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Learning Objective: Summarize the food and agricultural landscape in Ghana and give a history of food insecurity in the country. What brought about malnutrition?

Ghana's Long-Standing Problems with Food Insecurity Are Exacerbated by Poverty and by Global Market Forces Impacting Food Prices That Can Harm the Poorest Ghanaians

***ABSTRACT** As a mostly agricultural nation, Ghana still faces challenges providing adequate access to nutritious food for all of its citizens. These problems date back to the pre-colonial era. Food insecurity and undernutrition are more pronounced in the country's north and among younger children. Both are targeted in policies by outside donors and the federal government designed to improve food delivery, agricultural production, and the nutritional needs of the nation's poorest residents. Poverty has been identified as a major contributing factor to those most at risk of or experiencing food insecurity. The government's policies involve close partnerships with foreign donors to modernize the nation's agricultural sector and reduce its exposure to international trade shocks, like the 2007-08 spikes in global prices for two imported cereal crops widely consumed by Ghanaians: wheat and rice.¹ Foreign assistance to combat food insecurity is designed to complement this national strategy, but also to promote the business interests of nations like the United States.*

Introduction: In Ghana, as in many nations, the food its people grow and eat define who they are, how they earn their incomes, and the quality of their overall health. Agriculture forms the bedrock of the national economy. It accounts for a third of all GDP and employs half the workforce.² Farming is highly decentralized, with 9 in 10 farms smaller than 2 hectares in size.³ Despite a proliferation of food products that can be grown in the country, from grains to root and tuber crops like cassava to fresh fruits and vegetables, 1.2 million Ghanaians (5% of the population) experience food insecurity, defined as having very limited access to sufficient and nutritious food to live an active and healthy lifestyle.⁴ What's more, undernutrition in Ghana, as in all of sub-Saharan Africa, is a critical problem. The WHO notes that undernutrition—the outcome of insufficient food intake and repeated infectious diseases—is the largest contributor to the global burden of diseases.⁵ While Ghana has made progress reducing the number of underweight children from 25% to 14% between 1998 and 2008, of all children under 59 months of age, 30% percent are undernourished, one of the highest rates in all of Africa.^{2,5} Another 78% of Ghana's children are anemic.⁵ In Ghana, children in the poorest 60% of households were more than twice as likely to be stunted than their peers in the richest top quintile of households.⁵

A History of Food Insecurity: Amid this setting, our Ministry of Health employee Paul finds himself immersed in evaluating the efficacy of the GAIN fortification program, to fortify vegetable oils and wheat flour with vitamins, and wondering about the effectiveness of related

food programs to address the nation's nutrition problems of anemia and undernourishment. Paul is also correct in his thinking that the problems concerning nutrition and its complex relation to politics and foreign intervention are not new nor necessarily tied to priorities favoring only Ghana's national interests.

Food insecurity is not uncommon in Ghana. Famine was widespread in colonial West Africa from 1900 to 1980, as a result of undernourishment and malnutrition. As early as 1920, the British colonial administration in Ghana recorded these conditions. One economist, in his nutritional economic study on the 1930-57 period, calls the nutritional deficiencies experienced in Ghana's northern provinces "hidden violence" by the British rulers.⁶ Northern Ghanaians experienced dietary deficiencies in animal proteins, vegetables, vitamins, and essential minerals, and as a result the regions were more prone to endemic and epidemic diseases. Poverty in the north played a key role.⁶

Today, poverty negatively impacts the nutritional well being of millions of Ghanaians. In the country's northern regions, where poverty rates are twice those in the south, rates for persons experiencing wasting—when a child's weight-for-height is less than 2 standard deviations from the mean—or being underweight are linked to food insecurity. The widespread chronic malnutrition in the northern provinces is also linked to household poverty levels, disease burden (for malaria, HIV/AIDS, intestinal worms, diarrheal diseases), poor sanitation, and feeding practices for infants and children.² The 3 northern regions, also the poorest, recorded higher proportions of food insecurity for their populations: Upper West, 34%; Upper East, 15%; Northern, 10%. By contrast, only 2% of Accra's population experienced food insecurity according to a 2008 national survey of food security in Ghana.⁴ These at-risk areas also are most prone to climactic conditions impacting food production such as floods and droughts. The 2008 survey also found that an additional 2 million people are "vulnerable to become food insecure."⁴ Proportionally, the rural-urban divide is pronounced among those currently deemed food insecure—19% of all rural residents, 10% among urban dwellers.⁴

Food Production and Consumption: Ghana's ecological diversity influences, but does not fully explain, the nation's nutritional problems. Food consumption in Ghana, and thus nutrition, is largely dependent on local agro-ecological conditions (see appendix 1 for a map of the ecological regions). The country's two savannah regions (in the north and south) grow sorghum and millet, producing 60% of both crops nationally. Rice, another widely consumed grain, is

grown in these areas. But the country only produces 35% of the rice the nation consumes.¹ Another widely consumed grain, maize, is mostly grown in the southern and middle belt of the country's forest zone, and production for maize is met almost entirely local farmers.¹ Wheat, also a widely consumed grain, is 100% imported (see appendix 2 for import dependence food staples). The commonly eaten root and tuber crops (cassava, yam, cocoyam) are grown throughout the country. Other major crop food grown include plantains, yams, g'nuts, cowpeas, and soybeans.³

One dietary study of rural Ghanaian women, using on a survey sample outside Accra, found they ate a mixture of grains, starch as the primary staple dish, fish for protein, vegetables (onions, tomatoes), and palm fruits.⁷ The 2008 study found that the diet provided adequate calories (nearly 2,000 kcal/day), but those interviewed did not consume an adequate amount of B vitamins (thiamin, riboflavin, niacin), iron, or calcium.⁷ Among children ages 6-23 months, less than half received food from 4 or more food groups, and half were fed the minimum number of meals to maintain proper nutrition.² It is worth noting that the food staples of a typical Ghanaian have not changed significantly since independence in 1957, with the exception of imported wheat. A survey of commonly eaten food in Ghana from 1961 noted the most commonly eaten staple foods were maize, rice, cocoyams, manioc, and plantains.⁸

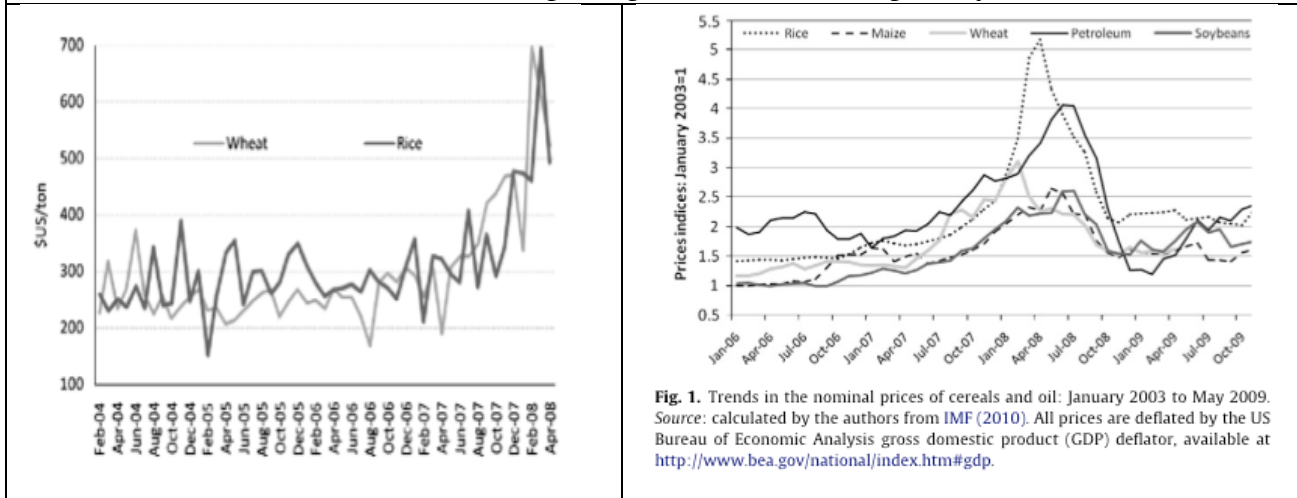
Crops for consumption today account for two-thirds of all Ghana's agricultural GDP. However, Ghana's primary export commodity, cocoa, only makes up 8% of the sector's GDP.³ According to the International Cocoa Organization, Ghana's cocoa exports generate \$1 billion in foreign exchange annually and support 800,000 farming families. Ghana is the world's third largest cocoa-producing nation.⁹ No reference researched for this paper indicates the allocation of lands for cocoa production was linked to food insecurity impacting 1.2 million Ghanaians.

Peer-reviewed journals and studies examining Ghana's food production and food insecurity nearly unanimously agree that poverty underlies the nation's food insecurity and is closely tied to malnutrition issues such as wasting and stunting.^{2,4,5} The World Health Organization (WHO), in defining food security, identifies what WHO calls its 3 pillars: food availability, food access, and food use. However, the WHO declines to identify any single responsible factor threatening those pillars. Instead, the health body suggests there is a "great deal of debate" about those factors, such as food distribution issues, production difficulties, and globalization, which all lead to food insecurity in impoverished rural communities.¹⁰

The comprehensive food security study conducted in Ghana in 2008, in response to the 2007-2008 global food crisis that impacted food commodity prices in Ghana described in our case, sought to identify underlying causes. Overall it found that the most food-insecure residents were small crop farmers, particularly those in the northern savannah regions, who represent a quarter of the nation and who live beneath the poverty threshold.⁴ According to the survey, several key factors were identified.⁴

- High food prices, particularly during the food crisis in 2007-08, impacted food prices on staples, even locally produced maize; 80% of the population is “highly vulnerable” to such market fluctuations.
- Natural hazards, notably floods and droughts, put poorer households in impoverished northern Ghana more at risk, destroying food-growing land at key growing times.
- Lack of education was very closely tied to food insecurity, with half of all food-insecure households being headed by persons with no schooling.
- The dependency on agriculture as the main source of income impacts many small “holder farmers” and agro-pastoralists.
- Poverty was closely linked to food insecurity, with 47% of all food-insecure households classified as the poorest of the nation’s poor.

Impact of wheat and rice price developments globally (right) and in Ghana (left) during the global food crisis of 2007 and 2008—factors impacting northern Ghana negatively.¹¹



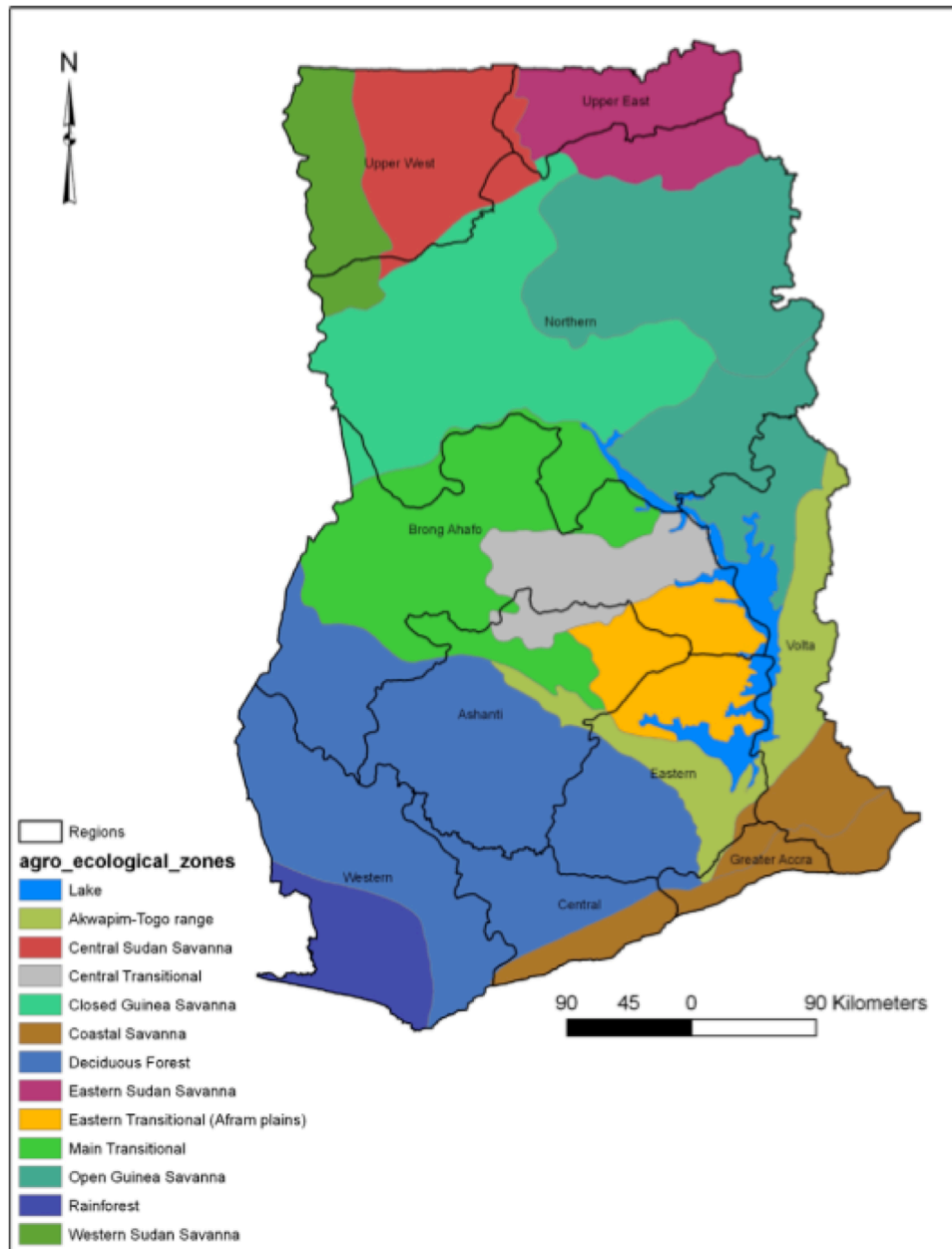
Global Factors and Policies: In Ghana, grain and root/tuber consumption totals about a quarter of an average Ghanaians total food spending. However, across the country, consumption of foods varies. In the north, consumption of grain is higher than consumption of roots and tubers, and poorer households spend more of their total income on staples (60% of total food spending.) These two factors—more grain consumption, more total spending on food—left northern Ghanaians more vulnerable to the rising world food prices during the 2007-08 food

crisis.¹ As a result of these conditions that led to the high numbers of Ghanaians food insecure and vulnerable to food insecurity, Ghana's Ministry of Food & Agriculture identifies sustainable food security as a national policy objective in its agriculture plan for 2011-15.² To support this goal, the ministry seeks to integrate competition into production for local and international markets, modernize agriculture production, and boost incomes for farmers.¹²

As seen in the case, numerous foreign programs are stepping in to address some of the nation's largest nutrition problems, such as iron deficiency among Ghanaian mothers and children. For its part, USAID's reported food policy strategy through 2015 seeks to support the production of local staple crops such as rice in the north, boost fish farming, and aid programs that improve the nutritional status for those most undernourished—women and kids.² Requested Ghana funding exclusively for agricultural assistance, and not health programs, by USAID for 2011 comes to \$42 million.¹³ A key piece of USAID's strategy, dubbed "value chain competitiveness," will focus on the country's adoption of more technology, higher yielding seeds and fertilizers, and modern food storage and distribution systems. The effort in Ghana, however, represents part of a larger \$3.5 billion U.S. government effort, called Feed the Future. The initiative seeks to combat global hunger and promote food security by supporting local initiatives with NGOs and the private sector. Feed the Future's web site says the program is a "channel through which local, national[,], and multinational corporations of any size, both U.S. and foreign owned, can propose innovative public-private partnerships that achieve their core business goals," which also help USAID achieve its foreign assistance priorities. Whether these private sector actors will benefit Ghanaians, particularly those most impacted by food insecurity, remains to be seen.

Conclusion: Paul is right to suspect the intentions of foreign partners—nations, NGOS, private-public partnerships, and multilateral agencies. However, their role will be crucial to help Ghana tackle long-standing issues of poor nutrition, particularly in the country's poorest regions, where poverty is leaving many at risk to food insecurity. Improving rice production appears to be a promising direction, for instance. The government's strategies to reduce poverty, modernize agriculture, and support programs to address acute undernutrition in children appear to be sound policy approaches given the findings of the 2008 survey on food security. While the British colonial era and its policies date to more than half a century earlier, Ghanaians mindful of their history likely may remain distrustful of foreign actors and partnerships seeking to promote their own agendas and business interest that impact the well-being of the most vulnerable Ghanaians.

Appendix 1: Ghana's agro-ecological zones and administrative regions (source Cudjoe C, Clemens B, Xinshe D)¹



Appendix 2: Source of production and consumption of Ghana's major food staples (source Cudjoe C, Clemens B, Xinshe D)¹

Import dependence, production, consumption, and trade for major staples (average of 2004–2006). *Source:* Authors' calculations based on data obtained from the Trade Statistics Division of the Ghana Statistical Service (GSS).

Food items	Domestic production	Exports	Imports	Domestic consumption	% Import dependence
Maize	1335	0	6	1340	0.43
Rice	266	0	492	759	65
Wheat	0	0	324	323	100
Millet	152	0	0	152	0.01
Sorghum	294	0	0	294	0.00
Yam	4229	12	0	4218	0.00
Cassava	11,062	1	0	11,060	0.00

Note: Production, consumption, and trade are in 1000 metric tons. Data are simple averages.

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