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Agriculture and Food Security in Ghana

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Abstract

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Keywords

Ghana, Agriculture, Food production, Food security, Post-harvest

Disciplines

Agriculture | Bioresource and Agricultural Engineering | Food Security

Comments

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AGRICULTURE AND FOOD SECURITY IN GHANA

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Introduction

Ghana in no doubt can be considered as an agriculture-dependent nation, although mechanized agriculture is almost non-existent. Ghana, a middle-income West African country, has unpredictable weather conditions, although agriculture is heavily dependent on rain (weather). In recent times, adoption of modern agricultural technologies and cultural practices such as irrigation, fertilizer application, use of resistant varieties, good planting and harvesting times, among others. The adoption of these modern practices are hindered by financial constraints as these farmers are smallholder farmers with limited financial support. Moreover, commercial banks, private partners and insurance companies are not ready to support them adopt and apply these technologies. Challenges in the agriculture sector are not only limited to cultivation, there are serious concerns when it comes to postharvest storage and marketing. The major cause of food insecurity in Ghana is attributable to the greater percentage of postharvest losses. The objective of this paper was to review literature on general agricultural trends and challenges in Ghana. Food insecurity, and some policy plans to reduce food insecurity were also highlighted.

Food and Agriculture in Ghana

MoFA (2007) reported that agriculture was dominantly practiced on smallholder level using simple technology in producing about 80% of the total agricultural output in Ghana. According to the report, about 2.74 million households own a farm or are keeping livestock. In reference to the 2000 census, 50.6% (4.2 million people) of the labor force, were directly involved in agriculture. From the census, about 90% of most farm lands were not up to 2 ha in size and mostly oil palm, rubber, coconut, maize, rice and pineapples farms are very large. Generally, agriculture in Ghana is rainfall dependent, although in 1999 an estimated 6,000 farm enterprises across Ghana used some means of irrigation. Reports indicate that, the average farm land irrigated in 2002 was around 11,000 ha with an estimated potential area for irrigation of 500,000 ha. Generally, 51% of Ghana's cereal needs are locally produced, 60% of fish requirements are locally produced, 50% of meat are locally produced, and less than 30% of agro-based industries' raw materials are locally produced (Figure 1). The economy of Ghana is controlled by the agriculture sector, accounting for 23% of the national Gross Domestic Product (GDP) in 2012 (FAO & FAPDA, 2015). Agriculture is still the largest share contributor to the GDP. Since 2000, there has been a total of between 35.8% and 37% contribution to the GDP from agriculture. Agricultural growth

increased from around 4% in 2000 to 6% in 2005, with the greatest growth contribution from the cocoa industry. According to the report by FFG (2014), there has been consistency in growth and poverty reduction over the past 2 decades making Ghana a successful African country. The annual GDP has grown between 4% and 8% over the past decade, and this yearly growth is perceived to exist for years to come. Poverty reduction, especially in the southern Ghana has been driven by agricultural growth, and agriculture sector employs the largest number of people, and these people are predominantly smallholder farmers that produce food and cash crops. Over the past 10 years, Ghana's overall poverty reduction rate has been from 52% to 28%. Despite Ghana's progress in agriculture, Ghana still imports about 70% and 15% respectively of rice and maize consumed. The rise in incomes and increasing urban growth rate is expected to increase the demand of both crops.

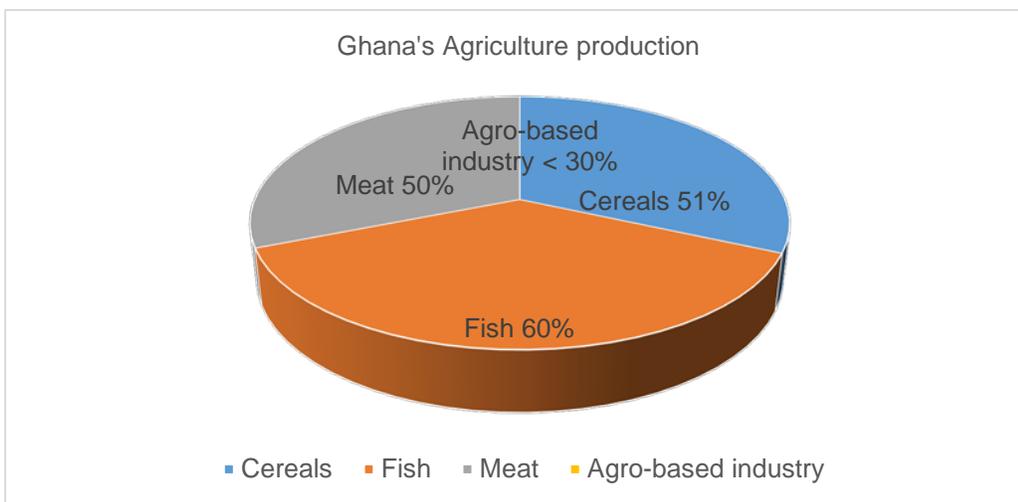


Figure 1. Ghana's Agriculture production (%)

Agricultural Sector Constraints

There are aggregated factors hindering agricultural growth, and these factors are discouraging farmers from investing and producing. Some of these factors are limited access to changes in technology and existence of poor infrastructure. Diversity in Ghana's agro-ecology has compounded these challenges. Ghana's Ministry of Food and Agriculture in 2007 listed some constraints in the agriculture sector.

- *Human resource and managerial skills*

The agricultural sector having over 60% of the population including farmers, traders and processors constitute the largest sector. Agriculture is also a critical sector for women; about half (48.7%) of the total female population

is self-employed in agriculture, with the majority being engaged in food production. Although the current population of farmers are aging, the youth are not willing to engage in agriculture. The literates are not much engaged in agriculture, and therefore dissemination of information, recent methods, regulations and policies are paramount (MoFA, 2007).

- *Natural resource management*

Agriculture in Ghana is based on natural resources, comprising of production of crops and livestock, wild life hunting, rain-dependent agriculture, and fish from natural water bodies. Sustainability of natural resources are threatened by some practices such as burning of bush, and improper use of modern technologies such as irrigation and agro-chemicals. It is reported that, 69% of Ghana's total land surface at a cost of 2% of GDP is considered prone to severe erosion (MoFA, 2007).

- *Technology development and dissemination*

Low productivity in agriculture can be due to poor conditions of soils, irregular pattern of rainfall, disease and pest outbreaks, lack of access to good varieties of planting materials and seeds. Lack of access to good market incentives and relevant inputs, limited access to processing technologies, transports, handling and storing of commodities of crop, fish, and livestock are challenging factors. There is also limited knowledge in post-harvest management, most especially of perishable produce, resulting in high post-harvest losses of about 20%-50% for fruits, vegetables, roots and tubers, and about 20%-30% for cereals and legumes. The women have been using traditional processing technologies, which have low yields, strenuous, and not be of good product quality (MoFA, 2007).

- *Infrastructure*

Movement of agricultural commodities is a challenge as road and transport infrastructures are inadequate and poor. This constraint particularly has retarded agriculture growth and development in some high potential areas. Most feeder roads connecting farms to villages are very poor compelling farmers to carry their produce on their heads from farms to markets. Poor road infrastructure also has a toll on cost of important inputs such as fertilizer. Most markets have limited infrastructures such as suitable commodity specific storage facilities, toilet facility, good and hygienic environment, accessibility by car or truck and limited space (MoFA, 2007).

- *Market access*

There is also limited marketing skills, limited processing and product development for good utilization of raw

materials and mostly weak commodity value chains. The increasing consciousness of food safety and phytosanitary in international trade require a growing challenge to market access, especially for high value agricultural export commodities. Majority of local consumers and producers have a low consciousness about food safety and this has caused farmers, processors and traders not to follow good practices in agriculture and manufacturing (MoFA, 2007).

- *Food insecurity*

Ghana faces eminent food insecurity as the average yield has not been growing. In almost two decades the importation of commercial food, and food aid have reached about 4.7% of food needs. Food production and availability per year is dependent on rainfall during and between growing seasons, and the level of production. This creates food insecurity at household levels, making community areas poor and chronically distressed. Ghana is generally food secure, but there are pockets of food insecurity existing in all regions as a result of acute limited resources and limited alternative livelihood chances for most people to meet their dietary needs. Adverse weather conditions, and bush fires have had severe impact on smallholder farm enterprises (MoFA, 2007).

- *Irrigation development and management*

Dry lands less than 1% are using irrigation, and improper management of the present systems further limits their effectiveness. There are public irrigation systems that operate at approximately one third of their designed capacity. This has caused low yield and low cropping intensity because of lack of good operation and maintenance of irrigation facilities. Formal irrigation development is highly supply-driven and its over-reliance has limited the areas under irrigation (MoFA, 2007).

Food security indicators

Food security was agreed to exist when: "All people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 1996). Achieving food security requires that the aggregate availability of physical supplies of food is sufficient, that households have adequate access to those food supplies through their own production, through the market or through other sources, and that the utilization of those food supplies is appropriate to meet the specific dietary needs of individuals.

Food security is a complex phenomenon that exhibits itself in numerous physical conditions resulting from

multiple causes. The World Food Summit of 1996 established four dimensions of food security: availability, access, stability and utilization.

- *Food Availability*

FAO (2014) indicated that one of the key determining factors of food security depends on the availability of food and its constituents. There could be availability of dietary energy but not diversified enough to provide the macro and micro nutrients essential for a healthy life. Information on food available for consumption is mainly obtained at an aggregate level through food balance sheets, which give data on the quantity of energy and protein available on each day per person at the national level. Dietary energy supply could be a good indicator of food availability, but other indicators, such as food adequacy, are needed to provide information on the gap between food supply and average energy requirements. Between 1990 and 2011, the level of energy supply obtained from cereals, roots and tubers slightly dropped in West Africa.

- *Food accessibility*

Hunger will continue to be an issue as long as the available food is not adequately distributed among the population. All people should have access to food physically and economically. Access to food is basically determined by incomes ability of households and individuals to access social support, and prices of food. Beyond economic affordability, physical access to food is enhanced by availability of infrastructure, such as rail lines and tarred roads. As regards roads, in 2005-10, Ghana among other seven other nations had the highest road density (14 to 110 km per 100 square km of land area). Aggregate FAO projections show that, even with decreasing consumption, global agricultural production still needs to increase by 60% (and nearly 80% in developing countries) in the next four decades in order to cope with a 39% increase in population and increase global dietary energy supply beyond 3000 kcal per person per day. This translates into the additional production of almost one billion tons of cereals annually by 2050. In 2009 Ghana, among eight other African nations, had the highest food supply of primary food crops, which ranged between 2730 and 3349 kcal/cap/day.

- *Food utilization*

“Utilization is a measure of a population’s ability to obtain sufficient nutritional intake and nutrition absorption during a given period” (Hauck & Youkhana, 2008). Diversified poor meal is often associated with deficiency in micronutrient and it is a strong indicator for child stunting and maternal nutritional status (Ruel, 2003; Savy *et al.*, 2005; Ruel *et al.*, 2010). Anemia caused by iron deficiency is known to be very common among individuals with meals low in animal protein and high in rice or in whole wheat (Banerjee & Duflo, 2011). Progress in food access and availability is not always associated with progress in food usage. Food handling, preparation and storage

influence food utilization.

- *Food stability*

This refers to stability of availability, access, and usage at all times with no risks. The main risks which might have great effects on availability, access, and usage are extreme weather conditions, energy scarcity, economic and social disruption, and poor functioning global markets. Stability emphasizes having mechanisms in place in assuring the availability, access, and usage which is likely to change with risks. To address such risks, production systems need to be promoted and supported, ensuring sustainable investment in rural development, and improving market governance. The common factors associated with the stability parameters are focused on the availability and access parameters. Over the past 50 years, the world's crop production has increased three times. Growth in crop production corresponds to increase in crop yields in the arable land on which crops are planted which together with increases in crop intensification, such as higher multiple cropping, or reducing fallow periods, can lead to an expansion in the harvested area (Pangaribowo *et al.*, 2013).

Food Security Situation in Ghana

A recent report prepared by MoFA (2015) discussed that about 5 percent of Ghana's population (1.2 million people) are food insecure. The World Food Programme in 2009 reported that approximately 453,000 people in Ghana are food insecure with 34% in the Upper West region, 15% in the Upper East, and 10% in the Northern region (WFP, 2009). About 2 million people are vulnerable to become food insecure nation-wide, which means any unexpected natural or man-made shock will greatly affect the pattern of their food consumption. People vulnerable to food insecurity totaling 1.5 million live in the rural and urban areas of the following seven regions of Ghana: Brong-Ahafo 11%, Ashanti 10%, Eastern 8%, Volta region 7% etc. The remaining 0.5 million people are found in the three Northern regions.

Months of inadequate household food provisioning, which has been defined as the time between stock depletion and the next harvest (Bilinsky & Swindale, 2007). Food insecurity in areas that are subsistence-oriented is measured using months of inadequate household food provisioning. Areas that are subsistence-oriented produce primarily for home consumption, and only a few amount of the produce are sold in the market. Quaye (2008) reported that most farmer households experience significant level of food insecurity lasting from 3 to 7 months. Upper East Region was the worst affected because it experienced 6 months period of food shortage (Nyanteng & Asuming-Brempong, 2003).

Strategic plans to reduce food insecurity in Ghana

To reduce food and nutrition insecurity, Ghana's Ministry of Food and Agriculture outlined the following in 2012 (MoFA, 2012):

- i. Modernizing agriculture by improving productivity, mechanization, irrigation and water management.
- ii. Maintaining national strategic stocks such as food storage, distribution and improved nutrition.
- iii. Preventing and managing of emergencies and expanding national strategic stocks through effective early warning systems.
- iv. Enhancing peoples' knowledge of the importance of optimum nutrition by improving advocacy on nutrition education and food fortification.
- v. Reducing post-harvest losses, and improving storage and distribution systems through capacity building of relevant stakeholders. This include proper methods for harvesting, primary processing, grading, storing, and ensuring good linkages between producers and markets.
- vi. Ensuring food production systems (macro and micro nutrients and food fortification) as an essential aspect of food processing.
- vii. Reducing risks resulting from natural disasters and disease/pests outbreaks and ensuring adequate food stocks availability.

Ghana's food security achievements

Ghana economic growth has been resilient over the past three decades with an average yearly GDP growth of 4.5% since 1983, and appreciably 14% in 2011 (IFAD, 2012). This was attributed to stable political environment and market reforms, the rise in prices of gold and cocoa, and favorable environment for investments (World Bank *et al.*, 2011).

Ghana has experienced high per capita economic growth rates, averaging 3.3% annually, mostly due to agriculture. At the same time, per capita food production increased by 55% between 1990-92, and 2008-10. Large part of Ghana's population are experiencing the appreciable GDP growth, averaging 5% per year since

2001, as extreme poverty declined from 51.7% in 1991 to 28.5% in 2006 (FAO/IFAD/WFP, 2015). In just 15 years, about 5 million people have had improved situations and have moved from poverty level due to broad sharing of the rapid economic growth.

Growth in agriculture is more rapid than growth in the non-agriculture sectors in recent years. This growth expands by an average annual rate of 5.5%, compared to 5.2% for the whole economy. However, growth in agriculture heavily relies on rainfall patterns and land expansion. Ghana has made impressive progress towards the international hunger targets, and is among countries close to reaching the international hunger targets. The more populous countries in Africa that have reached the MDG 1c hunger target, and WFP goal of halving the number of hungry people by 2015, includes Ghana, Angola, Cameroon, Mali, and Gabon (FAO/IFAD/WFP, 2015).

Conclusion

The growth in agriculture has resulted in reduction in poverty, and the agriculture sector which is dominated by smallholder farmers has the largest employees in Ghana. Although the agriculture sector is faced with some challenges, these challenges are surmountable and the ministry has put in place urgent measures in tackling the challenges. Implementation of strategic plans to curtail food insecurity in Ghana is impressively underway to help manage the food insecurity situation. Ghana has made progress towards the international hunger targets, and was committed in reducing to half the number of hungry people by 2015.

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