growth between 1993 and 2008 was associated with a reduction in the prevalence of underweight children of 0.29 percentage points.

Yet poverty and food insecurity remains major problems in rural areas and in particular the northern parts of the country. As at 2012, poverty rate was estimated at 38.2 percent in rural areas and 10.4 percent in urban areas (Molini and Paci, 2015). An IFAD rural poverty report (IFAD, 2012) for Ghana noted that although the overall poverty levels in Ghana have decreased over the last two decades, however, northern Ghana has seen only marginal decreases compared to the rest of the south. Poverty rates in the north are two to three times Ghana national average. Also, it is estimated also that 8.4 percent of Ghanaians currently is extremely poor and have insufficient resources to meet their basic nutritional needs and the incidence of extreme poverty is highest in rural Savannah areas where it stands at 27.3 per cent (GSS, 2014, p.13). According to the 2009 Ghana Comprehensive Food Security & Vulnerability Analysis (CFSVA), nearly 60 per cent of households in the three northern regions are classified to be in the poorest quintile (based on the wealth index).

Similarly, the World Bank (2011) report notes that:

Should current economic and demographic trends continue, poverty could be largely eliminated in the South [of Ghana] by 2030, while still affecting two-fifths of the population in the North (against approximately three-fifths today). Additionally, the likely oil-related boom in services and cities (mostly located in the South), in addition to climate change, threaten to further widen this gap. Thus, any poverty alleviation strategy for Ghana must continue to ensure the reduction in poverty in Northern Ghana at centre stage, and acknowledge its specific causes in the design of possible interventions (World Bank, 2011 p.23),

Furthermore, the most recent Ghana Living Standard Survey (GLSS 6) conducted in 2012/2013, reveals that the incidence of poverty in Ghana varies significantly across the ten (10) regions. Whilst half of the ten regions (Greater Accra, Eastern, Ashanti, and

Western, Central had their rates of poverty incidence lower than the national average of 24.2 percent, the remaining half had rates higher than the national average. Greater Accra is the least poor region and the Upper West the poorest overall (Table 1) (GSS, 2014). Though most regions show a reduction in poverty incidence since 2005/06, the pattern of poverty by region remains the same. It further shows that more than four out of every ten persons are poor in Upper East or (44.4 percent), increasing to one in every two in the Northern region or 50.4 percent and seven out of every ten in Upper West or 70.7(Ghana Statistical Service[GSS], 2014, p.13).

Table 2: National Poverty Incidence by Region (%)

| Regions | 2005/2006 | 2012/2013 |
|-----------------------|------------------|------------------|
| Northern Ghana | | |
| Upper West | 89.1 | 72.9 |
| Upper East | 70.7 | 44.4 |
| Northern | 55.7 | 50.4 |
| Southern Ghana | | |
| Central | 23.4 | 18.8 |
| Ashanti | 24.0 | 14.8 |
| Western | 22.9 | 20.9 |
| Volta | 37.3 | 33.8 |
| Eastern | 17.8 | 21.7 |
| Brong Ahafo | 34.0 | 27.9 |
| Greater Accra | 13.5 | 5.6 |
| Nat'l Average | 31.9 | 24.2 |

Source: Ghana Statistical Service(GSS), (2014).

In terms of food security and nutrition, for instance, in 2007 UNDP noted that although Ghana has seen considerable improvements in its food security condition over

recent years, agricultural production remains insufficient and, due to this, it continues to struggle to enhance food security (United Nations Development Programme[UNDP], Ghana Human Development Report 2007, p.45). Also, although food insecurity has decreased considerably over the last decade, undernourishment still exist in certain areas particularly in the northern regions (Agble et al., 2009, p.3).

According to GSS (2007), about 18.2 per cent of Ghanaians who fall below the extreme poverty line are considered chronically food insecure, also about 10.3percent who fall above the extreme poverty but are classified as poor, are vulnerable to food insecurity depending on the vagaries of the weather (GSS 2007 cited in MOFA, 2010, p.19).

Furthermore, the Comprehensive Food Security and Vulnerability Analysis for Ghana by World Food Programme in 2009 disclosed that 5 percent of the population (about 1.2 million people in Ghana) have very limited access to sufficient and nutritious food for an active and healthy life and are defined as food insecure (WFP, 2009). Further, about 2 million people are vulnerable to becoming food insecure or facing food insecurity. Again, this aggregate figure hides or masks the true nature and extent of the problem across different regions of the country. Table 3 below highlights the regional disparities in food security and vulnerability to food insecurity indicators by region.

Table 3: The Food insecurity and Vulnerability by Region (2009)

| Regions | Population | Food Insecure | Vulnerbility to Food Insecurity |
|-----------------------|-------------------|----------------------|--|
| Northern Ghana | | | |

| | | | |
|-----------------------|-------------------|-----------|-----------|
| Upper East | 984.000 | 15% | 20% |
| Upper West | 625.000 | 34% | 13% |
| Northern | 2.166.000 | 10% | 17% |
| Southern Ghana | | | |
| Western | 2.424.000 | 1% | 6% |
| Central | 1.802.000 | 3% | 5% |
| Greater Accra | 4.057.000 | 1% | 3% |
| Ashanti | 4.589.000 | 7% | 10% |
| Brong Ahafo | 2.165.000 | 3% | 11% |
| Volta | 1.822.000 | 3% | 7% |
| Eastern | 2.268.000 | 4% | 8% |
| Nat'l Average | 22.901.000 | 5% | 9% |

Source: Population numbers taken from Ghana 2000 census.
Numbers for food insecurity and vulnerability were taken from World Food Programme (WFP), 2009

The table illustrates that food insecurity is concentrated in the poorest regions of the country and the ones (the three northern regions) most prone to adverse weather conditions and have been disproportionately affected by high food prices. Therefore, the very poor are mostly food crop farmers who make up about 48 percent of the population in the Northern Savannah zone, have the lowest average per capita incomes below the national poverty threshold of GHc1.47 per capita per day (WFP, 2009, p.14).

Food Insecurity Among Smallholder Farmers

Smallholder farmers in Ghana like in other parts of Sub-saharan Africa are key contributors in terms of agricultural sector production. The FAO (2006) reports that smallholder farmers especially women generate about 80 percent of the food consumed in Ghana (Garcia et al., 2006). Also, the WFP revealed that smallholder famers rather

large scale commercial farmers constitute the mainstay of the local economy in northern Ghana, as they represent 62 percent of farming households in the region (WFP, 2012).

Yet, the most recent Ghana Living Standards Survey (GSS6) 2012/2013 revealed that smallholder farmers are the poorest population group in Ghana and also contribute most to poverty in Ghana (Ghana Statistical Service 2014). IFAD (2012) reports that small-scale farmers in Ghana have limited access to the assets that would facilitate a shift from low-productivity subsistence farming to commercial agriculture. It further added that major challenges that confront smallholder farmers include lack of infrastructure and insufficient access to equipment such as agricultural inputs and technology, and facilities for storing, and marketing products.

Food insecurity in Northern Ghana

Based on the 2010 census the populations in each of the three northern regions were Northern region 2,479, 461, Upper East region 1, 046, 545, and Upper West region 702,110 (GSS, 2014). In 2012, the World Food Programme (WFP) found 16 percent of all households or more than 680,000 people were either severely or moderately food insecure. In terms of regional distribution, the Upper East Region has the highest percentage of its households that are either severely or moderately food insecure at 28 percent, in the Upper West Region it is 16 percent and Northern Region 10 percent (WFP, 2012, p.19). A recent UNICEF Multiple Indicator Cluster Survey (MICS) revealed that the prevalence of chronic undernutrition in northern Ghana has increased from 32 percent in 2008 to 37 percent in 2011 (UNICEF and GHS cited in Saaka and Osman, 2013, p.1).

The three northern regions entirely lie within the Guinea and Sudan savannah ecological zones of Ghana. Like many other parts of Ghana, agriculture is the mainstay of the rural economy of northern Ghana and which majority of the people depend on for their livelihood. In 2003, the MoFA noted that the percentage of staple crops (maize, rice, sorghum, millet, cassava, and yam) in total arable crop area was 54 percent in Upper East, 61 percent in Northern Region and 63 percent in Upper West Region. However, even though much land is put into staple crop cultivation, most of what is grown is consumed at home.

Also, the Ghana Living Standards Surveys (GLSS) in 1998/9 GLSS4 found that in Northern Region, 92 percent of rural households cultivated maize, but only 27 percent sold any. Also, in the Upper West and Upper East, over 90 percent of all households grown millet or sorghum, but only 8 percent sold any (Ghana Statistical Services, 2000 cited in Alhassan and Poulton, 2009, p.29).

Underlying Factors of Food Insecurity in Northern Ghana

Factors that contribute to food insecurity in northern Ghana are many and have been widely documented by numerous studies. For instance, seasonal and unstable domestic production, inflation, low household incomes, and high level persistent unemployment are among the major factors driving food insecurity in Ghana especially in northern Ghana (Nyanteng and Asuming-Brempong 2003). As observed by Fall (2012) the main factors that cause food insecurity in Northern Ghana include erratic and unreliable rainfall, recurrent drought and floods, high post-harvest losses, inadequate storage facilities, environmental degradation, and high population growth. According to

CARE International (2007) food and livelihood security in the northern regions of Ghana are threatened by desertification, deforestation and inequitable access to and control over resources such as fertile land in the northern regions (CARE, 2009, p.3). The UNDP noted in 2010 that “despite continued investments poverty is concentrated in the Northern regions of Ghana due to remaining pockets of conflicts, inadequate socio-economic infrastructure and vulnerability to natural disasters” (UNDP, 2010, p.16).

Furthermore, IFAD (2012) reported that smallholder agriculture in the northern regions of Ghana is characterized by subsistence production and faced inadequate access to productive assets, information and skills, low adoption of modern technologies and mechanization, small farm sizes, and limited access to water for agriculture. Armah et al. (2011, p. 293) add that some of the critical issues faced by northern farmers which constrain their ability to achieve food security include inaccessible roads and annual wildfires, inadequate irrigation facilities, erratic rainfall pattern, low soil fertility, and difficulty in accessing credit. According to the 2007 FASDEP II, poor infrastructure and inadequate access to market are the two major factors hampering food security in Northern Ghana (MOFA, 2007).

A study by WFP (2009) documented limited household resources, poor agricultural production, ineffective transport system, natural hazards such as drought and floods, inadequate access to credit and markets, and widespread poverty as main the contributors to food insecurity in northern Ghana. Other studies such as Mulugeta

and Hundie (2009) and World Bank (2008) in Nata *et al.* (2012, p.2) attribute ineffective production techniques, inadequate extension access, and limited input supplies as causes of food insecurity. The following section looks at some of the key factors that produce and sustain food insecurity in rural northern Ghana.

Poverty

Poverty is noted to cause or perpetuate food insecurity in northern Ghana (WFP, 2009). According to UNDP's Ghana Human Development Report 2007 "these three regions harbour the poorest of the poor" (Harsch 2008, p.1). Similarly, a 2009 report by CARE International (Daze, 2009) noted that the three northern regions of Ghana are the poorest, and have poverty rates that are significantly higher than those in the south. Further, a 2012 WFP study of food security in northern Ghana found that even though 88 percent households in the Northern regions depend on crop cultivation as one of their primary sources of income generation, other structural challenges such as lack of irrigation, the increasing trend of female headed households, limited size of land, inadequate rural employment opportunities, migration of rural labour to the south, poor fertility of soils and fluctuation in food prices (due to decrease in food production and the continuing increase in inflation) have continued to trap the populations in chronic food insecurity(ibid).

Chamberlin *et al.* (2007) indicate that the higher levels of rural poverty in the northern regions are likely exacerbated by factors linked to fewer opportunities for intensifying and commercializing agriculture, such as poorer access to input and output markets as well as credit and extension services. According to the government's

poverty reduction strategy paper (GPRS II), the principal causes for poverty among farming households in northern Ghana are low productivity and poorly functioning markets for agricultural outputs (GoG, 2005).

Low agricultural production

Low agricultural production has also been considered as the main cause of persistently high levels of poverty and food insecurity in Northern Ghana (WFP; 2012; IFAD, 2012; Barnett and Srivastava, 2017). Antwi-Agyei et al. (2012) report that majority of the people in northern Ghana practice subsistence agriculture and are largely dependent on rainfall which makes them more vulnerable to climate variability. Also, smallholder farmers lack adequate access to credit facilities to procure inputs, as a result, they continue to cultivate and plant small land parcels less than 1 hectare with family labour and using rudimentary tools such as the hand hoe (SendGhana,2010). A survey in 2009 revealed that only 20 percent of farmers regularly used fertilizers on their crops (WFP, 2009). Also, due to income poverty most food producers are unable to acquire the needed storage and drying facilities that would allow them to store their produce to sell at favorable times of the year (i.e. during the lean or non-harvest when prices are high) (WFP, 2009).

Lack of irrigation is a further constraint on agricultural production and food security. Like many other parts of the country, irrigation systems are generally limited in northern Ghana. For instance, it is estimated that less than two percent of the total cultivatable area in Ghana is irrigated (Namara et al., 2011, p.1). According to a study

by the SEND Foundation (2008), only 19.7 percent of smallholder farmers have access to public irrigation schemes and 60 percent of these farmers engage on non-mechanised small irrigation techniques. Also, the study found that disparities exist across the regions in access to irrigation with farmers in the Greater Accra region having greater access than their counterparts in the three regions of the North (ibid). The lack of irrigation development is attributed to factors such as erratic and insufficient rainfall, poor credit services, high initial and operational cost, low level technology among smallholder farmers, and insufficient government support and extension services (Namara et al., 2011). Added to the above, pre and post harvest food losses also hinder food availability. For instance, due to lack of knowledge in post-harvest management, especially of perishable produce, it is estimated that post-harvest losses range from about 20 percent-50 percent for fruits, vegetables, roots and tubers, and about 20 percent-30 percent for cereals and legumes (MoFA, 2007).

Inadequate rural infrastructure

Poor rural infrastructure, including roads is also hinder agriculture production and food availability in northern Ghana (MoFA, 2007). Most feeder roads in northern Ghana linking farms to villages are very poor compelling smallholder farmers especially women farmers to carry their farm produce on their heads to markets (MoFA 2007). Also, the poor condition of many rural roads and the ineffectiveness of vehicles plying these roads contribute greatly to high transport charges. Many of the roads are not motorable or useable during the rainy season and this compels many

farmers to sell their produce before the rains start. For example, a 2005 report noted that, only 55.8 percent of rural communities in Northern Ghana have access to roads throughout the year, as compared to 81.2 percent for the urban areas (GSS 2005 in Dejene, 2008, p.20). Similarly, an IFAD (2007) report reveals that out of 1323 km of feeder roads network tarred in the country, only 3 percent are accounted for by the three northern regions.

In addition to inadequate road infrastructure, limited access to electricity in many parts of rural areas has also significantly contributed to low development and investment in processing facilities implying that most agricultural value chains are not well developed at the processing stage in most producing areas. This further contributes to spoilage of perishable agricultural commodities such as fruits and vegetables which may be in excess during the rainy season and in low supply during the dry seasons. For instance, the 2012 CFSVA shows that while the national average for access to electricity is 64 percent, the corresponding rates for the three northern regions is about 24, 31 and 35 percent in the Upper East, Upper West and Northern Regions respectively (WFP, 2012).

Population growth

Population growth is another factor that further compound northern Ghana's food security situation. According to Environmental Protection Agency (EPA, 2002), increased population pressure in the northern regions has resulted in a reduction in the fallow periods of the shifting cultivation and the cultivation of marginal lands to meet

the ever growing population food demands. Similarly, Dinko (2017) noted that high population growth continues to be a major challenge to ensuring food security in northern Ghana. Also, Van der Geest et al. (2010, p.117) observe that despite heavy out-migration, the population of northern Ghana continues to increase.

According to the World Bank report although between 1998 and 2005 northern Ghana also witnessed a decline in poverty rates, the absolute number of the poor in the three regions increased due to rapid population growth (Molini and Paci, 2015).

Tawiah (1995) added that rapid population growth in northern Ghana and the high concentration of infrastructural facilities and employment opportunities in the urban areas have contributed to heavy rural-urban migration resulting in shortage of agricultural labour force and low productivity in the rural areas.

Inadequate access to land

Constraints to access to land are noted to inhibit smallholder farmers especially women's ability to effectively participate in agricultural production in northern Ghana (Vigneri and Holmes, 2009; Apusiga, 2010). As Send Ghana (2014) noted that one of the most significant gender-based constraints that women smallholder farmers face in northern Ghana is access to, control over and ownership of agricultural land.

According to Mbote (2005), women traditionally do not own land in northern Ghana. The best rights women could have are the usufruct rights, which hinge on the nature of the relationship between them and their male counterparts either as husbands, brothers, fathers or such other male relative. Mbote (2005) further noted that such land rights could be truncated at any time as it is dependent on the whims of such male

benefactors. A 1998 study conducted in the Upper East Region by IFAD noted that women limited land access affects the crops they can grow. They do not plant tree crops on their lands since they could easily lose their lands and all the profits accruing thereof. IFAD also emphasises that it restricts women's access to credit from formal sources as they do not have title to land and as such cannot use it as collateral.

High food prices

Ghana has also not been immune to the global financial crisis which witnessed food prices soaring from 2007 in several parts of the world. For instance, prices for rice, maize and other cereals increased in Ghana by 20 to 30 percent between the last few months of 2007 and the early part of 2008 (Wodon et al, 2008). As a result of food price increases; 18 percent of the population whose income is less than the costs of the minimum food basket have become more vulnerable and less resilient to food insecurity (WFP, 2009, p.11). The 2009 CFSVA further points out the severity of the impact of high food prices on households' food security status. The study discovered that while rural households in the Southern Savannah witness a decrease of 3.4 percent both in grain and root consumption, the consumption decline in the Northern Savannah rises to 9.4 percent (WFP, 2009).

Furthermore, according to the WFP's Northern Ghana Food Security and Nutrition Monitoring System (June 2011) report, about 13 per cent of the population in the Northern Region is highly food insecure while the incidence of high food insecurity in the Upper East and Upper West Regions is 31.3percent and 26.7percent respectively

(WFP, 2011). The report also notes that the continued increase in the prices of cereal grains, coupled with low purchasing power of households will limit food purchases to income available through occasional sale of small animals, gathering and sale of fuel wood and on-farm labour wages which are generally not sufficient to guarantee households adequate access to food. Also, the Rapid Market Assessment carried in October 2012 in Tamale, Bolgatanga, and Wa in Northern Ghana found that the causes of declined food access are closely linked to poverty and high food prices, rather than overall food availability (WFP, 2012, p.31).

Lack of employment in rural areas

Lack of rural development and employment opportunities has also been identified as a primary factor aggravating food insecurity in the northern regions. For example, an FAO report on *Gender Inequalities in Rural Employment in Ghana* noted that:

Despite Ghana's great progress in economic growth and poverty reduction in recent years an important share of rural men and women in the country still lack decent work opportunities. The Northern part of the country and rural areas in general are of major concern. Rural women in particular face greater difficulties in transforming their labour into more productive employment activities and their paid work into higher and more secure incomes. Similarly, the young rural population faces barriers in joining the labour market and migration is often a livelihood strategy (FAO, 2012, p.5).

Similarly, WFP (2012) reported that

economic opportunities other than agriculture are scant in northern Ghana. The potential for agricultural trade is also limited throughout Ghana by poor market infrastructure, such as roads, storage centres and selling space. As a result, farmers' ability to produce, sell and store marketable surpluses is hindered as is households' ability to buy it, so food access is impeded (WFP, 2012, p.34).

According to Awumbila and Ardayfio-Schandorf (2008), due to lack of job opportunities and poor living conditions, the northern part of Ghana has remained a major source of unskilled labour for the more urbanised south. As of 2007 for example, 97 percent of female head-porters in Accra were migrants from the three northern regions (ibid). Further, in a 2012 study conducted by the WFP, the search for employment opportunities was the most cited reason, for people of the three northern regions migrating to urban towns in the south.

Poor health

Poor health also contributes to food insecurity in northern Ghana. Despite the considerable investment in the provision of health facilities, substantial proportions of the populations, especially in rural areas and deprived communities still have limited access to health services (Ministry of Health [MOH], 2007, p.25). Some factors that impede access of rural population to health services include low capital investment in health facilities, poor feeder road systems in rural areas, poor location of facilities, lack of technical skills in some specialised areas and lack of communication facilities (GOG, 2005). It is estimated that about 8.36 million people living in 47,000 rural settlements especially in the northern parts of Ghana do not have access to the basic health facilities which are largely concentrated in urban areas (EPA, 2002, p.99).

UNICEF (1990) found that whereas the entire population of the Accra Metropolitan Area had access to health facilities, only 11 percent of the population in the northern regions had access compared with 77 percent in the Central Region and

26percent in the Western Region (UNICEF, 1990 cited in EPA, 2002, p. 99). Also, a 2009 WFP study found that rural women were more likely to give birth at home than urban women (56.8 percent compared to 17.8 percent). Across regions, it was found that home births were more prevalent in the three northern regions with over 70percent of women in Northern region, and between 50 and 60 percent of women in Upper East and Upper West compared to than less 20 percent of women for the rest of the country (WFP, 2009, p.106). A recent USAID notes that majority of the population in the savannah zone still suffer from a high disease burden, particularly malaria, and high incidences of maternal and infant mortality (USAID, 2012). As of 1998, the infant mortality rate was estimated to be 70 per 100 live births in Northern Ghana, compared to 41 per 1000 live births in Greater Accra (Horton 2001 cited inTarr,2014, p.6).

Land degradation

Land degradation is one of the biggest challenges facing northern Ghana, caused largely by the greater land needs associated with population growth and inappropriate farming practices such as traditional bush-fallow system and removal of vegetative cover particularly through deforestation and overgrazing (World Bank, 2006, p.108). “Land degradation in Northern Ghana has rendered large tracts of croplands which were once fertile currently unproductive as such contributing to depleting income and food sources” (Adanu et al., 2013, p.67). It is also estimated that about 69 percent of the land area of Ghana is prone to severe erosion particularly in the northern savanna areas (MOFA, 2007, p.6). As of 2000, an estimated 33.6 percent of the land area in the northern savanna zone had been degraded and projected to increase to 65.5percent by

2050 (Stanturf *et al.*, 2011, p.8). Further, Laube *et al.* (2011) found that climate change and land degradation have led to decreasing yields and crop failures in Northern Ghana and have caused further impoverishment of Ghana's poorest region.

Conflict

Conflict has also been identified as among the major factors contributing to food insecurity in northern Ghana. For instance, Brukum (2001) reported that "since 1980 the Northern Region of Ghana has witnessed intermittent eruptions of inter-ethnic conflicts and: the tolls in terms of lives lost, injuries to residents, destruction of property including loss of critical social and economic infrastructure that the conflicts have caused have been staggering" (Brukum 2001 cited in Mbowura 2014, p.5). Similarly, Kusimi *et al.* (2006) note that over the last two decades, conflicts have been the leading cause of forced migrations and internal displacement of a vast number people from Northern Ghana to more urbanised centres in Southern Ghana.

Further, Tonah (2005, p.102) argued that "chieftaincy disputes and ethnic conflicts in the Northern part of the country [Ghana] are partly to blame for the widespread poverty and the poor state of infrastructure in the area" (Tonah 2005, p. 102 cited in Mbowura 2014, p.109). Between 2007 and 2008, it is estimated that conflicts in the three northern regions claimed the lives of 25 individuals, with 57 injured and about 448 properties destroyed (Kendie, *et al.*, 2014 cited in Osei-Kufuo 2016, p.3).

Natural disasters

Climatic events such as droughts, and floods are a major cause for household food insecurity in northern Ghana. “In Northern Ghana, food availability is affected through reduced production due to crop losses from floods and droughts as well as crop and livestock diseases triggered by climate change (Akudugu and Alhassan, 2012, p.86). In recent years, floods and droughts have greatly affected food production and resulted in increased vulnerability in the northern regions (MoFA, 2007).

In 2007, for example, excessive rainfall leading to flooding in the Upper East, Upper West and Northern regions and parts of Western Region affected almost 330,000 people and killed 56 persons (Kankam-Yeboah et al., 2010). Again, in 2010 floods rendered about 25,112 people homeless, resulted in loss of cereals and food items amounted to 257,076 metric tonnes in the northern regions (Arthur et al., 2011, p.10). According to NADMO cited in Asare-Kyei (2015), within a period of three years (2010 to 2012), floods have affected about 702,204 people in northern Ghana.

Conclusion

This chapter identified the main structure of Ghana’s agricultural production, underlining the differences that exist between the northern and southern regions of the country. It also demonstrated the variation that exists in poverty levels and in persistent problems in food security between the two regions in spite of the country’s national growth in GDP. Finally, it ends with showing several causes for these differences.

This thesis argues however that there is another fundamental problem that contributes to these variations, that of problems with policies aimed at agricultural development in place particularly since 1980s. It has been argued by others that inefficient or inappropriate policies have constituted a serious constraint on agricultural development and food security in northern Ghana. Akudugu and Alhassan (2012) note that in addition to climatic factors, population growth, reduced investments in agriculture, and unfavourable policy environments have contributed to food insecurity in northern Ghana. Many other scholars argue that the immediate post-colonial policies adopted by government favored natural resource and mineral exploitation for development and as such, placed less emphasis on northern Ghana's agricultural growth and food security (Nyantakyi-Frimpong and Bezner-Kerr, 2015; Ahmed et al., 2016).

According to Oduro (2001), the low provision of infrastructure and other basic utilities by government in the northern regions can partly explain the persistence of poverty and food insecurity and the difficulty in making significant declines in the incidence of poverty despite the several years of continuous positive economic growth. Furthermore, Curtis (2013) noted that one of the major reasons accountable for increasing inequality between the north and south is that:

much growth has been generated by export agriculture to which northern Ghana makes little contribution. Farmers in the three northern regions are overwhelmingly food crop farmers and not cocoa or other cash crop producers. Structural adjustment programmes in the 1990s and government policy since then placed more emphasis on cash crop exports than on food staples (Curtis, 2013, p.20).

We will demonstrate in the following chapter that the national agricultural policies put in place since 1980s up to date have failed to enhance food security in Ghana, particularly the northern regions because they were targeted more at achieving higher productivity within the large scale commercial sector to the neglect of the smallholder agriculture.

Chapter 3: National Agriculture Policies

Ghana's Agricultural Policy: Historical Overview

Like in most other Sub-Saharan African countries, Ghana's agricultural policies and development has a long history dating back to 1874. A major turn-around in agricultural policy occurred from 2002 when FASDEP was developed. Since then, successive agriculture policies implemented adapts to sector-wide approach. This section examines the various agricultural strategies and policies that have been developed and implemented from the colonial period to date. This will help explain the trend of agricultural policies in Ghana and to also locate the thesis argument.

The Colonial or Pre-Independence Period (Up to 1957)

The Gold Coast (Present-day Ghana) became a British colony in 1874 after the British government abolished the African Company of Merchants in 1821 and took charge of lands privately held along the coast (Miller, Vandome & McBrewster, 2009).

In Ghana agricultural policies during colonial rule prioritized the needs of the emerging urban elites, expatriate food importers and colonial authorities who emphasised the production of export crops. The passing of the poll tax law at the beginning of the twentieth century forced the peasant farmers and fishermen to go into export crop production, mainly cocoa (Seini, 2002, p.415). Agricultural policy paid less attention to non- commercial production or the development of staple food crops for domestic consumption (Brook et al., 2007). The focus of policy was to make the then Gold Coast a source of industrial raw materials for the manufacturing industries, thus making the Ghana an economy which exported cash crops and imported food

crops to meet domestic needs (Asuming-Brempong, 2003). The emphasis on export production encouraged infrastructural developments that resulted in urbanisation, expansion of the mining industries and also encouraged internal and external market expansion and promoted commodity production (Seini, 2002). The colonial economy led to the regionalization of the Ghanaian economy, where the labour in the southern regions produced raw materials for export (cocoa, minerals, timber and other agricultural products), and the northern regions supplied migrant labour to the South (Songsore, 2003)

It was not until the 1950s that the colonial government took greater interest in the economic development of the North to address food deficits in urban areas (Seini, 2002). In the latter years of colonial rule, agricultural policies were influenced by the desire of the government to generate opportunities for urban, unemployed youth agitating for independence and as a way to convince the populations that industrialisation was the most prudent way to bring about economic independence to the country. Hence, a first Five-Year Development Plan (1951-1956) encouraged large-scale farming, with the government claiming the progressive improvements in the traditional subsistence system of production were inadequate to meet the needs of an expanding economy (Seini, 2002). An Agricultural Development Corporation (ADC) was subsequently established to enhance agricultural development (ibid, 2002).

Early independence period (1957- 1980)

The post-independence period was characterised by state participation in agriculture. The government continued to develop large scale farming through mechanised agriculture (Seini, 2002). In the second Five-Year Development Plan (1959-64), the government expanded the role of the Agricultural Development Corporation (ADC) to establish estate agriculture. ADC's efforts were not successful as a result of financial constraints and it was subsequently dissolved in 1962. However, state intervention in agricultural development continued. The government focused its policy attention on co-operative agriculture, with less emphasis and investments in small scale farming (Seini, 2002).

The United Ghana Farmers' Council (UGFC) was established to replace the colonial government's Agricultural Extension Service, which was aimed at assisting smallholder producers. The UGFC was to organize small scale farmers for mechanised agriculture through cooperative efforts. A key agricultural development policies during this era was the formation of development boards to offer advice, and incentives to farmers growing crops such as cotton, cocoa, kenaf and grains (Seini, 2002). It was not until the end of the 1970s that small-scale development programmes were initiated to provide opportunities for small-scale farmers. One such project was the World Bank scheme aimed at increasing the income of rural small farmers of the Upper Regions of Ghana – the Upper Regional Agricultural Development Programme (URADEP). The Ghanaian-German agricultural development project was also set instituted to support

small farmers to raise food production through effective distribution of inputs and research into the development of new technologies. The Volta Regional Agricultural Development programme (VORADEP), the Northern Regional Rural Integrated Project (NORRIP) and the Managed Inputs Delivery and Agricultural Services (MIDAS) were all set in the early 1980s geared towards increasing agricultural production especially of smallholder producers by providing agricultural inputs and services on time and on regular basis (Seini, 2002, p.420).

Economic reform and adjustment period (1983–92)

Major shocks interacted in the early 1980s to cause the near collapse of the Ghanaian economy. A severe drought accompanied by widespread bush fires reduced agricultural output, and Nigeria expelled over one million Ghanaian workers (Seini, 2002). In response to this crisis, the military government led by Rawlings sought for sought from the World Bank and the IMF in order to salvage the economy (Nyantakye-Frimpong, 2013).

The Economic Reform Program (ERP) was launched in 1983 followed by several Structural Adjustment Programs(SAPs), starting in 1986 (Ahwoi, 2010). The reforms put emphasis on the free market system, whereby market prices were given a central role in the allocation of resources. The ERPs, included trade policy and exchange rate reforms. Emphasis was put on increasing and diversifying agricultural exports with the promotion of non-traditional exports. SAPs included deregulation of the commodity and service markets, reduced domestic price distortion and liberalization of imports (Ahwoi, 2010).

In the context of agriculture, this period was largely dominated by the view that liberalization of inputs and output markets will contribute to greater availability of inputs and higher prices to farmers than the loss making parastatals had offered previously (Oduro and Kwadwo, 2003, p.230-231). During the structural adjustment period, the government privatised state farms, removed price controls and gradually reduced subsidies on inputs such as fertilizer. In 1990 the government removed the guaranteed minimum price paid to farmers for selected food crops (especially maize and rice) and in 1992 abolished input subsidies altogether (Brooks et al. 2007). Following the commencement of the ERP in 1983, the ASRP (1987-90) was the first integrated intervention in the agricultural sector. The main objectives were to strengthen the institutional capacity and services of the Ministry of Food and Agriculture, and to support policy reforms involving the privatization of certain services (including fertilizer marketing, tractor services, and veterinary drugs) (Asuming-Brempong, 2003, p.17).

The medium term agricultural development programme (MTADP) was designed for the period 1991-2000 to further build on the improvements attained through the ASRP. Oduro and Kwadzo, (2006) noted that MTADP indicated the re-thinking of the direction and bias in agricultural strategy and policy-making. The objective was to define policy and institutional reforms, and a complementary set of investments needed to attain a higher growth rate in the agriculture sector. The programmes set out in the MTADP aimed at a sustained annual growth in agricultural GDP of about 4 percent. The policy reforms focused on the incentive framework for agricultural

production, trade and processing. The MTADP proposed an increase in private participation in agricultural marketing, a more market based pricing system, and the liberalization of supply of seed, fertilizer and other agricultural inputs. The freeing of trade was expected to reduce marketing costs, increase producer prices and enhance investment in processing. On the other hand, the privatization of input was to improve the reliability of supply through competition (Asuming-Brempong, 2003, p.17-18).

Furthermore, several projects were implemented under the MTADP which include the Agricultural Diversification Project (ADP) (1991-1999), National Agricultural Research Project (NARP) (1991-99), National Agricultural Extension Project (1992-2000), Agricultural Sector Adjustment Credit (1992-99), and the Agricultural Sector Investment Project (1994-2000) (Asuming-Brempong, 2003, p.17).

The Agricultural Diversification Project (ADP, 1991-1999) was aimed at the expansion of non-cocoa tree crops (particularly oil palm, coffee and rubber) and horticultural crops (mainly pineapples). The objective was to reduce the country's reliance on cocoa (Asuming-Brempong, 2003). The scheme provides training and technical support to farmers and institutions that produce the "target crops" (Asuming-Brempong, 2003, p.17).

The National Agricultural Research Project ((NARP, 1991-1999) was intended to promote agricultural growth through improvements crops and livestock production and through diversification of farming systems. Emphasis was put on technology improvement through the development of the research system (FAO, 2002).

The Agricultural Sector Investment Project (ASIP, 1994-2000) aimed to increase the allocation of technical and financial for rural development. It also supported agro processing industry, market infrastructure development including storage facilities, maintenance of feeder roads, and provision of water in rural areas (Asuming-Brempong, 2003).

The Smallholder Credit, Input Supply and Marketing Project (SCIMP) was implemented during 1990 and 1999 in the Ashanti, Brong-Ahafo and Volta Regions of Ghana. The SCIMP provided farmers and food traders with short-term loans. It also helped construct farming dams and hand-dug wells (agriculture and household use) and farm access roads through financial support to the Department of Feeder Roads (DFR) (Asuming-Brempong, 2003).

It is clear from the discussion that since independence up to the 1980s, government agricultural policy has largely focused on the promotion of the large scale commercial agricultural sector towards increasing productivity in terms of cash crops to meet the foreign needs of the country. This has resulted in less attention paid to the smallholder agricultural sector production. Considering the Agricultural Diversification Project as a case of example, the government overall goal as stated was to expand the production of cash crops such as coffee, and oil palm, clearly depicting that support went to the large scale commercial farmers in the southern regions where these crops are produced but not the smallholder food crops farmers in the north. More so, as Seini (2002) noted “agricultural policies in the early years of independence were designed to deal primarily with urban unemployment and not to deal with rural poverty, and to avoid

dependence on the small scale independent private farmers whose political philosophy was inconsistent with that of the ruling party” (Seini, 2002, p.418).

Ghana’s Current Agricultural Policies (since 2000)

In 2002, government through the Ministry of Food and Agriculture (MOFA) introduced a ‘Food and Agriculture Sector Development Policy’ (FASDEP I) as an overall policy for the agriculture sector. FASDEP I, which was implemented in 2003, represents the first major coherent and sector wide agriculture policy in the post-independence era. On the back of the increased economic recession and financial crisis, the country opted to adopt the Highly Indebted Poor Countries (HIPC) program of the World Bank and IMF. The country’s Interim Poverty Reduction Strategy Paper (I-PRSP) subsequently became the Growth and Poverty Reduction Strategy (GPRS) (2003–2005). This resulted in the formulation of a broad national development framework, the Ghana Poverty Reduction Strategy (GPRS I) from 2002 to 2004. This pro-poor economic policy framework was predicated on the role of agriculture.

FASDEP I was developed to provide the framework that stimulate the national vision of moving Ghana to become an agro–industrial economy by the year 2010(Government of Ghana, 2005). It was meant to provide a framework for modernising the agricultural sector and making the sector a catalyst for rural transformation and poverty reduction in line with the goal set for the sector in the Ghana Poverty Reduction Strategy (GPRS I) (MoFA 2007). The objectives of FASDEP I included to enhance food security; to facilitate production of agricultural

raw material for industry; to facilitate production of agricultural commodities for export; to facilitate effective and efficient input supply and distribution systems; facilitate effective and efficient output processing and marketing systems; and to facilitate and coordinate the implementation and monitoring of sector policies and programmes (GoG, 2005). FASDEP I objectives broadly operated under Pillar 2 of the GPRS I: modernisation of agriculture based on rural development. This pillar focused specifically on reforming the land tenure system; assisting the private sector to increase food production through facilitating extension, research and financial services, and irrigation facilities; encouraging cash crop production; and supporting the private sector to add value to traditional crops (GoG, 2005). The main difference between FASDEP I and previous policies was that the former adopted a sector wide approach to agricultural development, in contrast with the discrete project approach engaged in the past (Brooks, Croppenstedt, and Aggrey-Fynn 2007, p.14).

However, the FASDEP I was faced with several challenges. A poverty and social impact analysis (PSIA) of FASDEP I conducted in 2004, concluded that the policies would not be able to achieve the desired impact for instance poverty reduction because it is incapable of addressing the needs of different stakeholders in the agricultural sector, particularly the very poor (smallholder farmers) (Brook et al., 2007). This led to the revision of FASDEP I. The FASDEP II as the revised version of first policy (FASDEP I) was formulated in 2007 and is also in line with the policy objectives of Ghana's Poverty Reduction Strategy (GPRS II) as well as sub-regional (ECOWAP), regional (Comprehensive Africa Agriculture Development Programme (CAADP of

NEPAD) and global (MDGs) development programmes. The objectives include, food security and emergency preparedness, improved growth in incomes, increased competitiveness and enhanced integration into domestic and international markets, sustainable management of resources such as land and the environment, improved science and technology applied in food and agricultural development and improved institutional coordination (MoFA, 2007, p.22).

Food and Agriculture Sector Development Policy (FASDEP II, 2007-2015)

In response to the weakness identified, FASDEP I was revised in 2007 with substantial participation of various stakeholders (Kolavalli et al. 2010). This led to the second phase of agricultural policy strategy FASDEP II. FASDEP II which commenced in 2007, had six main objectives of which include food security and emergency preparedness; increased growth in incomes; increased competitiveness and enhanced integration into domestic and international markets; sustainable management of land and the environment; science and technology for food and agricultural development; and institutional co-ordination (MoFA, 2007).

The overarching objectives of FASDEP II were to ensure modernised agriculture, a structurally transformed economy, food security, employment and reduced poverty (MoFA, 2007). These distinguish the second phase of the agricultural policy from the previous phase. The major difference between FASDEP I and II has do with the approach that led to the formulation of the policy. While FASDEP I had little participation of stakeholders that contribute to the agricultural sector, FASDEP II engaged increased and diverse number of stakeholders, including farmers, researchers,

district assemblies, input dealers, traders, and non-governmental organisations (NGOs) through regional consultations (Kolavalli et al. 2010). This discussion, confirms the argument of this thesis that agricultural policies have failed to enhance food security among smallholder farmers because less attention was paid to them. The policy objective of modernising agriculture was overly ambitious and failed to take into consideration that production systems and technology are mainly traditional, based on intercropping and use of simple implements and hand tools, with little use of modern inputs such as improved varieties and fertilizers and other agrochemicals (Kolavalli et al. 2010, p.4).

Further situating the current agricultural policies within the context of the Oxfam model, these policies have failed to address the key underlying factors confronting smallholder farmers in northern Ghana such as lack of adequate storage facilities, lack of secured land tenure, poor extension services, lack of credit and capital, and inadequate infrastructure such as transportation, and markets etc. Due to the fact that attention has been paid to promoting large scale commercial sector production rather than the smallholder agriculture sector. For instance, a recent study by the World Food Programme(WFP) found that although 88 percent of households in the northern Ghana depend on crop cultivation as one of their primary sources of income generation, other structural challenges such as lack of irrigation, limited size of land, inadequate rural employment opportunities, migration of rural labour to the south, poor fertility of soils and fluctuation in food prices (due to decrease in food production

and the continuing increase in inflation) have continued to trap the populations in chronic food insecurity(WFP, 2012).

Regional Agricultural Policies and Programmes in Northern Ghana

This section will provide a brief overview of government attempts to address food insecurity in the northern regions of the country.

Even though widely considered to be the agricultural zone of the country, the North has persistently remained the poorest part of the country (GSS, 2000). in a bid to therefore to address persistent poverty and food insecurity in the three northern regions, government has instituted a number of regional agricultural development projects and programmes specifically geared towards food security and poverty reduction in northern Ghana.

Upper East Region Land Conservation and Smallholder Rehabilitation Project (LACOSREP)

This project started in 1992. The primary objectives assigned to the project included to promote food production and income of smallholder farmers, strengthen formal and informal groups and empower women with credit for income generating activities. The first phase this scheme ended in 1999(FAO, 2002). The second phase LACOSREP II was implemented between 1998–2006. The main objectives among others were included to further develop irrigation in the region; raise productivity through farmer training and demonstrations of new technologies towards increased crops and livestock productivity, and strengthen the capacity of government institutions that provide technical and social services at the district and subdistrict

levels; and to construct rural infrastructure to promote agricultural growth (World Bank/ FAO/ IFAD, 2009, p.247).

Upper West Agricultural Development Project (UWADEP), (1996-2004)

The Upper West Agricultural Development Project (UWADEP), a seven-year programme was launched in 1996, with the broad objective to improve food security and income of smallholders in the region(UWR) (MoFA, 2005). The specific objectives included to boost food production and household incomes; strengthen community organisations; improve the economic status of women; (4) develop dry season gardening; and (5) enhance access to markets through the construction of feeder roads(ibid). The UWADEP) was designed along five main components, which include (i) Agricultural development; (ii) Water Resources development;(iii) Rural Roads component; (iv) Rural credit scheme; and, (v) Community and women development. The Agricultural development component provide support to private growers for seed production to enhance farmers' access to improved seeds, extension activities, and on-farm adaptive research. Water Resources development component, in turn promote more efficient use of water resources and the expansion of irrigated dry season farming through the rehabilitation of small earth dams and the construction of dugouts and hand –dug wells. UWADEP Rural Roads component focuses on rehabilitation of the existing network of feeder roads, and re-gravelling works. Rural credit scheme component provide support to beneficiary farmers in agricultural production and income generating activities. The last component, community and

women development focuses on gender sensitization and reinforcement of community and women groups.

Northern Rural Growth Programme (NRGP)

The Northern Rural Growth Programme introduced in 2009 is a program being financed by the African Development Bank (AfDB), the International Fund for Agricultural Development (IFAD), and the government. This programme aimed at the development of agricultural value chains and increased productivity. The NRGP was to contribute to sustainable development, poverty reduction and food security among rural households in Northern Ghana (MOFA/IFAD/AfDB, 2012). The target group of the programme are smallholder producers living in rural areas who draw their livelihood from agricultural production and existing and potential small-scale entrepreneurs and business associations who provide services to rural households(ibid).

The NRGP consists of four key components: i) commodity chain development; (ii) rural infrastructure development; (iii) access to rural finance; and (iv) programme coordination. The *Commodity Chain Development* component focuses on establishing market-oriented producers organizations and establishes a commodity development fund. NRGP's *Rural Infrastructure Development component*, in turn, focuses on small-scale irrigation development including public owned water distribution and drainage systems, the establishment of water users associations, and promotes improved rainwater productivity. It also addresses marketing infrastructure development, including rural feeder roads and group transport facilities. *Access to*

Rural Finance focuses on institutional strengthening of Participating Financial Institutions (PFIs) and interdisciplinary bodies in the programme. This includes capacity building for loan officers in the area of credit approval and logistical support including motorbikes and bicycles for community agents. The last component, *Programme Coordination*, addresses capacity building for NRGP's implementation agents, including MOFA (African Development Fund[ADF], 2007; MoFA et al., 2012).

Chapter four: Conclusions and Recommendations

Conclusions

This thesis argues that government agricultural policies have failed to have a positive impact on food insecurity among smallholder farmers in northern Ghana because, as demonstrated above, national agricultural policies have been more geared towards the large scale commercial agricultural sector at the expense of the smallholder agriculture sector. More so, since the 1980s agricultural interventions emphasized increasing the production of export crops which are mainly grown in the South to meet foreign exchange needs of the country. As a matter of fact, while the poverty rates among smallholder food crop farmers declined from 68 percent in 1991-92 to 46 percent by 2005/06 in the three northern regions, for export crop producers the decline was much more significant, from 64 percent in 1991-2 to 24 percent in 2005-6 (Al-Hassan and Poulton, 2009, p.1).

The inability of national agricultural policies and programmes to tackle poverty and address food insecurity is captured in FASDEP II. It outlines the following conclusion from a poverty and social impact assessment analysis (PSIA) of FASDEP I as reasons for which the agricultural policies would not address poverty and food insecurity. a) Improper targeting of the poor small scale farmers within an environment where the drivers of agricultural modernization, access to credit and technology, good infrastructure and markets were very limited; b) Weak problem analysis which did not adequately reflect client perspectives of their needs and

priorities; and c) Improper guidelines on how MOFA could obtain contributions from other Ministries, Departments and Agencies that fell outside the domain of MOFA.

Recommendations

The government needs to focus more on assisting and empowering smallholder farmers since they are the dominant producers in this part of the country, by way of policy measures to that will ensure access of farmers to land and other farm inputs.

There is the need for government to invest in creating off farm employment opportunities such as the development of local agro-allied industries. These measures will help to increase income generating activities and further check the rural-urban drift that has contributed to the withdraw of agricultural labour over the years from the northern regions. More so, government should as well channel more resources into the development of infrastructural facilities that would help enhance the development and productivity in these regions. Equally important is the need to adopt measures that address gender inequalities because of the key role women smallholder farmers play in agricultural production in Northern.

Government engagement in the development of information communication technologies (ICT) which can enhance smallholders access to extension services, financial services and market information is also one surest way to promote agricultural production and food security among smallholder farmers in northern Ghana.

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