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Claremont McKenna College

Ghana Dier: An Analysis of How Availability and Access
Impact Food Security in Ghana



submitted to Professor Jennifer Taw

by Aishat Jimoh

for

Senior Thesis

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Abstract

This paper examines the different causes of food insecurity, the solutions for them, and how Ghana sits on the scale of global food insecurity. Ghana is located in Africa, where food insecurity is the highest in the world, so it would be reasonable to expect food insecurity to be high in Ghana, too. In comparison to its neighboring countries, Ghana has the best food security, standing at number three in sub-Saharan Africa. This paper uses data to examine how Ghana has been this successful. Foundational frameworks in Ghanaian history developed the southern urban parts of Ghana, improving food security in the area. The north did not get the same support, and thus food insecurity is high in this region. The paper examines some of the work the Ghanaian government and non-governmental programs have done to improve the state of food security and concludes with suggestions for how the Ghanaian government can further improve food insecurity. If the government does not address rising inflation, food insecurity will increase.

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Introduction

There are many systems in play that have undermined development in Africa. Food insecurity, which is directly a product of and contributor to poverty, is one of the biggest ones. Food insecurity can lead to other costly societal effects like poor health outcomes, educational opportunities, social structures, and economic infrastructure. Combating food insecurity also helps resolve these other negative circumstances. This paper will examine the costs of food insecurity, best practices for addressing it, and how - and how successfully - Ghana's government and society are mitigating it. While this paper will identify poverty as the overarching issue, it will argue that the implications of food insecurity work hand in hand with poverty, to cause these broader harms.

The paper's focus is on Ghana. It addresses the puzzle of Ghana's apparent successes - incomplete, but admirable - in combating food insecurity. Most of the world's impoverished people live in Africa, and Ghana itself faces multiple challenges, including rural to urban migration, rising prices, and a history of exploitation. Despite this, evidence indicates that the country has been more successful than is generally appreciated in fighting food insecurity and its related ills.

The thesis will proceed with a review of the literature on food insecurity and the best practices that have emerged to combat it. Next is a case study of Ghana: trends in access to, and availability of, food; the conditions underlying both; and the actors and institutions contributing to both the problems and the solutions. The paper will conclude with recommendations for further study.

What is food insecurity?

According to the Food and Agricultural Organization (FAO) of the United Nations, “A person is food insecure when they lack regular access to enough safe and nutritious food for normal growth and development and an active and healthy life. This may be due to unavailability of food and/or lack of resources to obtain food.”¹ The UN estimates that “one in three people in the world did not have access to adequate food in 2020. That’s an increase of almost 320 million people in just one year.”² The history, current social and political dynamics, and relations within states are complex, and it is important to unpack these complexities to better understand why food insecurity currently exists and why the extent of it is so vast. The FAO claims that there are drivers of availability and drivers of access to food insecurity. The figure below shows what those factors are.

Figure 1.1. Food Insecurity Drivers

Drivers of Availability	← → Drivers of Access
Drivers likely to impact availability include:	Drivers likely to impact accessibility include:
<ul style="list-style-type: none"> • Land tenure/management • Percentage of irrigated land • Ownership • Water • Climate / Weather • Natural phenomena • Migration • Sanctions • Infestations • Diminished workforce • Variation in global food production due to global interdependencies 	<ul style="list-style-type: none"> • Physical barriers • Currency fluctuation • Infrastructure • Credit default • Urbanization • Migration • Manufacturing stoppages/relocation • Sanctions • Contamination • Disease • Territorial disputes • Corruption, crime, and conflict

Sources: EC-FAO Food Security Programme, “An Introduction to the Basic Concepts of Food Security”; International Federation of Red Cross and Red Crescent Societies (IFRC), *How to conduct a food security assessment: A step-by-step guide for National Societies in Africa*, 2nd ed. (Geneva: IFRC, 2006), 8, http://www.ifrc.org/Global/Publications/disasters/food_security/fs-assessment.pdf.

¹ FAO. (n.d.). *Hunger*. Food and Agriculture Organization of the United Nations. Retrieved December 4, 2022, from <https://www.fao.org/hunger/en/>

² United Nations. (n.d.). *Global Issues: Food*. United Nations. Retrieved November 27, 2022, from <https://www.un.org/en/global-issues/food>

³ Aughenbaugh, S., Hajduk, K., Hersh, M., & Flowers, K. (2017). What Is Global Food Security? In *The Sky Is the Limit: Geospatial Data, Global Food Security, and Political Stabilities* (pp. 1–3). Center for Strategic and International Studies (CSIS). <http://www.jstor.org/stable/resrep23155.5>

While availability of food measures the amount of food there is to be consumed, access measures how easily people can acquire the food.

Availability

One key factor in food availability is land tenure, which is defined as “the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land focuses on who owns the space.”⁴ This could be larger corporations, smaller scale farmers, individuals, or even governments. Land tenure reflects the capacity institutions have to use the land. The establishment that owns the land determines who gets access to it and what they can do on the land. Arguably, land tenure and ownership work hand in hand to affect availability as an issue of food insecurity. The World Bank states:

Both smallholder and large-scale agriculture are necessary to boost productivity and produce enough food to feed the world’s poor. In order to move from subsistence to commercial farming, 1.5 billion people who rely on small farms need access to knowledge, assets, credit, markets, and risk management that can come from larger-scale agricultural enterprises.⁵

Worldwide 1.5 billion people get their food through small farms so having access to land is very important to be able to do that. In some Caribbean countries, land tenure has been a problem because of legality issues. While some people informally inherit lands from their family and move into those spaces, they sometimes do not have the proper legal paperwork to support this. “These alternative land tenure forms reflect dynamic attempts by the poorer sectors of Caribbean society to maximize their kinship lines and their limited access to land, in order to ensure their own food security and intergenerational survival”⁶ The cultural implications of various land

⁴ FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. (n.d.). *Land Tenure and Rural Development*. 3. What is land tenure? Retrieved November 27, 2022, from <https://www.fao.org/3/y4307e/y4307e05.htm>

⁵ World Bank Group. (2014, March 31). *Land and Food Security*. World Bank. Retrieved November 27, 2022, from <https://www.worldbank.org/en/topic/agriculture/brief/land-and-food-security1>

⁶ INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE. (n.d.). *Variations on land tenure in Latin America and the Caribbean*. IICA.INT. Retrieved November 27, 2022, from <https://www.iica.int/en/press/news/variations-land-tenure-latin-america-and-caribbean>

tenure arrangements can make it difficult for states to recognize the legality of some forms of land tenure. In some cases, these arrangements ensure food stability to some as people are able to grow their foods on their lands. When the state does not recognize the legality of the tenure it can result in both land and food insecurity.

Another issue for food availability is water accessibility. For land to be irrigated properly, there must be a stable and consistent means of getting water to the crops in the land area. This may look like moving streams near the crops, submerging part of the crops in water, or having a sprinkler system. “Water irrigation makes up 90% of water use in developing countries and 72% worldwide.”⁷ While water irrigation directly supports food availability in one aspect, if farmers use too much water, too little might be left for food preparation, drinking, or even other food sources, like fish. Water also “contributes to ecological functions through the provisioning of habitat for aquatic life, including fish that is food for humans.”⁸ Countries in the African continent are experiencing the most negative effects of food insecurity due to water scarcity. “Water scarcity and irregular rainfall distribution are proving to be an impediment to Africa’s efforts to ensure food security. Agriculture production systems, which are the backbone of food security, are also adjusting to tightening water availability by reducing freshwater use especially in the African region.”⁹

Water is also a climate issue, and farmers worldwide are dealing with floods, droughts, and storms as climate change increases the number of devastating weather events. Research by the Council for Foreign Relations indicates that weather-related events are one of the main

⁷ Wee, R. Y. (2017, April 25). *Countries with the worst water use productivity*. WorldAtlas. Retrieved November 27, 2022, from <https://www.worldatlas.com/articles/countries-with-the-worst-water-use-productivity.html>

⁸ Vilakazi, N., Nyirenda, K., & Vellemu, E. (2019, July 15). *Unlocking water issues towards food security in Africa*. IntechOpen. Retrieved November 27, 2022, from <https://www.intechopen.com/chapters/67624>

⁹ Vilakazi, Nyirenda, & Vellemu

reasons for food insecurity.¹⁰ Foreign Policy Research Institute researcher Charles A. Ray states: “Varying rainfall leads to flooding in some areas and droughts in others, both of which reduce agricultural production, increase food insecurity and food prices, and cause dislocation of poverty-stricken rural populations to already overcrowded urban areas that are ill-equipped to accept them, or to other nations.”¹¹ An Oxfam International report found that there is “a strong correlation between extreme weather and rising hunger in 10 climate hot spots, which are Afghanistan, Burkina Faso, Djibouti, Guatemala, Haiti, Kenya, Madagascar, Niger, Somalia and Zimbabwe. The countries were identified as hot spots because they had the highest number of United Nations humanitarian appeals for weather-related crises since 2000.”¹² The report also found that the countries contributing the least to the negative impacts of the climate crisis are experiencing the worst effects, which is especially evident with respect to food insecurity.

Another variable in food availability is rural to urban migration and the diminishing workforce in the countryside. Such population movement makes it difficult for farmers (who are typically in rural areas) to find laborers for their farms. When there are fewer people to farm, it makes it difficult for farmers to produce food to the extent that it is needed. Researchers Isabell Duda, Anja Fasse, and Ulrike Grote wrote: “the adverse effects of migration on food security exist, especially if the remaining households face a loss in agricultural family labor. In Ethiopia, households with migrant members showed higher levels of food insecurity and worsened dietary

¹⁰ Cheatham, A., & Klobucista, C. (2020, September 21). *Rising hunger: Facing a food-insecure world*. Council on Foreign Relations. Retrieved December 4, 2022, from <https://www.cfr.org/article/rising-hunger-facing-food-insecure-world>

¹¹ Ray, C. A. (2021, October 29). *The impact of climate change on Africa's economies*. Foreign Policy Research Institute. Retrieved November 27, 2022, from <https://www.fpri.org/article/2021/10/the-impact-of-climate-change-on-africas-economies/>

¹² Tsui, K. (2022, September 18). *Extreme hunger on the rise in the world's Worst Climate Hot Spots*. The Washington Post. Retrieved November 27, 2022, from <https://www.washingtonpost.com/world/2022/09/16/oxfam-somalia-hunger-climate-change/>

diversity.”¹³ The researchers described how, in “Nepal, the absence of men due to migration forced the remaining women to adopt several coping strategies, for instance leasing land or livestock, to compensate the loss in labor force in agriculture, which in turn impeded their stability and provision of adequate food.”¹⁴ In some ways, food insecurity also leads to the diminishing workforce. As people find themselves unable to make enough to sustain themselves and their families through farming, they look outside of their towns to more urbanized areas, as these places tend to have a more promising economy for non-skilled workers. This is sometimes a product of the lack of support farmers are receiving from their respective governments. “Support provided to farmers has also started to be more disconnected (“decoupled”) from production – meaning that many farmers no longer receive payments or higher prices for producing a specific commodity.”¹⁵

Sanctions can also reduce food availability (as well as accessibility and stability), for example, as they have in Syria. Mohammad Kanfash of the World Peace Foundation stated: “In Syria, sanctions directly and indirectly impact the different dimensions of food security (availability, access and stability) due to their impact on the economy, the agricultural sector and ability of state as well as private actors and humanitarian actor to import food, equipment or conduct their work properly, among others.”¹⁶ Syria has unfortunately been subjected to sanctions by the US, Canada, European Union, the Arab League, and more states in an effort to deter the mistreatment of its civilians. The sanctions exacerbated food insecurity within the state.

¹³ Duda, I., Fasse, A., & Grote, U. (2018, April 23). *Drivers of rural-urban migration and impact on food security in rural Tanzania - Food Security*. SpringerLink. Retrieved November 27, 2022, from <https://link.springer.com/article/10.1007/s12571-018-0788-1>

¹⁴ Tsui

¹⁵ Organisation for Economic Co-operation and Development. (n.d.). *What governments are doing*. OECD. Retrieved November 27, 2022, from <https://www.oecd.org/agriculture/understanding-the-global-food-system/what-governments-are-doing/>

¹⁶ Kanfash, M. (2022, July 6). *Sanctions and food insecurity in Syria*. Reinventing Peace. Retrieved November 27, 2022, from <https://sites.tufts.edu/reinventingpeace/2022/07/06/sanctions-and-food-insecurity-in-syria/>

While the sanctions' goal might have been to help the country's civilians, the sanctions inadvertently hurt those same civilians by reducing agricultural productivity.

Another threat to food availability is pests. Infestations can directly harm crop production. In 2020, for example, there was an outbreak of locusts in parts of Africa. "Without broad scale control, conservative estimates for locust-related losses including for staple crops, livestock production, and asset damages are estimated at US\$8.5 billion for countries in the wider East Africa region, Djibouti and Yemen."¹⁷

Finally, global interdependence means that each of these issues directly affects not just one country, but all the countries to which it sends food. Most countries cannot sustain themselves with domestic food growth alone, and that is why international trade is so important. The pandemic has highlighted how this interdependence can negatively impact a country when the global food chain breaks down. While trading between countries is not harmful, Raj notes, "Resilience of global food systems is however undermined when countries are either super exporters or almost entirely trade dependent importers."¹⁸ Raj added, "War in Ukraine, for example, combined with supply chain issues, have contributed to price increases in cereal grains and food prices globally, but especially in the Global South where countries rely on cereal imports." This area encompasses Africa, Latin America and the Caribbean, Pacific Islands, and the developing countries in Asia, including the Middle East."¹⁹

¹⁷ World Bank Group. (2020, July 1). *The locust crisis: The World Bank's response*. World Bank. Retrieved November 27, 2022, from

<https://www.worldbank.org/en/news/factsheet/2020/04/27/the-locust-crisis-the-world-banks-response>

¹⁸ Raj, S., Brinkley, C., & Ulimwengu, J. (2022, June 15). *Connected and extracted: Understanding how centrality in the global wheat supply chain affects global hunger using a network approach*. PLOS ONE. Retrieved November 27, 2022, from

<https://journals.plos.org/plosone/article?id=10.1371%2Fjournal.pone.0269891>

¹⁹ University of California - Davis. (2022, June 27). Global food supply-chain issues call for solutions: Disruption in wheat trade can affect food security. *ScienceDaily*. Retrieved November 27, 2022 from www.sciencedaily.com/releases/2022/06/220627141448.htm

Access

With respect to access, the FAO argues that poor infrastructure slowing or obstructing the movement of goods plays an important role in keeping people from getting food. For example, when food is being produced but the roads are bad enough to slow transport, some food may spoil on the way to markets and other food may not make it at all. This is especially prominent in rural areas, where “approximately 68% of the world’s rural population... still do not have all-season access to road networks”²⁰ A report by the International Food Policy Research Institute in Washington found that “A total of \$239 billion invested over the next 15 years, in road and railway connections to connect farms to markets and in electricity supplies to improve cold storage, would yield benefits of \$3.1 trillion by safeguarding food.”²¹

When considering how international relations play a role in food access, it is important to note that imported foods and the fluctuation of currency values could make it very difficult for people to buy imported goods. When the dollar becomes stronger than other countries' currencies, but the people are not making more of their own currency to compensate for that difference, they need to use more of their own currency to buy the goods. Pakistan and Egypt faced these issues this year. “Both are large importers of key globally-traded agricultural commodities, often traded in US dollars, and both countries have experienced significant currency depreciation as supply constraints have intensified. Since January, the Pakistani rupee

²⁰ Sasidhara, M. (2017, November 22). *Better Rural Transport is key to Food Security and zero hunger*. SLOCAT. Retrieved November 27, 2022, from <https://slocat.net/1901-2/>

²¹ De Los Santos, J. (2015, January 29). *Build better roads in developing world to bolster food supplies*. Build better roads in developing world to bolster food supplies | Copenhagen Consensus Center. Retrieved November 27, 2022, from <https://www.copenhagenconsensus.com/post-2015-consensus/news/build-better-roads-developing-world-bolster-food-supplies>

(PKR) and the Egyptian pound (EGP) have depreciated 17.8%, and 15.8%, respectively, against the US dollar.”²²

Migration affects not only the availability of food, but access to it, as well, as is evident in urban areas. Migration to these urban areas can lead to overpopulation, but the resources and job opportunities are not increasing. More people and fewer jobs creates competition that lowers wages and makes food less affordable. Urbanization happens when people move in masses to densely populated cities. Most people move from poor household situations with the hope of having more stable income through more work opportunities, which they had difficulty finding in their areas. Within urban areas “the nutritional status of poor slum dwellers is similar to those of rural populations, challenging the myth that urban dwellers are generally better off than their rural counterparts.”²³ While people are going into urban areas with this hope, they come to find that urbanization does not automatically take someone out of poverty; rather, poverty seems to take on a new form. The results of this study found that not only are people living in poor urban areas not getting the food they need, but also, the food they do receive is bad for their health. Too many people migrating into urban areas means there are a lot of people willing to accept less pay for their work. This makes it difficult for them to get good food because they do not have enough money, so they buy food made cheaply that is not nutritious.

Corruption, crime, and conflict make accessing food very difficult as well. Conflict within countries can leave some regions without food. For example, in Yemen, the civil war that began in 2014 when Houthi insurgents took control of Yemen’s capital, has led to the world’s

²² Admin. (2022, June 6). *Currency moves will aggravate food insecurity*. Gro In November 27, 2022, from <https://gro-intelligence.com/insights/currency-moves-will-aggravate-food-insecurity>

²³ Ruel, M. (2020, October 14). *Growing cities, growing food insecurity: How to protect the poor during rapid urbanization*. Growing Cities, Growing Food Insecurity: How to Protect the Poor during Rapid Urbanization | Center for Strategic and International Studies. Retrieved November 27, 2022, from <https://www.csis.org/analysis/growing-cities-growing-food-insecurity-how-protect-poor-during-rapid-urbanization>

worst food crisis, with 20.1 million people needing food assistance at the beginning of 2020 (about two-thirds of Yemen’s population).²⁴ National Geographic research on hunger and war found that “Wars commonly trigger the displacement of huge numbers of people, cutting them off from their food supplies and livelihoods. Refugees are often vulnerable to acute food insecurity as well as disease. Alternately, if people remain in their homes, surrounding armies can trap people inside a village, city, or neighborhood and deprive them of food, medicine, and other vital resources until they surrender.”²⁵

In some cases, food insecurity can cause conflict and violence to arise. For example, “The Arab Spring uprisings of 2011 took place during a period of historically high food prices in North Africa and the Middle East.”²⁶ These anti-government protesters took to the streets when citizens in Arab countries felt that their governments were not responding to their grievances, which included high food prices. While there was food around, people could not afford to buy it because the cost was so high, inciting conflict in the area.

Corruption happens when those in power abuse their power to enrich themselves. It can take forms of bribery, theft, and extortion. In research focused on the effects of bureaucratic corruption on food insecurity in sub-Saharan countries, researchers found that “victims of bribery were at least 30 percent likely to report one form of food insecurity than non-bribe paying families: thus, suggesting that bribery siphon resources from household food spending or budget, which, in turn, forces the affected household to ration or even forgo spending on food.”²⁷

In order to access public programs, people had to pay bribes to those in charge. Those who

²⁴ Roth, K. (2021, September 9). *World Report 2021: Rights trends in Yemen*. Human Rights Watch. Retrieved November 27, 2022, from <https://www.hrw.org/world-report/2021/country-chapters/yemen>

²⁵ National Geographic Society. (n.d.). *Hunger and war*. National Geographic Society. Retrieved November 27, 2022, from <https://education.nationalgeographic.org/resource/hunger-and-war>

²⁶ Roth

²⁷ Olabiyi, O. M. (2021, October 28). *The effect of bureaucratic corruption on household food insecurity: Evidence from Sub-Saharan Africa - food security*. SpringerLink. Retrieved December 2, 2022, from <https://link.springer.com/article/10.1007/s12571-021-01231-2>

needed the service of these public programs would pay the bribe, but those seeking out the service are people who suffer from food insecurity. While programs are designed to provide people with access to resources that can help alleviate food insecurity, extortion and bribes from public officials make it difficult for people to reap those benefits.

Manufacturing stoppage, also known as production downtime, occurs when manufacturing companies stop the production of food. This can be both planned or unplanned downtime. The former can be due to product changeovers, while the latter can be due to a machine breaking in the midst of production. Planned production downtime is typically accounted for, and the negative impact to food production is not as drastic. Studies have found that consumer demands for broader food choices, including lactose-free options, low-sugar options, and more, encourages more frequent downtime for changeovers, so manufacturers can meet this need. “An increasing number of manufacturers are finding that their production lines simply cannot keep up with the downtime associated with changing frequently from one product to another. After all, the more changeovers there are, the more downtime there is which means a decline in productivity, and ultimately revenue.”²⁸ While unplanned downtime can be extremely costly and impact access to food dramatically:

unexpected downtime such as equipment breakdown and mechanical failures can be even more costly. Especially considering that many food and beverage operations have a high volume of products being produced continuously. Therefore, if equipment breaks down, manufacturers face staggering losses of production and often spoilage of food or drink ingredients and products. In fact, research conducted by Aberdeen Group found that unplanned downtime can cost businesses as much as \$260,000 an hour.²⁹

Contamination of food negatively impacts food access. Soil pollution, which occurs when there are “chemicals used in or produced as byproducts of industrial activities; domestic,

²⁸ Rousell, K. (2020, May 12). *Minimising production downtime in food and drink manufacture*. HPS Hygienic Pigging Systems. Retrieved December 2, 2022, from <https://www.hps-pigging.com/minimising-production-downtime-in-food-and-drink-manufacture/>

²⁹ Olabiyi

livestock and municipal wastes (including wastewater); agrochemicals; and petroleum-derived products”³⁰ is found typically on farmland. There are two ways this pollution negatively impacts food security: “it can reduce crop yields due to toxic levels of contaminants, and crops grown in polluted soils are unsafe for consumption by animals and humans.”³¹

Not only does soil pollution contaminate food, but it can lead to other diseases that can make it difficult to get food. “Soil pollution can lead to the emergence of new pests and diseases by changing the balance of ecosystems and causing the disappearance of predators or competing species that regulate their biomass. It also contributes to the spreading of antimicrobial resistant bacteria and genes, limiting humanity’s ability to cope with pathogens”³²

Disease also has a lot of impact on food insecurity. The COVID-19 pandemic showcased the global effects of disease. This disease forced many people out of work, children had to stay home, and people could not access necessities. New research has shown that “Food insecurity among adults and children has increased during the COVID-19 pandemic due to rising levels of unemployment, poverty, and limited access to school nutrition programs because of school closures.”³³

There are various factors that play a role in global food insecurity. Those presented here do not comprise not an exhaustive list, but an important starting point. The next section will take a look at how to mitigate global food insecurity.

³⁰ Bensada, A. (2020, December 4). *Soil pollution a risk to our health and food security*. UNEP. Retrieved December 2, 2022, from

<https://www.unep.org/news-and-stories/story/soil-pollution-risk-our-health-and-food-security>

³¹Olabiyi

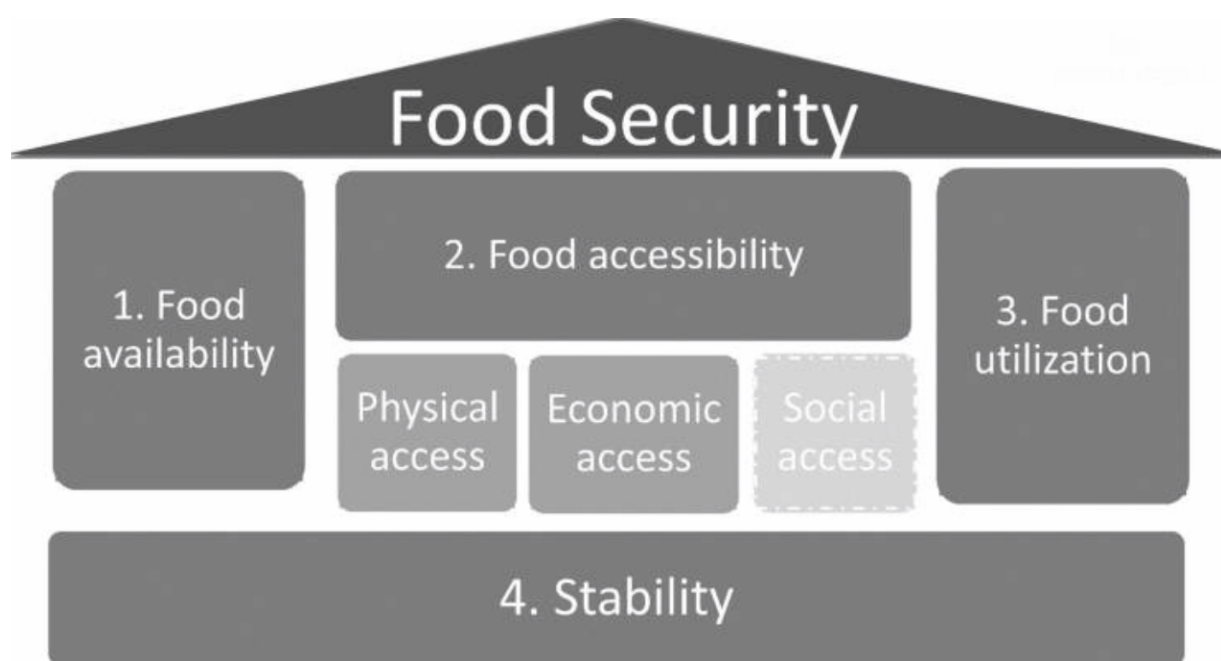
³²Olabiyi

³³ Flores-Thorpe, S., & Janda, K. (2022, June 28). *Impact of covid-19 on food insecurity - uthealth school of public health*. A RESOURCE FOR IMPROVING MEASURABLE IMPACT Impact of COVID-19 on Food Insecurity. Retrieved December 3, 2022, from

<https://sph.uth.edu/research/centers/dell/legislative-initiatives/Impact-of-COVID-19-on-Food%20Insecurity-6.28.2022.pdf>

How to Overcome Food Insecurity

While food insecurity is defined as people not having availability and access to food given those respective drivers above, in contrast “The FAO (2002) defines food security as ‘a situation that exists when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their dietary needs and food preferences for an active and healthy life.’”³⁴ The FAO offers four different categories contributing to food security, as seen in the diagram below: food availability, access, stability, and utilization.³⁵



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As seen in the second section, defining food insecurity through availability and access focused on factors such as land tenure, sanctions, water, migration, and more. This section will analyze

³⁴ Wutich, A., & Brewis, A. (2014). Food, Water, and Scarcity: Toward a Broader Anthropology of Resource Insecurity. *Current Anthropology*, 55(4), 444–468. <https://doi.org/10.1086/677311>

³⁵ Sassi, Maria, Sassi, and Acocella. (2018) Cham: Springer *Understanding food insecurity*. <https://link.springer.com/content/pdf/10.1007/978-3-319-70362-6.pdf>

³⁶ Orjuela-Grimm, M., Deschak, C., Aragon Gama, C. A., Bhatt Carreño, S., Hoyos, L., Mundo, V., Bojorquez, I., Carpio, K., Quero, Y., Xicotencatl, A., & Infante, C. (2021, September 20). *Migrants on the move and food (in)security: A call for research*. *Journal of immigrant and minority health*. Retrieved December 2, 2022, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8450693/figure/Fig1/>

food security by highlighting some of the many solutions experts have offered with respect to the types of challenges enumerated in the prior section.

Availability

In order to better support food availability through land tenure, governments must create laws that protect individuals that enter non-formal agreements over land use. Researchers who explored the effects on land tenure on Caribbean countries stated, “The Caribbean region needs ... institutions that would effectively administer both private and public interests in land in a market economy. This is needed to ensure that initiatives such as environmental zoning, promoting eco-tourism, managing urban expansion, protecting coastal zones and controlling deforestation are not seriously challenged by the trend towards marketization of individual land rights.”³⁷ The World Bank agrees with these terms and states that to transform land tenure in Africa is to end poverty, which inherently ends food insecurity. The Vice President of the World Bank for Africa, Makhtar Diop, claims “Improving land governance is vital for achieving rapid economic growth and translating it into significantly less poverty and more opportunity for Africans, including women who make up 70 percent of Africa’s farmers yet are locked out of land ownership due to customary laws.”³⁸ The lack of official protection leaves citizens in a vulnerable position, so upholding laws that protect women’s farm lands would guarantee access to farmable land. The World Bank's 2013 report “Securing Africa’s Land for Shared Prosperity,” is an official action plan for change in securing land for African people as listed below:

- Championing reforms and investments to document all communal lands and prime lands that are individually owned.

³⁷ INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE.

³⁸ World Bank Group. (2013, July 22). *How Africa can transform land tenure, revolutionize agriculture, and end poverty*. World Bank. Retrieved December 2, 2022, from <https://www.worldbank.org/en/news/press-release/2013/07/22/how-africa-can-transform-land-tenure-revolutionize-agriculture-end-poverty>

- Regularizing tenure rights of squatters on public land in urban slums that are home to 60 percent of urban dwellers in Africa.
- Tackling the weak governance and corruption endemic to the land governance system in many African countries which often favor the status quo and harm the interests of poor people.
- Generating the political will of African governments to mobilize behind these land reforms and attract the political and financial buy-in of the international development community.³⁹

Overall, to better support people who are most vulnerable to the implications of unclear or even exploitive tenure and land ownership issues, governments must create better farmer/landowner rights and implement them into law. This would make food accessibility easier because people will no longer have to worry about someone taking land they have invested labor and money into. When landowners and farmers grow crops on their land, this in turn would create more economic opportunities/access for the owner through the stable selling of their resources, while also providing stable food to buyers/community members. Through strong relationships with local markets, farmers will know how their products are best being utilized. These moving parts support all four elements that are required to create a food secure region.

Stable water access and functional land irrigation has a big role in creating a food secure society. There needs to be a reduction in water usage in all sectors of water supply. From use as vast as irrigating entire farms to something more small-scale like taking showers, everyone needs to reduce their water usage. “The present status of water potential in Africa suggests that synergies that adopt sharing of expertise, experiences, knowledge, analytical capabilities, and optimizing mechanisms for greater food safety assurance and awareness by looking at both

³⁹ World Bank Group

chemical and microbial hazards in foods should be promoted in the continent.”⁴⁰ Essentially, sharing information with necessary networks will help in understanding using water in more optimal ways that would assure that people would not have to suffer the effects of not having enough clean, accessible water. Along with that, having strong networks of support systems available for people who are impacted by water-related natural disasters not only guarantees help to those in need, but for those who supply food, it would ensure that the production of food is not impacted for a long time. A government can provide insurance (stability), begin programs directly after a natural disaster (availability and utilization), or set aside funding for natural disasters (accessibility). All of these efforts would guarantee that people are getting the support they need in their most needy time. All of these suggestions directly support the 4 factors needed to obtain food security. The US has a United States Department of Agriculture (USDA) federal program for farmers that perfectly depicts this. Among other things, the “USDA offers programs that provide coverage for producers to help them manage risk and to protect their operations from the impact of natural disasters and offer price support for drops in prices or revenues.”⁴¹

In order to combat the diminishing workforce due to rural to urban migration, farmers must have more sustainable pay for their workers. People are not paid well enough to sustain themselves doing farming work. In order to combat this, governments can pass policies that encourage more equitable pay. “Public spending on agricultural innovation and inspection services, for example, are particularly effective at raising sustainable agricultural productivity growth. Payments to farmers can be tailored to specific policy objectives.”⁴² For example,

⁴⁰ Vilakazi, N., Nyirenda, K., & Vellemu, E. (2019, July 15). *Unlocking water issues towards food security in Africa*. IntechOpen. Retrieved December 2, 2022, from <https://www.intechopen.com/chapters/67624>

⁴¹ Ducheneaux, Z., & Carlson, B. (2022, September 1). *Protection and recovery*. Farmers.gov. Retrieved December 2, 2022, from <https://www.farmers.gov/protection-recovery>

⁴² Organisation for Economic Co-operation and Development. (n.d.). *What governments are doing*. OECD. Retrieved December 2, 2022, from <https://www.oecd.org/agriculture/understanding-the-global-food-system/what-governments-are-doing/>

governments can promote giving subsidies to farms that have set minimum wages that are sustainable to where they live, to encourage workers to stay. According to World Resources Institute researchers Helen Ding, Will Anderson, and René Zamora-Cristales, there are four things governments can do to create public land restoration while prioritizing small farmers and environmental restoration: “1) Remove farm subsidies for underperforming fertilizers and pesticides, 2) create incentives for land restoration, 3) put small farmers first, and 4) work together.”⁴³

In Malawi, the government created a subsidy program that encouraged fertilizer usage. While it did have immediate positive effects on food security, the fertilizer caused long term negative effects. In this case, Malawi’s government can remove these subsidies and put the money back into projects or initiatives “that help farmers restore land through agroforestry or silvopasture (in support of its National Forest Landscape Restoration Strategy), they can help build climate-resilient rural economies.”⁴⁴

Due to the increasing deforestation for farmland, the Burkina Faso government “initiated a \$30 million Forest Investment Program in 2010 that paid people to grow trees on their farms. This scheme not only restored land, it also gave households enough money to spend 12% more on food, reducing food insecurity by 35-60%.”⁴⁵ Large farm owners typically benefit the most from subsidies now. “Given that farmers with fewer than 15 hectares of land produce most of the world’s food, governments must design incentive programs that reach them as intended.”⁴⁶

Finally to the fourth and last point, “Officials in national agriculture, environment, rural planning and finance ministries need to work together to achieve common goals. Restoring

⁴³ Ding, H., Anderson, W., & Cristales, R. Z. (2021, August 25). *Smarter Farm Subsidies Can Drive Ecosystem Restoration*. World Resources Institute. Retrieved December 2, 2022, from <https://www.wri.org/insights/how-farm-subsidies-combat-land-degradation>

⁴⁴ Ding, Anderson, & Cristales

⁴⁵ Ding, Anderson, & Cristales

⁴⁶ Ding, Anderson, & Cristales

farmland can support governments' policy goals on climate, biodiversity and rural development, while saving their budgets."⁴⁷ Government officials from Chile, El Salvador, Guatemala, Mexico, and Peru came together for a Restoration Policy Accelerator where they were able to build Latin-America focused restoration incentives. Ensuring all of this occurs will ensure farm owners are able to provide for their workers, which would dissuade more rural workers and earners from leaving their towns. Overall, these moving parts align with the four parts of food security.

One solution to sanctions begins with limiting what can be sanctioned. When people's lives are on the line, especially victims of war, sanctioning food has adverse effects on a wider array of people than the intended audience. "Humanitarian exceptions should be included as part of any comprehensive sanctions. Innocents should not be made to suffer any more than is absolutely necessary. Including an exception that allows a target to import food and medicine should also make it easier to bring about domestic and international support."⁴⁸ In this case, when victims of war still have food coming into their country, food availability, accessibility, and utilization will be more secure.

Infestation can be combated in ways that are specific to what is infesting the land. When discussing the issue of the locust infestations, for example, the World Bank Group "approved a \$500 million program to provide flexible support to countries in Africa and the Middle East affected by the locust outbreak. The priority is helping affected households to meet their immediate food needs and to safeguard their physical and human capital assets via cash transfers

⁴⁷ Ding, Anderson, & Cristales

⁴⁸ Haass, R. N. (2016, July 28). *Economic sanctions: Too much of a bad thing*. Brookings. Retrieved December 2, 2022, from <https://www.brookings.edu/research/economic-sanctions-too-much-of-a-bad-thing/>

and other social protection measures.”⁴⁹ Providing funds to affected families offers immediate relief, as they can get food/resources without relying on their crops/farms. If a country is experiencing another type of infestation, governments and world organizations must contribute funds to assure that people can buy food in the immediate future. In terms of long term support, there needs to be a “focus on rehabilitating food production and livelihood systems to get communities back on their feet, while strengthening national surveillance and early warning systems to mitigate the threat of future outbreaks.”⁵⁰ Providing national insurance to crop owners would be another long term solution, as it would guarantee that people who do face these natural disasters would be protected from issues beyond their scope. Likewise, having specialized research teams would help farmers and governments understand why infestations start and how to prevent them.

Global interdependence has its pros and cons. As mentioned in the prior section, global interdependence can be harmful when countries rely on each other and a country’s crops fail. The first possible solution to this issue would be to limit the amount of interdependence countries have. Where possible, countries could rely on their own agricultural practices and food production to ensure their citizens' needs are being met. This would mean investing in the development of these agricultural abilities in order to sustain the country. And it can be possible for some countries. For example, Africa’s economy comprises primarily micro-, small-, and medium-sized enterprises (MSMEs). Focusing support on this sector of food growth could include encouraging citizens to purchase from local vendors. “The World Bank estimates that Africa’s agribusiness sector could triple in value by 2030 – to USD \$1 trillion– if the continent

⁴⁹ World Bank Group. (2020, July 1). *The locust crisis: The World Bank's response*. World Bank. Retrieved December 2, 2022, from

<https://www.worldbank.org/en/news/factsheet/2020/04/27/the-locust-crisis-the-world-banks-response>

⁵⁰ World Bank Group

can expand access to capital, electricity, advanced technology and irrigated land to grow and process high-value nutritious foods.”⁵¹ Creating stronger food systems would loosen the interdependence between countries. It is also important to note that most countries cannot be fully self-reliant, but should aim towards importing food as little as necessary. Self sufficiency directly impacts food security because it promotes local farmers to produce more (availability). Local farmers then distribute their crops to local sellers and people in the country (physical accessibility). Those who buy crops are able to buy them for eating (utilization), and finally, relying more on local farmers ensures that the issues that other countries face with food will not directly negatively impact self-reliant countries (stability).

Access

Building better infrastructural systems would also help ensure food security. Governments need to divert their money and resources into making better roadway systems so perishable food items reach the people who need them. “Good all-season access improves the efficiency of food distribution, by providing better connectivity throughout the year and lower transport costs via shorter journey times, lower fuel consumption rates and less vehicle wear and tear. In turn, these enable reductions in costs, wastage and damage of produce during transportation.”⁵² A perfect example of how better infrastructure has been beneficial to food security is when an “investment in rural roads contributed to approximately 25% of agricultural produce growth in India during the 1970s and was responsible for the largest impact in poverty reduction.”⁵³

⁵¹ Bountifield International. (2020, November 11). *The interdependent nature of global trade in Food & Agriculture*. Bountifield International. Retrieved December 2, 2022, from <https://bountifield.org/wfd2020/>

⁵² Sasidharan, M. (2017, November 22). *Better Rural Transport is key to Food Security and zero hunger*. SLOCAT. Retrieved December 2, 2022, from <https://slocat.net/1901-2/>

⁵³ Sasidharan

The solutions to global interdependence are the exact same solutions for imported foods. Countries send over their food products to other countries for profit. In the same way that when countries reduce global interdependence by being self-sufficient, countries would have to stop importing more foods than they export, ideally importing as minimal amount of food as possible. This also directly ties to currency fluctuation, as most countries would not have to compare their currency to the dollar to keep up with providing food to its people. Once again, encouraging better self-sufficient food production through better support for farms within countries would automatically force countries to stop importing as much food, ensuring that all four parts of food security are being met.

The Center for Strategic & International Studies (CSIS) states that these four ways can help food security in urban areas:

1. Leverage food systems to increase availability, access, and affordability of nutritious foods, and consumption by the urban poor (i.e policies supporting urban agriculture and informal agriculture training) (availability)
2. Tailor and target social safety nets (i.e targeted cash, food transfers or vouchers) (access)
3. Design and target education campaigns (i.e combining mass media messaging to urban households) (utilization)
4. Address inequalities in the access of poor urban dwellers to services (i.e health care, water, sanitation, waste removal, and electricity services) (sustainability)⁵⁴

The first point directly addresses how to make food in urban areas more available to urban communities. The second point caters to providing access to those in need. The third point highlights how people can utilize their foods in the healthiest ways, and the fourth and final point highlights how food efforts can be sustained, all of those ensuring a more food-secure urbanized country.

Within the first and fourth categories, food quality is a big issue. Poor people buy poor food. In order to alleviate some of the issues that have arised, programs can be implemented to

⁵⁴ Ruel

assure that people are getting the nutrients they need. When local food markets' infrastructures are improved, for example, that makes food access safer, and it allows people to have access to safe, inexpensive foods. For example:

MSU (Michigan State University) and LUANAR (Lilongwe University of Agriculture and Natural Resources) have crowdfunded a total of \$6,683, which was donated to six market committees for the improvement projects that students and retailers identified as being most critical. This money, in conjunction with monetary and in-kind contributions by city officials and market communities, has been used to upgrade toilets and install water taps, lighting and a security gate.⁵⁵

Building water taps for the market made a difference in how food vendors were able to make food more efficiently and safely. Prior to this, within this particular market, without clean water, there was a lot of unsanitary behavior, such as sellers making their food in bulk at the beginning of the day, which made the food cold by the end of the day. When the taps were built, sellers were able to make their food on demand, which was safer and also encouraged more people to purchase the food, as the food was hot and fresh. The creation of taps increased both food safety and sales for the sellers.

As CSIS pointed out in its report, as a matter of access, people in cities also need money to pay for food. This can come from subsidies, vouchers, jobs programs, and a broad range of other efforts to ensure people have enough disposable income to buy what food is available.

As mentioned previously, in countries experiencing sanctions, food insecurity is a common problem. So, in 2018, “the United Nations (UN) Security Council unanimously passed a resolution condemning the use of food insecurity and starvation as a tactic of war.”⁵⁶ The Council recognized how war and conflicts create unsuitable living conditions for civilians of war.

⁵⁵ 19, K. D. A., & Deska, K. (2018, April 19). *Increase urban food security with improved infrastructure*. Agrilinks. Retrieved December 2, 2022, from <https://agrilinks.org/post/increase-urban-food-security-improved-infrastructure>

⁵⁶ National Geographic Society. (n.d.). *Hunger and war*. National Geographic Society. Retrieved December 2, 2022, from <https://education.nationalgeographic.org/resource/hunger-and-war>

One way war is won is through the use of starvation of civilians and citizens of warring countries. In recognizing that food should be left out of war “the resolution implores all parties to leave food stocks, farms, markets, and other distribution mechanisms intact. It demands parties in conflict permit humanitarian aid workers unimpeded access to populations in dire need and states that “using starvation of civilians as a method of warfare may constitute a war crime” encouraging people to be penalized if they do commit a war crime like tampering with food/access to food.

Manufacturing stoppage can be reduced using two strategies: having routine regular maintenance and encouraging pigging technology for food production. “By setting up a preventative maintenance plan, companies can take a proactive approach to maintenance. This helps improve uptime and production while allowing manufacturers to stay competitive.”⁵⁷ This means that food production will not have to stop. This change would hit all four components of food security ensuring a more food-secure state.

Promoting legislation to build better handling and processing systems can help mitigate contamination. Soil pollution occurs because of the pesticides and other chemicals farmers use on their crops. In order to limit this contamination “FAO’s Revised World Soil Charter recommends that national governments implement regulations on soil pollution and limit the accumulation of contaminants beyond established levels in order to guarantee human health and wellbeing, a healthy environment and safe food.”⁵⁸ This recommendation can be applied to other food contaminants, not just soil pollution. Along with that, a more costly approach requiring that all farmers not use contaminating materials, through legislation and education, will ensure that better products are used for growth. Finally, not making contaminants available to people by

⁵⁷ Rousell

⁵⁸ Bensada

making them unavailable for purchase would also limit how much contamination happens.

Overall, ensuring that food produced is edible for the consumers aligns with all four aspects of food security,

In addition to working with farm owners to build healthier grounds for crop growth through legislation, it is also important to look at a solution from an overall disease control perspective. In an effort to push back against spreading disease through food,

The Food Safety Modernization Act, signed into law in January 2011, was designed to strengthen rules to prevent food contamination that causes foodborne illness in roughly 48 million people every year, killing nearly 3,000, according to the FDA. The law requires food manufacturers to implement stricter disease prevention processes and equipment in all their production, increases inspection authority and gives the FDA mandatory food recall authority over all food products. Additionally, stricter rules regarding the safety of imported food are mandated by the law.⁵⁹

Manufacturers need to follow certain regulations to be able to distribute their products in the US.

Beginning financing programs similar to the FDA in other countries would place a checks system on these manufacturers to ensure that food is made in a healthy way. If the manufacturers are not meeting those requirements, then the FDA-like programs should educate the manufacturers on how to do so in order to ensure that production does not stop and people also do not get sick from these foods. With all of these changes, food health should improve, which will improve food security as a whole.

Outside of these respective factors, it is believed that food insecurity is connected to other negative outcomes, including negative health outcomes and negative impacts on education for school-aged youth. To better support people holistically, governments should be “giving more people benefits through nutrition assistance programs, increasing benefit amounts, and

⁵⁹ Ray, L. (2016, October 26). *Challenges for Food Manufacturing*. Small Business - Chron.com. Retrieved December 2, 2022, from <https://smallbusiness.chron.com/challenges-food-manufacturing-75101.html>

addressing unemployment.”⁶⁰ Food security is not contingent upon factors that only affect food access and availability to all people. It also affects the livelihoods of people altogether. Ensuring people’s needs are met would ensure that people are more food secure and having a more food secure society will promote a society where people’s needs are met.

This section lays out a range of possible solutions countries can use - with adequate will and resources - to address issues of food insecurity. And, of course, there are many more. Some are simple (new taps in a marketplace) and some are far more challenging (addressing issues of soil depletion and pollution). Whether countries employ these tactics or others, however, and with what success, depends on a complex set of political and economic dynamics at home and abroad.

In this next section, I will take a look at food insecurity in Ghana in light of the foregoing and what the country is doing to address it.

⁶⁰ OASH. (n.d.). *Reduce household food insecurity and hunger - NWS-01*. Reduce household food insecurity and hunger - NWS-01 - Healthy People 2030. Retrieved December 2, 2022, from <https://health.gov/healthypeople/objectives-and-data/browse-objectives/nutrition-and-healthy-eating/reduce-household-food-insecurity-and-hunger-nws-01>

Looking at Food Security in Ghana/ What is Happening in Ghana?

Ghana was the first country in West Africa to win its independence from the British in 1957. In the first few years of independence, Ghana was under civilian rule, which was later ousted by a military coup to begin a military reign. In 1993, Ghana became a parliamentary democracy allowing its citizens to elect their president. With a population of 31 million people, 43% of the population lives in rural areas.⁶¹ Ghana's economy is a combination of both public and private ventures. Researchers have found that "About three-fifths of the GDP is derived from the services sector, agriculture contributes almost one-fifth, and industry about one-fourth."⁶² Historically, Ghana's industry, commerce, agriculture, and banking were privately owned, with all sectors, excluding agriculture, being owned by foreigners. In the years following independence, Kwame Nkrumah (1909-1972), Ghana's first President, sought to make these institutions public in an effort to bridge the financial gap for Ghanaian citizens, creating state-owned ventures focused on industry and agriculture. Foreign organizations were encouraged to collaborate with the Ghanaian government to make up for the minimal capital and entrepreneurial skills within the country. Unfortunately, however, the government's goal to nationalize industry was never fully met due to corruption.

Researcher Chelsea Masse wrote that successive governments after Nkrumah's "favoured large scale, capital intensive production and focused little on industrialization through agricultural surpluses and raw materials."⁶³ In 1981, when Jerry John Rawlings became the Head of State of Ghana, the State's focus shifted towards economic development. Rawlings used his

⁶¹ Data Commons Place Explorer. (n.d.). *Ghana*. Ghana - Place Explorer - Data Commons. Retrieved December 2, 2022, from

https://datacommons.org/place/country/GHA?utm_medium=explore&mprop=count&popt=Person&hl=en

⁶² The Editors of Encyclopaedia Britannica. (1999, July 26). *Economy of Ghana*. Encyclopædia Britannica. Retrieved December 3, 2022, from <https://www.britannica.com/place/Ghana/Economy>

⁶³ Masse, C. (2018, October 29). Perspectives on Food Security Politics in Ghana. Retrieved December 3, 2022, from <https://atrium.lib.uoguelph.ca/xmlui/handle/10214/14462>

leadership to push forward anti-corruption initiatives, institutionalized local civic participation, and most importantly, he focused on agricultural advancements that would improve the nature of food production in Ghana. Mass wrote that “agrarian change was quite evident during the Rawlings era. The government wanted to pursue a path of food self-sufficiency.”⁶⁴ The government promoted this by subsidizing the price of a complex technological farm equipment package, which “comprised of fertilizers, water retention techniques, diguettes and dikes, and labour-saving technologies of animal traction and mechanical ridge tier.”⁶⁵ While this program did have good intentions, it forged a gap between farmers who could not keep up with the technologies or use them correctly and those who could not, creating a wealth disparity between the two groups. The Rawlings administration also increased “importation taxes on rice and poultry products to protect local farmers from unfair competition and dumping.”⁶⁶ This effort looked like a benefit to rural communities, however, “Rawlings focused more on urban issues including rent, price and transport fare controls while farmers were asked to accept lower prices for their crops.”⁶⁷ His administration did not always have rural people’s advancements in mind, they were thought of after the prioritization of urban citizens and thus left behind.

The Provisional National Defense Council (PNDC) was created by the Rawlings administration to replace the previous president’s political party.

The PNDC established Workers' Defence Committees (WDCs) and People's Defence Committees (PDCs) to mobilize the population to support radical changes to the economy. Price controls on the sale of food were beneficial to urban workers, but placed undue burden on 70% of the rural population whose income largely depended on the prices of agricultural products.⁶⁸

⁶⁴ Masse

⁶⁵ Masse

⁶⁶ Rawlings, J. J. (2009, December 3). *Farmers need support to modernise – rawlings*. J.J. Rawlings. Retrieved December 3, 2022, from <https://jjrawlings.wordpress.com/2009/12/03/farmers-need-support-to-modernise-rawlings/>

⁶⁷ Masse

⁶⁸ Wikimedia Foundation. (2022, November 19). Jerry Rawlings. Wikipedia. Retrieved December 3, 2022, from https://en.wikipedia.org/wiki/Jerry_Rawlings#cite_note-:03-25

Price controls were supposed to support food access, but made it difficult for rural workers to produce enough food to earn enough money to sustain themselves. In addition to the support urban cities were receiving, this set the foundation for stark wealth disparities between strong urban areas and weak rural areas that struggled to keep up economically.

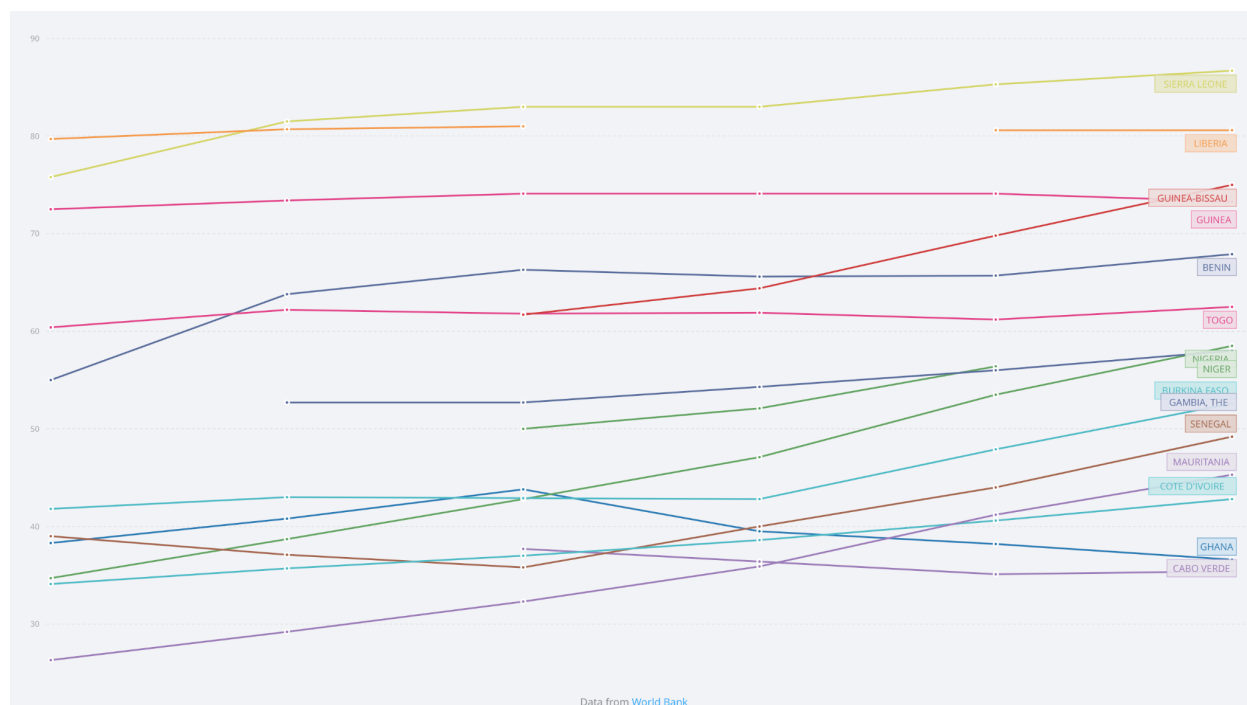
In terms of how food insecure people in Ghana are today, the numbers range very drastically from as little as 11% to around half the population to as high as 49.5%. In 2017, the Ghana Statistical Services (GSS) found that 49.5% of Ghana's population was either severely or moderately food insecure.⁶⁹ This measurement is more than 5% off from the World Bank who claimed that moderate and severe food insecurity rates in Ghana stood at 43.8% in 2017.⁷⁰ In 2020 the World Bank claimed that moderate and severe food insecurity in Ghana was only at 36.6%, indicating a steady decrease from these 2017 levels.⁷¹ In comparison to other West African countries, Ghana is doing fairly well. Below is a graph that shows "The Prevalence of Moderate or Severe Food Insecurity in the Population"⁷² in West African countries in 2020.

⁶⁹ Sustainable Development Goals. (2022, November 14). *Indicator 2.1.2 prevalence of moderate or severe food insecurity in the population, based on the Food Insecurity Experience Scale (FIES)*. Sustainable Development Goals - 17 Goals to Transform our World. Retrieved December 3, 2022, from <https://sdgs-ghana.github.io/2-1-2/>

⁷⁰ The World Bank Group. (n.d.). *Prevalence of moderate or severe food insecurity in the population (%) - Ghana*. Data. Retrieved December 3, 2022, from <https://data.worldbank.org/indicator/SN.ITK.MSFI.ZS?locations=GH>

⁷¹ The World Bank Group

⁷² The World Bank Group. (n.d.). *Prevalence of moderate or severe food insecurity in the population (%) - Ghana, Nigeria, Benin, Togo, Burkina Faso, Cabo Verde, Sierra Leone, Guinea-Bissau, Senegal, Liberia, Mali, Niger, Gambia, the, Guinea, Cote d'Ivoire, Mauritania*. Data. Retrieved December 3, 2022, from <https://data.worldbank.org/indicator/SN.ITK.MSFI.ZS?end=2020&locations=GH-NG-BJ-TG-BF-CV-SL-GW-SN-LR-ML-NE-GM-GN-CI-MR&start=2015&view=chart>



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Of the 16 countries, Ghana follows behind Cape Verde in being the least food insecure West African country at 36.6% in 2020. The rest of countries range from 45.3% - 86.7% of prevalent food insecurity, the most food insecure being Sierra Leone at 86.7%. This means Ghana is not doing nearly half as bad as the worst country; however, more than a third of the population are facing food insecurity. This percentage is drastically different from that of Comprehensive Food Security and Vulnerability Analytics (CFSVA) researchers who found in their 2020 report that “food insecurity in Ghana stands at 11.7 percent, implying a food insecure population of 3.6 million people.”⁷⁴ This report based its findings on “67,140 household heads across 4,476 sample points or Enumeration Areas (EAs) from the 260 districts”⁷⁵ 5.2% are severely food insecure,

⁷³ The World Bank Group

⁷⁴ ReliefWeb. (2022, March 21). *Ghana - 2020 Comprehensive Food Security and Vulnerability Analysis (CFSVA) - ghana*. ReliefWeb. Retrieved December 3, 2022, from <https://reliefweb.int/report/ghana/ghana-2020-comprehensive-food-security-and-vulnerability-analysis-cfsva>

⁷⁵ ReliefWeb

while 6.5% are moderately food insecure. According to FAO, the prevalence of severe food insecurity in Ghana based on the population in 2020 is 5.6%; in 2022, that number increased to 7.2.⁷⁶ As of 2022, World Food Programme researchers claim that about 3.6 million people in Ghana are food insecure. In contrast the 2022 Annual Household Income and Expenditure Survey found that “49.1 percent of the Ghanaian population was food insecure in the first quarter of the year... The percentage however dropped by 7 percentage points to 42.1 percent in the second quarter”⁷⁷ Although these numbers are not consistent, it is important to note that different time periods and different measurement tools can uncover different findings. According to the World Food Programme “The 2020 CFSVA report is the most comprehensive food security assessment yet undertaken in Ghana by GSS and MoFA, with technical and financial support from WFP and FAO.”⁷⁸ Thus for the purpose of this research, I will primarily focus on the CFSVA’s research findings because of its thoroughness and the credibility of the sources that support it.

⁷⁶ The World Bank

⁷⁷ Dapaah, E. (2022, September 2). *Almost 50% of Ghana's population experiences food insecurity – GSS survey*. Citinewsroom. Retrieved December 3, 2022, from <https://citinewsroom.com/2022/09/almost-50-of-ghanas-population-experiences-food-insecurity-gss-survey/>

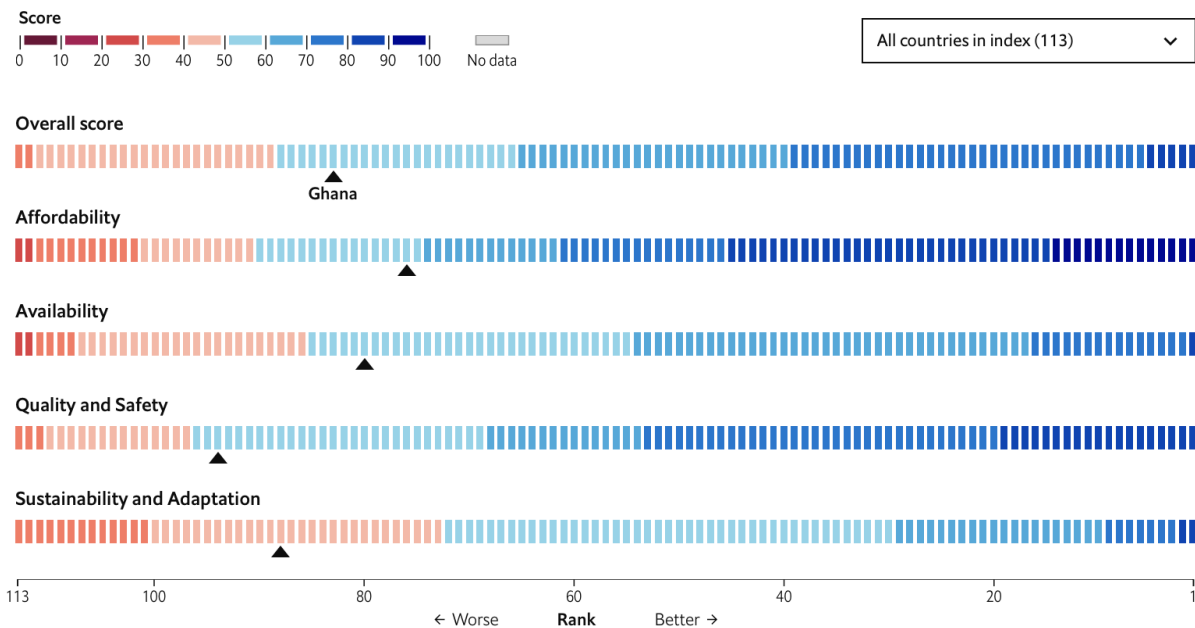
⁷⁸ World Food Programme. (n.d.). *2020 Comprehensive Food Security and vulnerability analysis*. UN World Food Programme. Retrieved December 4, 2022, from <https://www.wfp.org/publications/2020-comprehensive-food-security-and-vulnerability-analysis>

Based on the “Economist Impact,” Global Food Security Index has listed Ghana’s food security below.⁷⁹

Ghana

Sub-Saharan Africa | Lower middle income

4.1% Prevalence of undernourishment	14.2% Percentage of children stunted	12.6% Percentage of children underweight	9.7% Prevalence of Obesity	0.61 Human Development Index
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As a lower-middle income country, Ghana has an overall score 52.6% and is the 83rd country out of 113 in the Global Food Security Index as of 2022. While Ghana is in the blue bench mark, it is still barely halfway from having a 100% score, which would indicate the most food secure state with the strongest affordability, availability, quality, safety, and sustainability of food for its citizens. This graph indicates that Ghana has scores that place the country in a decent range, so

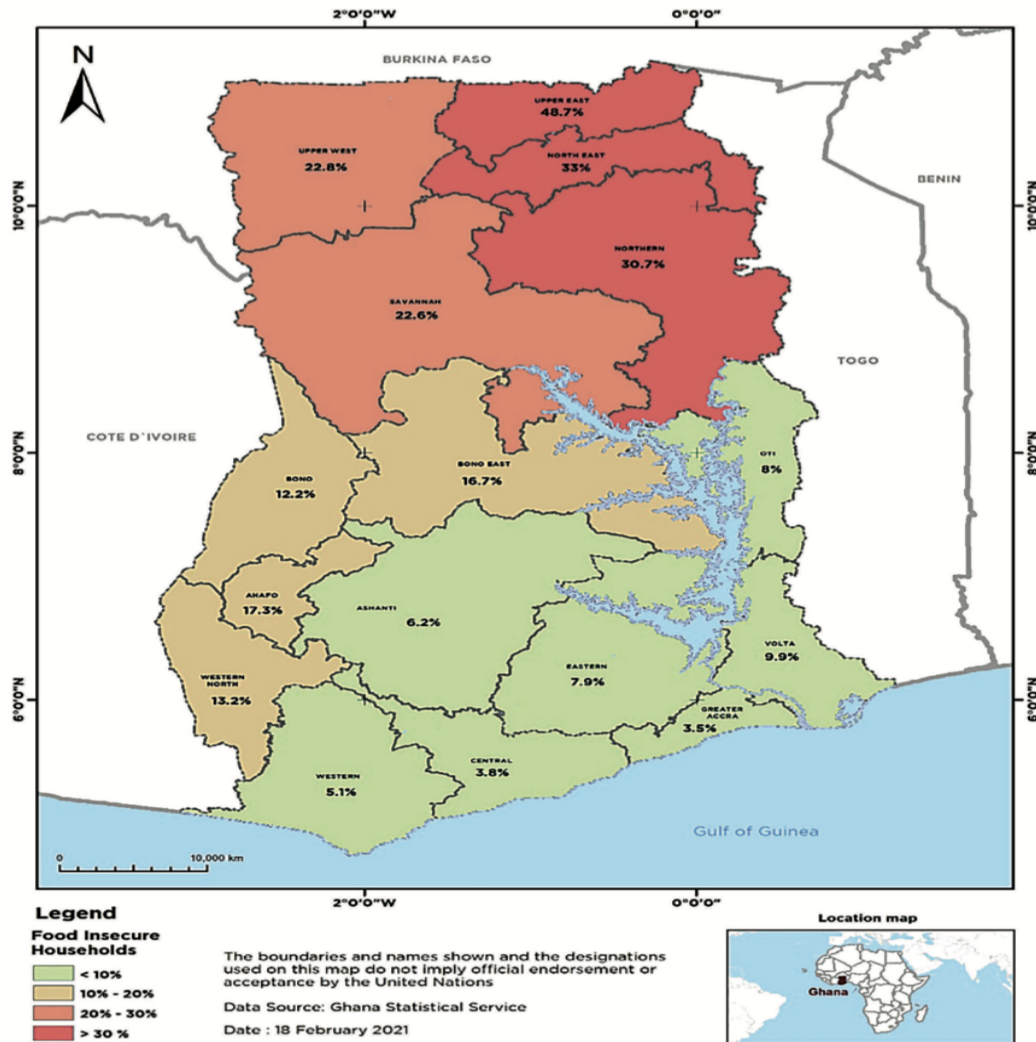
⁷⁹ The Economist Newspaper. (n.d.). *Global Food Security Index 2022*. The economist. Retrieved December 4, 2022, from <https://impact.economist.com/sustainability/project/food-security-index/explore-countries/ghana>

understanding how the country made it here is important, but there are outstanding improvements to be made to ensure nationwide food security..

Below are graphs from CFSVA Ghana research that highlighted impacts on food security in the nation from different aspects.

■ **Diagram 1a: National Food Security Status (Regional)**

FOOD INSECURITY SITUATION IN GHANA, BY REGIONS (2020)



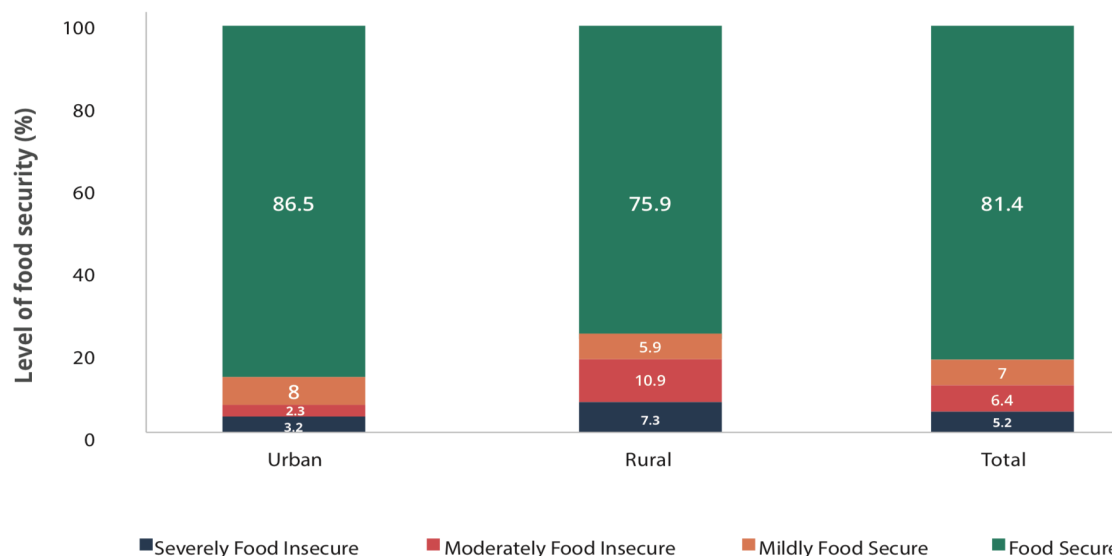
Source: CFSVA Survey 2020

⁸⁰ World Food Programme. (n.d.). *Comprehensive Food Security and Vulnerability Analysis (CFSVA) GHANA*. WFP. Retrieved December 4, 2022, from <https://docs.wfp.org/api/documents/WFP-0000137744/download/>

Region	Food Insecure Household (%)
Ahafo	17.3%
Ashanti	6.2%
Bono	12.2%
Bono East	16.7%
Central	3.8%
Eastern	7.9%
Greater Accra	3.5%
North East	33%
Northern	30.7%
Oti	8%
Savannah	22.6%
Upper East	48.7%
Upper West	22.8%
Western	5.1%
Western North	13.2%
Volta	9.9%

The northern part of Ghana is the more rural area and is the part of the country with three of the most food insecure cities (Upper East, North East, and Northern). The southern part of Ghana is the more urbanized region where food insecurity is at its lowest levels; for example, the capital of Ghana (Accra, Greater Accra) being only 3.5% insecure. Out of the 3.6 million people that are food insecure, “78 per cent, implying 2.8 million people are located in rural areas and 22 per cent

(0.8 million) in the urban areas.”⁸¹ Within the Ghanaian agricultural sector, these statistics show the effects of the struggle rural northerners have faced.



Source: CFSVA Survey 2020

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Within the rural/urban divide, there are more people who are moderately or severely food insecure in rural areas than there are in urban areas. The CFSVA has quantified their calculations of the range of food secure- severely food insecure using the Food Consumption Score (FCS) and the Wealth Index (WI). Below, the researchers have specifically defined each type of food insecurity:

- “Severely” food insecure - households with poor food consumption
- “Moderately” food insecure - households with borderline food consumption and in the two lowest (poorest) wealth quintiles

⁸¹ E. hope, K. (2022, July 1). *Ghana: 3.6 million are food insecure - GSS*. allAfrica.com. Retrieved December 4, 2022, from <https://allafrica.com/stories/202207010586.html#:~:text=According%20to%20GSS%2C%20food%20insecurity,million%20people%20are%20food%20insecure>

⁸² World Food Programme

- “Mildly” food insecure - households with borderline food consumption and in the three highest (wealthiest) quintiles
- “Food secure” – households with acceptable food consumption, irrespective⁸³

■ **Diagram 14: Prevalence of Food Insecurity, by Household Migration Status**



Source: 2020 CFSVA

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People migrate to rural areas and to urban areas primarily to find work (36%) or for education (21.5%). Other reasons people migrate are because of job transfers (13.2%), to own a business (11.4%), and marriage (9.3%).⁸⁵ Both rural migrant and nonmigrant households have the most food insecurity in Ghana with rural migrant households having only 74% of its population food secure, 4.2% mildly food secure, 14.7% moderately food insecure, and 7.1% severely food insecure. While rural non-migrant households have 76.1% of the population food secure, 6.2% are mildly food secure, 10.4% are moderately food insecure, and 7.3% are severely

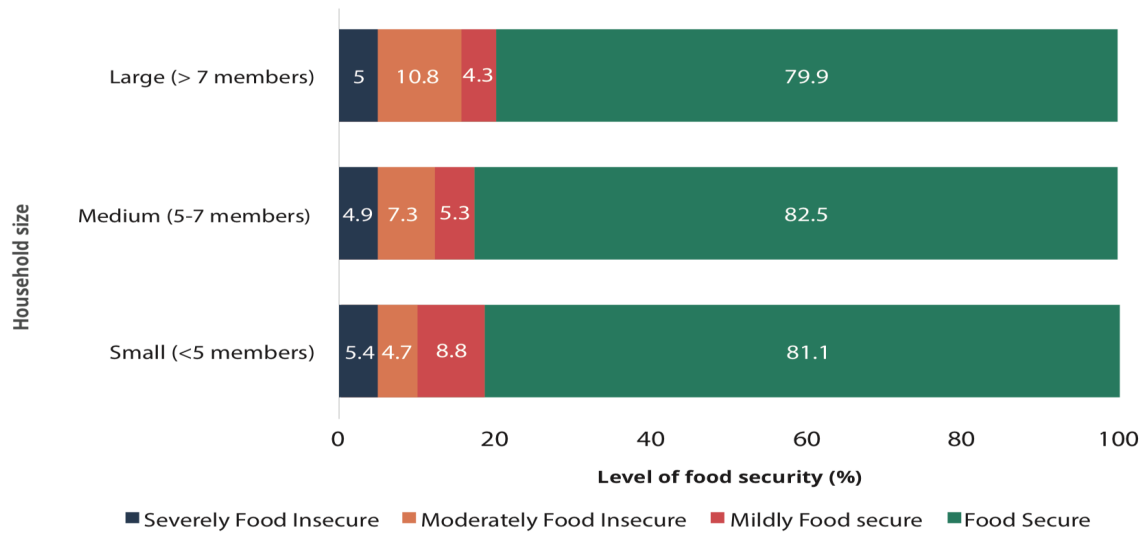
⁸³ World Food Programme

⁸⁴ World Food Programme

⁸⁵ World Food Programme

food insecure. Urban non-migrant households have the most food security at 86.6% but this population also has 8.1% of the population mildly food secure, 2.1% moderately food insecure, and 3.2% severely food insecure. This diagram shows that non-migrant communities in Ghana are better off than their migrant counterparts. This can be explained by familiarity with the land and thus better food systems to rely on. Rural households are also more food insecure than their urban counterparts. Along with that, the diagram shows that while people may be moving for job opportunities, it seems these people have not found work, or that their work is not paying them a sustainable income to survive.

■ **Diagram 12: Prevalence of Food Insecurity, by Household Size**

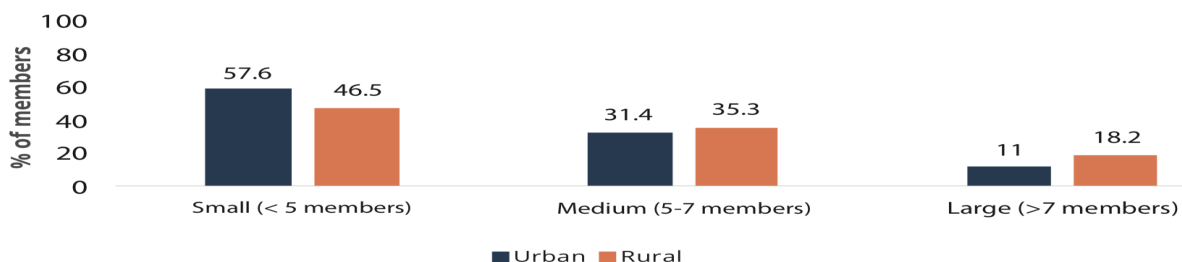


Medium sized families have the most food security at 82.5% while small families have the most severe food insecurity at 5.4%. Large families have the most food insecurity (combining both moderate and severe) at 15.8% of its population being food insecure compared to their counterparts of 12.2% in medium households and 10.1% in smaller households. There is a consistent range of food secure households amongst all the family sizes with a range of 1%

⁸⁶ World Food Programme

between the large, middle and small family sizes, but there is a disproportionate rate of people in larger families being food insecure, which is consistent with Diagram 13 below. More rural households have large household sizes, given the fact that in larger households more people are able to work the farms and fields.

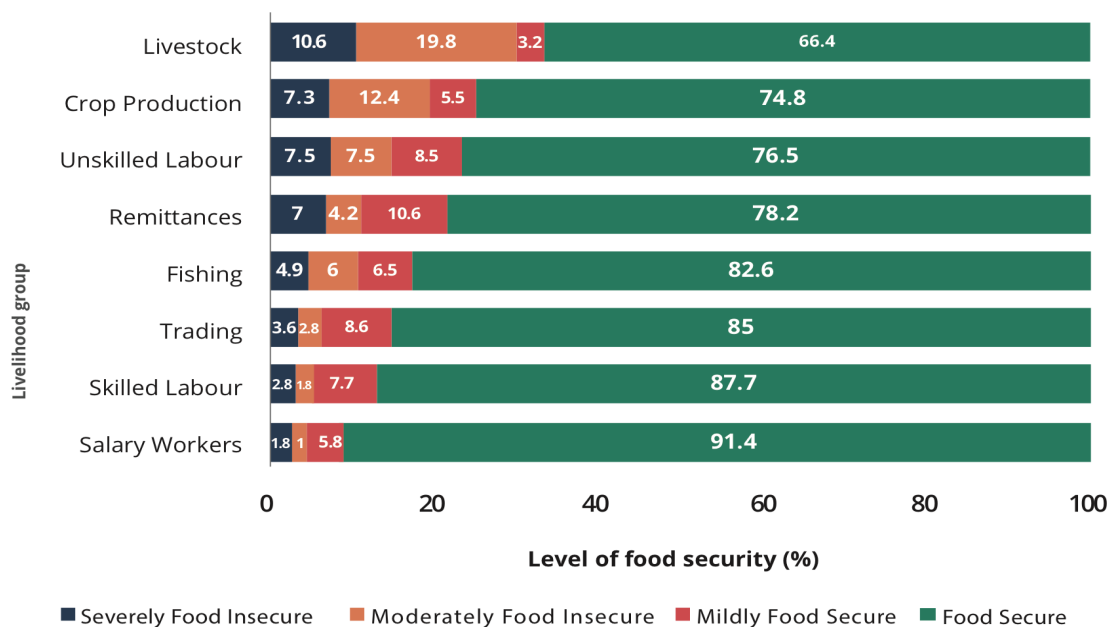
■ **Diagram 13: Household Size, by Residence**



Source: 2020 CFSVA

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■ **Diagram 11: Prevalence of Food Insecurity, by Livelihood Group**



Source: 2020 CFSVA

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The most food insecure groups are those who earn their livelihoods through livestock, with 30.4% of that population being either severely or moderately food insecure. This is followed by crop production at 19.7% food insecure and unskilled labor at 15%. The most food secure groups are salaried workers with 91.4% being food secure and only 2.8% being either severely or moderately food insecure. The second and third most food secure are skilled laborers at 87.7% food secure and traders at 85% food secure. Livestock workers are the most vulnerable because:

The outbreaks of Avian Influenza (AI) caused by the Highly Pathogenic Avian Influenza (HPAI) H5N1 strain ... cause further devastation of the local poultry industry in Ghana. Its actual outbreaks in the country in 2007 caused economic losses to the actors in the poultry value chain. As of 2013, some poultry farms that were affected by the HPAI are still closed down completely or downsized, long after the disease was effectively controlled in 2007 in the country.⁸⁹

According to the Veterinary Services Directorate in 2011, the northern region had the most poultry production system with a little over 77,000.⁹⁰ In research investigating 247 livestock farmers and determinants of food insecurity, researchers found that on average farmers had 31 cattles and “in a five-year recall period (2014–2018), the households experienced on average eight adverse events mainly including animal disease outbreaks, cattle theft, pasture shortages and conflicts with other land users that negatively affects their raising of cattle. On average, the cattle farming households lose five cattle each year.”⁹¹ Those who did not have support had worse food outcomes because they had nowhere else to turn to get out of the situation. If these livestock farmers lack safety nets, they have no other means of replenishing their livestock. This

⁸⁹ FAO. (2014). *Livestock Country Reviews - Food and Agriculture Organization*. FAO. Retrieved December 5, 2022, from <https://www.fao.org/3/i3663e/i3663e.pdf>

⁹⁰ FAO

⁹¹ Nuvey, F. S., Nortey, P. A., Addo, K. K., Addo-Lartey, A., Kreppel, K., Hounbedji, C. A., Dzansi, G., & Bonfoh, B. (2022, September 12). *Farm-related determinants of food insecurity among livestock dependent households in two agrarian districts with varying rainfall patterns in Ghana*. *Frontiers*. Retrieved December 4, 2022, from <https://www.frontiersin.org/articles/10.3389/fsufs.2022.743600/full>

means they have less access to not only the availability of money, but also less access to the availability of food (livestock).

Crop production usually occurs in rural areas typically because of the land mass required for the work. The success of both livestock and crop production is dependent on many external factors, including but not limited to: weather conditions, climate change, access to other materials required for production, and more. When these factors are not the most favorable, it leaves people in food insecure positions. According to researcher J. Songsore, “Rural food producing regions are also unable to feed themselves let alone provide surpluses to feed the urban population.”⁹² In comparison, salaried workers, who are more frequently employed in urban areas, have jobs that are less contingent upon uncertain external factors. For example, when people work in an office, their performance is what primarily determines whether or not they will continue to earn a living from that job. Their food insecurity tends to stem from issues of access. Some salaried workers are not paid enough. While the national minimum wage increased from GH¢13.53 to GH¢14.88, many Ghanaians remain unhappy because the wages are still drastically low. “According to the workers, the new increment was woefully inadequate and would worsen the existing plights of workers considering the rising cost of living, inflation and the cedi depreciation.”⁹³ Ghana is paying its citizens wages that would not allow people to have stronger food security. Along with that, due to the issue of poor agricultural infrastructure, Ghana imports a lot of its foods. “In 2021, Ghana imported about \$1.9 billion in agricultural and related product.”⁹⁴ Those who are salaried have imported food available to them. As noted, with

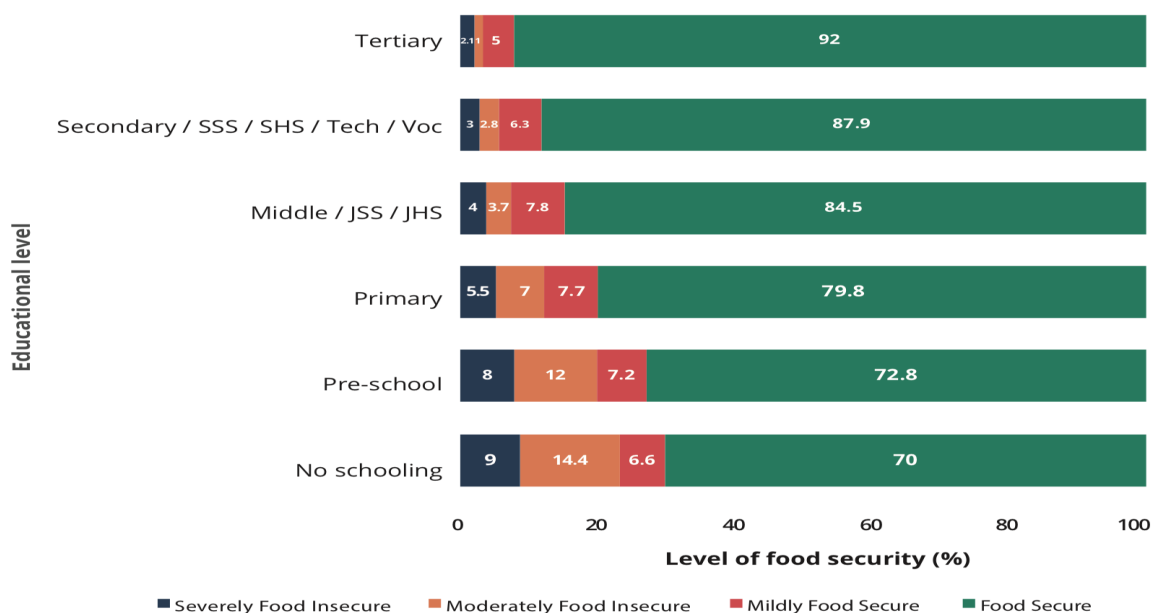
⁹² Songsore, J. (n.d.). *The urban transition in Ghana: Urbanization, National Development and ...* iied. Retrieved December 5, 2022, from <https://www.iied.org/sites/default/files/pdfs/migrate/G02540.pdf>

⁹³ Nyarko-Yirenkyi, A. (2022, November 18). *Ghana: Public-sector workers dissatisfied with 10 percent increase in minimum wage*. allAfrica.com. Retrieved December 4, 2022, from <https://allafrica.com/stories/202211180537.html>

⁹⁴ International Trade Administration U.S. Department of Commerce. (2022, July 7). *Ghana - Agricultural Sectors*. International Trade Administration | Trade.gov. Retrieved December 4, 2022, from

livestock and crop farmers, the failure of production will only allow imports to remain so high. “Food and agricultural imports will continue to grow as Ghana’s underdeveloped food processing sector is unable to meet increasing demand. Food imports mostly comprise bulk, intermediate, and consumer-oriented commodities such as rice, wheat, soybean meal, and poultry.”⁹⁵ High imports bridge the gap between the minimal domestic food production efforts of Ghana’s agriculture sector, but also harms domestic food production as it forces domestic producers to compete with international producers.

■ **Diagram 10: Prevalence of Food Insecurity, by Educational Level of Household Head**



Source: 2020 CFSVA

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Diagram 10 illustrates the correlation between education levels and food security. Households with heads that attended tertiary school had a 92% food security rate with a 3.1% food insecurity rate. Those who had no school have a 70% food security level and a 23.4% food insecurity rate,

<https://www.trade.gov/country-commercial-guides/ghana-agricultural-sectors#:~:text=In%202021%2C%20Ghana%20imported%20about.as%20the%20gateway%20to%20Africa>

⁹⁵ International Trade Administration U.S. Department of Commerce

⁹⁶ World Food Programme

almost seven times higher than those with the most education. Arguably, the more education a person receives, the more food secure they and their family will be. The reverse could also stand true. The more food security a person has the more education a person can aspire to attain in their lifetime. Researchers Rainer Mada and Gina Chowa, in a study titled “Household Food Insecurity and Educational Outcomes in School-Going Adolescents in Ghana,” found that “Household food insecurity was negatively associated with Math grade and school attendance. Food insecurity was also inversely associated with socio-emotional outcomes, including academic self-efficacy, commitment to school and academic aspirations and expectations.”⁹⁷

■ **Diagram 16: Prevalence of Food Insecurity, by Household Coping Strategy**



Source: 2020 CFSVA

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⁹⁷ Masa, R., & Chowa, G. (2020, July 27). *Household food insecurity and educational outcomes in school-going adolescents in Ghana: Public health nutrition*. Cambridge Core. Retrieved December 4, 2022, from <https://www.cambridge.org/core/journals/public-health-nutrition/article/household-food-insecurity-and-educational-outcomes-in-schoolgoing-adolescents-in-ghana/34126F6767D5848EE4DA8FBF3D80037B>

⁹⁸ World Food Programme

Finally, Diagram 16 analyzed Ghanaians' coping strategies for food insecurity. The three strategies are described below:

- ***Stress coping strategies*** are the mildest form of coping strategies, and may even be used by food secure households, with activities including borrowing money, spending savings, etc. The result of these activities is to reduce resilience to future shocks.
- ***Crisis coping strategies*** are a more severe form of coping strategies, involving activities such as selling productive assets, reducing expenditure on health and education, and withdrawal of children from school. The result of these activities is to directly reduce future productivity and income.
- ***Emergency coping strategies*** are the most extreme form of coping strategies, involving activities such as selling one's land, begging, and engagement in illegal income activities such as prostitution and theft. These activities undermine future productivity and income more extensively, and are the more difficult to reverse.⁹⁹

It seems that every group, regardless of security or insecurity, adopted some form of coping strategy. The no coping strategy group also has the most food secure members in the group at 82.6%; only 10.5% of food insecure Ghanaians have no coping strategy. This shows that people who are food secure typically do not need coping strategies to sustain themselves. On the other hand, 22% of the food insecure people in Ghana engage in emergency coping strategies. Food insecure people find that they need to take drastic measures in order to sustain themselves.

Arguably, this section exposes the need to find a more productive coping strategy for people. Almost 70% of food secure people have to participate in emergency coping strategies showing that being put in a situation where there is food inadequacy or insecurity can make those who currently have strong food systems participate in more criminal behaviors to sustain themselves.

These diagrams have shown how invasive food insecurity is to the people who face the issue. It has been shown that Ghanaians living in the country's more rural north, whose livelihoods typically depend on livestock and crop production, are the most food insecure. Rural citizens have been subjected to the worst conditions from historically being left out of national development plans by colonizers to having post-independence leaders pass legislation that

⁹⁹ World Food Programme

supports food access to urban areas on the backs of rural people. It leaves these rural people in positions where they either have to be insecure, find other drastic means of providing for themselves (i.e. stealing), or relocate to sustain themselves. Those who migrate to the rural areas tend to be more food insecure than those who do not as the rural area is the area with the most factors that encourage food insecurity, especially among larger families. Finally, those who do not have any schooling are also more prone to food insecurity. All of these factors are not only intertwined to characterize rural area people, but also show that food insecurity goes beyond having access to food and affects other aspects of survival.

This next section will carry out a comparative analysis on the causes of urban and rural food security and ways Ghana is implementing change or should implement change based on the resources and access each area has. I will look at the southern part of Ghana, specifically the Greater Accra area, and I will compare it to the northern part of Ghana, as it is more rural. .

Ghana: South

The southern part of Ghana (Greater Accra, Central, Western, Ashanti, Eastern, Western North, Ahafo, and Volta) has a total population of 22,589,206 people. Of this population “5.5 percent of Ghana’s urban population are food insecure, of which 3.2 percent are severely food insecure and 2.3 percent are moderately food insecure.” Urban parts of Ghana are predominantly in the south and therefore this paper will interchange “southern” and “urban”¹⁰⁰ This is the more food secure region of Ghana. Based on historical data of how colonial and post-colonial governments continuously poured support to southern areas, southerners are able to sustain themselves a lot easier.

Historically, migration from rural to urban areas was the main cause of urban population growth from around 1948 to 1960s. “This period coincided with the post-war economic boom

¹⁰⁰ World Food Programme

and the efforts by the new post-independence government from 1957 onwards to initiate a major urban industrial development and the provision of social infrastructure for the population using the urban places as the growth nodes.”¹⁰¹ Not only were people migrating within the country, but Africans outside of Ghana migrated to towns that had a large need for workers like mining companies and cocoa production. These urban areas became a hub for opportunities and work, which encouraged growing infrastructure, and ultimately became the more economically thriving region of Ghana.

In Ghana, “Key issues of interest regarding urban food security are adequacy and sustainability of food supply, food price and affordability, food safety and quality, vulnerabilities, and the capacity to mitigate them.”¹⁰² As noted in the section on *What is Food Insecurity*, these reasons align well with that research as food insecurity in Ghana seems to be an issue of availability (adequacy and sustainability of food supply) and access (food price and affordability and food safety and quality), while the capacity to mitigate these issues aligns with the section *How to Overcome Food Insecurity*.

In Accra, some of the major issues of food insecurity directly relate to how expensive food prices are. “Ghana remains a major importer of food products, with imports of agricultural and related products estimated to have reached \$1.9 billion in 2021. Food and agricultural imports will continue to grow as Ghana’s underdeveloped food processing sector is unable to meet increasing demand.”¹⁰³ In order to supplement the lack of domestic agricultural production, Ghana heavily relies on other countries to meet the country's food needs. This means that the price of food is also determined by those importers. Currently “Ghana is ranked 1st by the World

¹⁰¹ Songsore

¹⁰² Akparibo, R., Aryeetey, R. N. O., Asamane, E. A., Osei-Kwasi, H. A., Ioannou, E., Infield Solar, G., Cormie, V., Pereko, K. K., Amagloh, F. K., Caton, S. J., & Cecil, J. E. (2021, October 15). *Food security in Ghanaian urban cities: A scoping review of the literature*. *Nutrients*. Retrieved December 4, 2022, from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8540338/>

¹⁰³ International Trade Administration U.S. Department of Commerce

Bank with the highest food prices in Sub-Saharan Africa in 2022...food prices have since January 1, 2022, gone up by 22%.” Not only are they importing a large quantity of food, but the prices of these foods are extremely high. The need to import shows the dependence Ghana has on other countries. While dependence can be beneficial in some cases, the high prices Ghanaian citizens have to pay are evident of these shortcomings. These high prices affect people in urban areas more because the demand for food is higher in a region with a larger population.

Researchers Akparibo et. al. have found that “High population density and increased demand further exerts pressure on food supply systems, leading to increased food prices. Food prices and supply are, therefore, key issues for urban food security.”¹⁰⁴ In order to mitigate this Ghana has to work with local farmers to be able to improve their output. When Ghana does not rely on imports for food they will be able to have more control on the prices of the products. Increasing the amount of domestic food available to urban people could easily create less competition for buying food, decreasing the prices of food and making. Incurring less imports has the potential to make Ghanaian GDP higher allowing them to place more resources in making improvements elsewhere in the country.

Along with that, food insecurity thrives when there is not an assurance of food safety and quality. Food insecure people find themselves eating unhealthy because of how cheap the food is and thus are forced to abandon quality for quantity. “To be able to cope with food insecurity, urban-dwelling households may adopt less desirable, unhealthy, and unsustainable coping mechanisms such as purchasing food of lower quality or skipping meals.”¹⁰⁵ This directly impacts the health and safety of these Ghanaians. In most cases, low quality food can be harmful

¹⁰⁴ Akparibo, Aryeetey, Asamane, Osei-Kwasi, Ioannou, Infield Solar, Cormie, Pereko, Amagloh, Caton, & Cecil

¹⁰⁵ Akparibo, Aryeetey, Asamane, Osei-Kwasi, Ioannou, Infield Solar, Cormie, Pereko, Amagloh, Caton, & Cecil

to people's bodies, as typically these foods lack nutrients. In addition to this, an urban lifestyle also promotes unhealthy eating habits. "High-paced work routines that often characterise urban living, increase the likelihood of relying on prepared, processed, pre-packaged, and/or ready-to-eat foods. While these foods are convenient, they are often energy-dense and low in nutrients."¹⁰⁶ The Ghanaian government must make healthier food cheaper. This can be achieved through subsidizing local food shops that sell healthier food options. This would encourage people to eat healthier because options are now more convenient and affordable, thus improving food security. This situation is particularly unique to urban areas, as farmers rely heavily on their own crop production for sustainability.

Food insecurity is not only exacerbated by general conditions of high prices and convenience, but the way food is made also creates a problem of food safety, encouraging food insecurity. In a study focusing on different aspects of food security, researchers found that in Greater Accra, "street food vendors not compliant to safety standards. About 66% of proprietors surveyed did not obtain their meat supply from an approved source: suggestive of food safety issue."¹⁰⁷ While street vendors have cheaper food than traditional restaurants and supermarkets, the safety of these food places was not guaranteed, therefore the health of community members who are food insecure is not assured. This lack of safety in food can lead to other health problems which can be negatively exacerbated by poverty. "In the Volta and the Greater Accra regions, cleanliness of the local surroundings, where food is sold, and the hygienic nature of the food handler, plays a key role in consumer choice of food access."¹⁰⁸ In an effort to improve the access to healthy food options and to better support street vendors, researchers have found that

¹⁰⁶ Akparibo, Aryeetey, Asamane, Osei-Kwasi, Ioannou, Infield Solar, Cormie, Pereko, Amagloh, Caton, & Cecil

¹⁰⁷ Akparibo, Aryeetey, Asamane, Osei-Kwasi, Ioannou, Infield Solar, Cormie, Pereko, Amagloh, Caton, & Cecil

¹⁰⁸ Akparibo, Aryeetey, Asamane, Osei-Kwasi, Ioannou, Infield Solar, Cormie, Pereko, Amagloh, Caton, & Cecil

“Street food vendor training should be prioritized to improve the safety of street food... Steps should be taken to improve street food stall operating conditions and facilities, including providing clean protected structures, access to potable water, and efficient waste collection and disposal systems.”¹⁰⁹ In 2000, researchers found that “among households in the lowest expenditure quintile in Accra, 39% of the total food budget went to purchasing snacks and meals away from home.”¹¹⁰ This means almost three days out of the week people are getting all their meals from street vendors. Given this heavy reliance upon street food, the Ghanaian government should take an active role in providing some of the basic necessities street vendors need to have cleaner spaces to cook. This would not only improve food for buyers, but it would also improve sales for vendors because they are able to sustain better cooking environments, encouraging better food through better preparations.

Poverty plays a really integral role in food access and arguably these two concepts go hand in hand. Food is least accessible to those who are poor. Without the security of having sustainable food, it is difficult for people to build an income, while it is also important to recognize that without a means to buy the food, food can not be obtained.

In the Greater Accra region, studies reported that limited food supply was observed in low-income households... it was revealed that due to high prices of raw foods or their processing cost mothers of low socioeconomic status were unable to acquire/process baby weaning foods, e.g., weanimix—a nutritional meal designed for children who are newly weaned from breast milk—for their newly weaned babies.¹¹¹

¹⁰⁹ Ma, L., Chen, H., Yan, H., Wu, L., & Zhang, W. (2019, August 16). *Food Safety Knowledge, attitudes, and behavior of street food vendors and consumers in Handan, a third tier city in China - BMC public health*. BioMed Central. Retrieved December 4, 2022, from <https://bmcpublihealth.biomedcentral.com/articles/10.1186/s12889-019-7475-9>

¹¹⁰ Marras, S., & Bendeck, M. (2016, May). *Street food in urban Ghana - researchgate*. STREET FOOD IN URBAN GHANA A desktop review and analysis of findings and recommendations from existing literature. Retrieved December 5, 2022, from https://www.researchgate.net/publication/305687585_STREET_FOOD_IN_URBAN_GHANA_A_desktop_review_and_analysis_of_findings_and_recommendations_from_existing_literature

¹¹¹ Akparibo, Aryeetey, Asamane, Osei-Kwasi, Ioannou, Infield Solar, Cormie, Pereko, Amagloh, Caton, & Cecil

Issues of poverty directly affect not only food access, but development of children's health and wellbeing. As seen in the research study above, mothers in low-income households find it difficult to get access to foods required for their child's development. Children need vital nutrients in order to develop healthily, which they obtain through nutritious foods. When families do not have access to these nutritional resources it becomes difficult for these children to develop their health.

In a study conducted to determine how urban transition is affecting household-level urban food security, researchers used information from a survey of low and middle income residents of Accra to determine food insecurity within the home. The research determined that:

“The effects of food insecurity are felt across all age groups, although young children, and women of reproductive age experience the most challenging effects of food insecurity... it is becoming increasingly realized that urban dwellers, especially the most economically vulnerable population groups (including those living in slums), have specific challenges to food access, quality, and safety, in ways that increase their vulnerability to becoming food insecure and ultimately experiencing malnutrition”¹¹²

While people are moving into these urban areas with the goal of obtaining better lives, they are unfortunately still facing food insecurity. The act of relocating does not put a stop to the issues people might be facing; rather, these issues may follow them as they migrate. In order to be able to tackle food insecurity for urban dwellers and those who migrate to urban areas, it is important to understand what the shortcomings of food insecurity stem from. Southerners, and specifically urban dwellers, seem to have issues of access. While food is available to purchase, urban poor people do not have enough money to make the purchases. These are the main causes of food insecurity in urban areas and what needs to be addressed to make Ghana more food secure for more people.

¹¹² Akparibo, Aryeetey, Asamane, Osei-Kwasi, Ioannou, Infield Solar, Cormie, Pereko, Amagloh, Caton, & Cecil

Ghana: North

The northern part of Ghana (North East, Northern, Savannah, Upper East, and Upper West) has 5,303,622 people. Of these people, “18.2 percent of Ghana’s rural population are food insecure, of which 7.3 percent are severely food insecure and 10.9 percent are moderately food insecure.”¹¹³ The rural areas are generally located in the northern areas, so for the purpose of this paper the term “northern” and “rural” will be used interchangeably. This research found that almost 20% of the northern population are food insecure. This is far higher than the “5.5 percent of Ghana’s urban population are food insecure”¹¹⁴ The north is nearly four times more food insecure than their southern counterpart. This disproportion in food insecurity between the north and south is based on issues of both availability and access.

Arguably, the north was never set up to have a flourishing economy like the south and thus was predisposed to being the poorer part of Ghana and the more food insecure. In order to better understand why, it is important to take a look at the history of Ghana. In the late 19th century, the British colonized Ghana, formerly known as the Gold Coast, and took their natural resources to make their nation richer. The colonizers found that the north did not have the resources that they wanted, namely gold, that the south did. Along with that, the south had sea access making it easier to export goods. In order to transport the natural resources, southerners had the British develop road systems that would connect their gold mining cities to the ports of southernmost Ghana. As colonists continued to exploit Ghana’s riches, the south became more developed. “In 1901 the north had no school or hospital. The south had 125 schools and eight places with at least one hospital. By 1931 the number of schools in the south had risen to 325 and places with hospitals to 24. But the number of schools in the north had only doubled to eight, and

¹¹³ World Food Programme

¹¹⁴ World Food Programme

only six places had at least one hospital.”¹¹⁵ The parts of the north that did have colonial rule and leadership also saw improvements of the standards of living through education, health, and infrastructural developments. In that time, “areas closer to the locations of colonial investments in the north are more developed today than other areas in the north.”¹¹⁶ Colonization exacerbated the disparities between the north and the south, while also accelerating growth and improved quality of life wherever the colonizers invested. The effects of southern development and the lack of northern employment and development encouraged northern Ghanaians to move down to the southern part to find work, which provided the colonists cheap labor and increased the population in the south. “In addition, the provision of incentives for appropriate agricultural production was lacking in the north and other areas of the colony. The policies of the colonialist [in the North] ranged from forced labour migration, obstructing educational advancement, neglecting the development of infrastructure and that of agricultural resources of the area.”¹¹⁷ So not only did the colonists intentionally develop the south, but they also intentionally left the north underdeveloped.

When the colonists left, Ghana attempted to develop the northern part through private sector led programs. For example “The Upper Regional Agricultural Development Project” (URADEP) relied on the philosophy that the rural is an untapped talent, which has been left out of the mainstream of development. URADEP and the Tono Irrigation project are the most important and well-funded projects in the district’s history.”¹¹⁸ Although these projects had a

¹¹⁵ Kambala, I. M. (2022, October 5). *Northern Ghana is underdeveloped because of underinvestment during colonial rule, not geography*. The Conversation. Retrieved December 4, 2022, from <https://theconversation.com/northern-ghana-is-underdeveloped-because-of-underinvestment-during-colonial-rule-not-geography-190795>

¹¹⁶ Kambala

¹¹⁷ Hesselberg, J., & Yaro, J. A. (2006, October 27). *An assessment of the extent and causes of food insecurity in northern Ghana using a livelihood vulnerability framework - geojournal*. SpringerLink. Retrieved December 4, 2022, from <https://link.springer.com/article/10.1007/s10708-006-9007-2>

¹¹⁸ Hesselberg, & Yaro

solid theory of improving irrigation to improve agricultural practices, the government did not give enough access to all of the farmers that needed it. Researchers Jan Hesselberg and Joseph A. Yaro found that:

The promised change from a traditional subsistence farming system to a commercial cutting-edge technological system was never to be witnessed on any appreciable scale. The drive for maximum efficiency in the quest for profit, worsened the agrarian crisis by skewing the distribution of resources such as land, credit, and other inputs in favour of wealthier landed rural farmers or urban absentee landlords.¹¹⁹

The government talked about implementing programs, but fell very short of prioritizing the people most in need. The program benefited already established farmers and urban people. This is an issue of both access and availability as the Ghanaian government did not provide the resources that would improve food availability for rural areas, which would also inherently improve access to food in the north. Essentially, there needs to be food available for people to have access to it.

Along with that, “Structural adjustment policies supported mainly export-based agriculture. The north of Ghana was left out. Expensive input prices resulting from removal of subsidies and poor extension services, exacerbated by poor weather in the 1990s, led to declining output in the face of favourable prices of staple crops.”¹²⁰ Crops that were originally subsidized became expensive to grow because of the removal of the subsidies by the government. This was another effort to improve the urban economy, as export-based agriculture focuses on production in mass for profit instead of sustenance. Small farmers produced food for both local profit and sustenance. Along with that, weather conditions were unfavorable to the growth of these crops and thus made it difficult for rural farmers to have crops available to them. All of these factors contributed to the hardship that the north is experiencing today.

¹¹⁹ Hesselberg, & Yaro

¹²⁰ Hesselberg, & Yaro

Today, these northern regions still mainly rely on crop production and farming for economic growth. “90% of Ghanaian households depend on agriculture for their livelihoods”¹²¹ A big part of northerners’ food insecurity ties to the success of farm production or the lack thereof. In the north “wildfires — caused by hunting, slash-and-burn farming and charcoal production — ravage forests and threaten local livelihoods every year.”¹²² Additionally, “Food insecurity in Ghana is more severe in the north of the country largely due to climatic issues. This region only has one rainy season in comparison to the south, which has two rainy seasons.”¹²³ Climate plays a big role in availability here, as the rainy season provides natural water to crops. The north only having one rainy season means that for the rest of year, the land is hot and dry, which is not conducive to growing water-intensive crops in Ghana. This makes it difficult for small scale farmers to sustain themselves. Natural disasters and climate issues negatively impact the production and growth of crops, which in turn affects the availability of crops in Ghana as well. For these reasons, farmers are left in positions where they do not have crops for a season or can not grow their crops on the land, which promotes being unable to sustain their livelihoods and encourages the expansion of food insecurity.

The International Food Policy Research Institute (IFPRI) team found that “farmers in north Ghana have very low adoption of basic agronomic practices such as row planting, fertilizer micro-dosing, cereal-legume intercropping, and use of improved inputs such as inorganic fertilizers and pesticides that are proven to enhance productivity, resource use efficiency, and soil fertility.”¹²⁴ The IFPRI findings are consistent with the history of the north and the failure of

¹²¹ Philipp

¹²² Ding, Anderson, & Cristales

¹²³ Philipp

¹²⁴ Africa RISING. (2022, August 22). *How does access to agricultural markets relate to yield, food security, and poverty in northern Ghana?* Africa RISING. Retrieved December 4, 2022, from <https://africa-rising.net/how-does-access-to-agricultural-markets-relate-to-yield-food-security-and-poverty-in-northern-ghana/>

programs designed to help the agriculture sector in the north. Northerners are not using practices that would make farming easier for them. While some of that is due to them not knowing about the practices that can induce production, the other part is due to the unaffordability of these practices. These rural farmers do not have the means to try non-traditional agricultural practices, especially if they do not know how well these practices will actually work. Along with that the IFPRI also found that food insecurity in the north is due to “Increasingly unpredictable weather, low yields, and poor access to input markets and agricultural advisory services.”¹²⁵ Once again, all of these factors are consistent with the findings in this section. Northerners struggle with food security because of issues primarily of availability.

Farmers and other agriculture workers are very limited in the funds they have to buy more technology to help them sustain their work. “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.” Agriculturalists also do not have access to institutions that could loan them money to be able to keep up with other financial hardships, but “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.”¹²⁶ As noted, food security ties directly to having the resources to buy foods, but those who own farmlands are not only limited in how they can produce, but also limited in how they can distribute, which

¹²⁵ INTERNATIONAL FOOD POLICY RESEARCH INSTITUTE. (n.d.). *AFRICA RESEARCH IN SUSTAINABLE INTENSIFICATION FOR THE NEXT GENERATION (AFRICA RISING)*. Ifpri.org. Retrieved December 4, 2022, from

<https://www.ifpri.org/project/africa-research-sustainable-intensification-next-generation-africa-rising>

¹²⁶ Darfour, B., & Rosentrater, K. A. (1970, January 1). *Agriculture and Food Security in Ghana*. ASABE Technical Information Library. Retrieved December 4, 2022, from <https://elibrary.asabe.org/abstract.asp?aid=47207>

drastically hinders the way they can sustain themselves. There needs to be assistance for these farmers in the growth and distribution of their agriculture.

Overall, through colonization and legislation, the disparities between the north and the south have spreaded the regions very far apart. The development of the urban areas came at the direct expense of the rural areas. While the wealth of urban societies were being built and improving the lives of most urbanites, it left rural Ghanaians out. This has made food insecurity in Ghana very specific to subgroups of the population who have challenges with both availability and access. While poor rural farmers struggle with weather, lack of understanding how to use time saving farming instruments, and inadequate financial resources to invest in their own improvement; the city's poor folks struggle with the high costs of food and the effects of access to only low-quality processed food. Arguably the people in urban areas who are the most poor come from poor rural areas in search of work, showing that the issue of food insecurity is dire in northern Ghana and thus needs to be addressed. Solutions for the north can directly impact that of the south as having more access to a sustainable livelihood would increase food security, decreasing the need to leave the north for more opportunities. Less people coming in to the south would make for less competition for accessing food, encouraging more people to have access to affordable food. Finally, better support for infrastructural development in the south pertaining to food vendors' necessary resources (i.e. sink with clean water readily available, electricity for food heaters) could directly affect the cleanliness and health of food production. There needs to be direct action taken to improve availability for northerners and access for southerners.

What Ghana has done to Address Food Insecurity

The government of Ghana has a number of programs that they have created in order to address food insecurity. These programs tackle different aspects of food insecurity from availability to access, to poverty reduction, and even to education. From 2003-2005 they had their first Ghana Poverty Reduction Strategy (GPRSI) which had a goal of modernizing rural areas through agriculture. Then in 2006-2009 Ghana had another plan, GPRS II.

The Growth and Poverty Reduction Strategy (GPRS II), 2006-2009, and its sequel the Ghana Shared Growth and Development Agenda I (GSGDA), 2010-2013, agriculture is expected to lead the growth and structural transformation of the economy and maximize the benefits of accelerated growth. GRPS II recognized that no significant progress can be made in raising the average real incomes of Ghanaians as a whole without significant improvements in the productivity of the agriculture sector and agro-based/processing industry.¹²⁷

The first few development plans were set with specific timelines in an effort to have goals that meet the immediate needs of the people. The government continued to build on the goals at the end of each plan's life span. GSGDA specifically focused on improving the agricultural sector in order to improve the structure of the economy. In improving the agricultural sector there will also be a focus on food security improvement. The vision for the agriculture sector to create “a modernised agriculture culminating in a structurally transformed economy and evident in food security, employment opportunities and reduced poverty”¹²⁸ Below is a graph of the impact of the program on GDP.

¹²⁷ FAO. (2011, January 1). *Fao.org*. FAO.org : Retrieved December 4, 2022, from <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC144958/>

¹²⁸ FAO

Table 1 : Share of Agriculture in Gross Domestic Product: 2000-2008

Year	Sector, (%)			
	Agriculture	Industry	Services	Other (Net Indirect Taxes)
2000	39.6	27.8	32.7	**
2001	39.6	27.4	33.0	**
2002	39.8	27.4	33.0	**
2003	38.8	24.9	29.8	6.5
2004	40.3	24.7	29.9	5.1
2005	39.5	25.1	30.0	5.4
2006	39.3	25.9	30.0	4.8
2007	38.0	25.7	31.2	5.1
2008	33.6	25.9	31.8	8.7
Average Sectoral shares in GDP (2000 – 2008)	38.7	26.1	31.3	5.9

Source: Ghana Statistical Service (GSS), 2008

¹²⁹ From 2000 to 2008 the agricultural sector remained in the range of 33%-41% fluctuating a lot through the years. In 2008 the agricultural sector GDP was the smallest indicating that this program had minimal improvements on the sector. The overall GDP going down shows that this program needed some adjustments to make the impact it was intended to make. This program broadly mentions the benefits it will have, but does not get into the specifics. Better agriculture leads to a ripple effect of building other stronger social systems including food security. As noted in the *Ghana: North* section issues that farmers face are climate, legislation, and financially

¹²⁹ MINISTRY OF FOOD AND AGRICULTURE. (n.d.). *Ministry of Finance and Economic Planning. MEDIUM TERM EXPENDITURE FRAMEWORK (MTEF) FOR 2022 - 2025*. Retrieved December 5, 2022, from <https://mofep.gov.gh/sites/default/files/pbb-estimates/2022/2022-PBB-MOFA.pdf>

related and thus the improvements need to focus on these sectors. These programs need to be better in specifying the way it will improve the productivity of the agro sector.

In 2005, Ghana also created The Ghana School Feeding Programme (GSFP) to help tackle food insecurity in school aged children, encourage school enrollment and retention, and increase production of food domestically. In the beginning the program was focused on 10 schools covering about 1,900 beneficiaries. Over the years the program's beneficiaries steadily increased to 230,000 students in 2006 and 1,671,777 beneficiaries between 2016/2017. The program also provided about 24,000 caters with a job. Overall, "The GSFP provides pupils in public primary and kindergarten schools in the deprived communities with one hot, nutritionally adequate meal per each school going day, using locally grown foodstuff, aimed at achieving the goals of the programme, which seeks to eradicate hunger, poverty and malnutrition."¹³⁰ The program really aimed to support schools and students most vulnerable to food insecurity. Some of the requirements for the program's school selection are below:

- Low school enrolment, attendance, and retention, especially for girls.
- Drop-out rates.
- Low literacy levels.
- High hunger and vulnerability status.
- Poor access to potable water.
- High communal spirit/or community management capability.
- The willingness of the community to put up basic infrastructure (e.g. Kitchen, storeroom, latrines) and to contribute in cash or kind.
- Communities/ schools not already covered by other feeding programmes¹³¹

The continuous expansion of the program is evident of the success of the program. It is currently still running with the plans of more expansion. It is directly tackling food insecurity while also improving other aspects of development in the community. In highlighting what the success of

¹³⁰ Dunaev, A., & Corona, F. (n.d.). *World Food Programme*. School Feeding in Ghana INVESTMENT CASE: COST-BENEFIT ANALYSIS REPORT. Retrieved December 5, 2022, from <https://docs.wfp.org/api/documents/WFP-0000108072/download/>

¹³¹ Dunaev & Corona

the program has been it is also important to highlight parts in which the program needs to improve. In a nutritional survey conducted by WFP volunteers on the GSFP asking 17 schools (10 in the northern region) how beneficiaries feel about the program they found that:

The quality and quantity of school meals served were not always adequate and, in some cases, did not meet the attaining of the proposed 30 percent Recommended Daily Allowance (RDA). General lack of protein was observed together with a higher than the prescribed quantity of oil in the meals served. Rations were not according to age and caterers were not paid on time among others. In addition, the hygiene condition and cost management were highlighted as an issue.¹³²

While this program is rapidly growing, “from the 3.4 million to the projected four million beneficiaries in 2022”¹³³ it is important to ensure that the quality of the program is not compromised. Beneficiaries deserve to have adequate, sustainable, healthy, and accessible food available to them. In order to ensure this the government must work with caterers to make sure their needs are met in order to improve the quality of the food. This includes paying them on time, paying them enough to be able to provide bigger portions, providing clean environments to cook in to ensure hygiene is upheld, having more than one catering company cook for the children, so the brunt is not placed on a few individuals, and finally having a system where beneficiaries and providers can explain what is working and what needs improvement.

In 2007 the Ministry of Food and Agriculture (MOFA) created the Food and Agriculture Sector Development Policy (FASDEP II). Some of the objectives this plan included are below:

- Food security and emergency preparedness
- Increased growth in incomes

¹³² Dunaev & Corona

¹³³ Segbefia, S. (2021, December 16). *School feeding grant still GH¢1 per plate*. The Business & Financial Times. Retrieved December 4, 2022, from <https://thebftonline.com/2021/12/16/school-feeding-grant-still-gh%C2%A21-per-plate/>

- Increased competitiveness and enhanced integration into domestic and international markets
- Sustainable management of land and environment
- Science and technology applied in food and agriculture development improved institutional coordination¹³⁴

These objectives mirror the prescriptions from earlier chapters. Sustainable management of land is a solution to food insecurity as it is a solution to many issues of availability. “The project reached 1,882,645 beneficiaries, 51% of them women. FASDEP reduced rural household poverty, food insecurity, and malnutrition through increased agricultural production and productivity and commercialization opportunities.”¹³⁵ Below are some outcome indicators of more recent years to see the impact this program has made.

4. POLICY OUTCOME INDICATORS AND TARGETS

Outcome Indicator Description	Unit of Measurement	Baseline		Latest Status		Target	
		Year	Value	Year	Value	Year	Value
Share of Agriculture in GDP	Percentage	2016	22.6	2020	19.1	2025	25.0
Self-sufficiency in key staples under PFJ							
<i>Maize</i>	(%)	2017	98	2020	99.77	2025	100
<i>Rice</i>	(%)	2017	44	2020	51.04	2025	100
<i>Sorghum</i>	(%)	2017	100	2020	100	2025	100
Yields of vegetables under greenhouses							
<i>Cucumber</i>	mt/ha	2019	50	2021	95	2025	100
<i>Bell Pepper</i>	mt/ha	2019	50	2021	50	2025	70
<i>Tomato</i>	mt/ha	2019	70	2021	75	2025	95
<i>Sweet Melon</i>	mt/ha	2019	85	2021	125	2025	130
Fertilizer application rate	kg/ha	2016	8	2021	20	2025	50

¹³⁴ FAO

¹³⁵ Nyangado, A. (2022, October 6). *Ministry of Agriculture, Nature and Food Quality*. Government.nl. Retrieved December 5, 2022, from <https://www.government.nl/ministries/ministry-of-agriculture-nature-and-food-quality>

Agric. Extension Agent/ farmer ratio (Ratio of the total extension officers to total farmer population)	Ratio	2016	1:1,908	2021	1:706	2025	1:500
Access to Irrigation facilities (Area developed under formal irrigation)	Hectare (Ha)	2017	12,003	2021	16,909	2025	41,284
Irrigated Land use efficiency (Land intensification ratio)	Ratio	2017	1.78	2021	1.5	2025	1.8
National Meat production	Metric tons (MT)	2017	164,124	2021	513,040	2025	1,181,924
Access to Mechanization Services (No. of individuals/enterprises supported to provide mechanization services) AMSEC or what?	Number	2017	300	2021	200	2025	300

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MOFA's policies have a mix of results. The GDP went from 22.6 to 19.1, the access to mechanization went down from 300 to 200, and irrigated land use efficiency went down from 1.78 to 1.5. While every other section improved. These policies' results compare more positively to the results of the GSGDA policies as it has more specific approaches in measuring agricultural development, but in order to meet the 2025 goals the policy still has some way to go. In order to bridge the gap, the policy should focus on improving the mechanization of land use as it can also improve irrigation efficiency, improving overall GDP and providing stronger food availability to farmers overall. For example, the government can prioritize growth in incomes by subsidizing crops farmers grow or providing them tools for more land irrigation and technologically

enhancing their farms. Overall, this policy is making a positive impacts on Ghanaian agriculturalist, but should work to fix these specific

In 2018, Ghana launched the Ghana Productive Safety Net Project (GPSNP) which “provides tailored support to the poorest households in Ghana to address the demand-side constraints to accessing services that would strengthen their productivity.”¹³⁷ \$60 million dollars have been contributed to this program in an effort to provide a safety net for Ghanaians most in need. The program is under the supervision of the Ministry of Gender, Children and Social Protection and the Ministry of Local Government, Decentralization and Rural Development. Both of these ministries work for people who may fall under the prospective recipients of the program. GPSNP supports two other programs: the Livelihood Empowerment Against Poverty (LEAP) and the Labor-intensive Public Works (LIPW). LEAP “provides cash transfers to 335,000 poor households (approximately 1.5 million individuals)” having met the following criterias: over 65 with no support, an orphan, disabled without the capacity to work, or being pregnant and children while extremely poor. While, LIPW “provides seasonal short-term employment to the poor, while creating assets for the wellbeing of their communities; and the Productive Inclusion activities to improve the productivity of the poor by offering them support towards establishing sustainable income generating activities.”¹³⁸ Similarly to the LEAP program the LIPW focuses on people in poverty, the community feels this need, and priority goes to LEAP beneficiaries. This directly helps poor people have access to an income they can use to get food. While this project is not sustainable for food security, it serves a short term temporary fix, which in some cases can help people get on their feet. The other components of GPSNP includes: Production Inclusion, Social Protection Systems Strengthening, and Project

¹³⁷ The World Bank. (n.d.). *Home*. About the Project - Ghana Productive Safety Net Project. Retrieved December 4, 2022, from <http://mlgrd.gov.gh/gpsnp/index.php/about-the-project>

¹³⁸ The World Bank

Management Coordination, and Capacity Building. Production inclusion directly connects with food security as it focuses on linking agricultural workers to support and encourages having livelihood that complements agricultural work and asset support, which is highlighted by the Complementary Livelihood and Asset Support Scheme (CLASS). Social protection specifically focuses on increasing national household registry “which aims to improve social protection targeting by providing data on poor and non-poor households, management information and electronic payments systems across all the GPSNP programs to track progress and foster financial inclusion among beneficiaries, as well as promote accountability.”¹³⁹ This will help the Ghanaian government keep track of what households are receiving in terms of support and what they still are lacking. It makes the government more aware of the issues of food insecurity, which will urge them to find specified solutions for the issue. These programs are not location specific rather their overall criterias require people to be in desperate need to be able to qualify. There is evidence of impact, FAO conducted research “In 2012 on cash transfer programmes in seven African countries including Ghana. This study also known as the Transfer Project found a positive impact of LEAP on its beneficiary households as well as the local economies.”¹⁴⁰ Overall, these policies have some benefits to the Ghanaian communities.

The World Food Program (WFP) focuses on four key areas to fight food insecurity in Ghana which are listed below:

1. Private Sector Collaboration.
2. Nutritional Assistance.
3. Food System Resilience.

¹³⁹ The World Bank

¹⁴⁰ LIVELIHOOD EMPOWERMENT AGAINST POVERTY. (n.d.). *Background – Livelihood Empowerment Against Poverty - MOGCSP*. LEAP. Retrieved December 5, 2022, from <https://leap.mogcsp.gov.gh/about-us/background/>

4. Policy-Making Assistance and Capacity Expansion. ¹⁴¹

In private sector collaboration the WFP partners with local organizations to reduce malnutrition.

“WFP has been present in Ghana since 1963 and is assisting the government with an integrated food security and nutrition program. This program involves the private sector and aims to reduce malnutrition, improve the country’s food systems and strengthen social protection programs.”¹⁴²

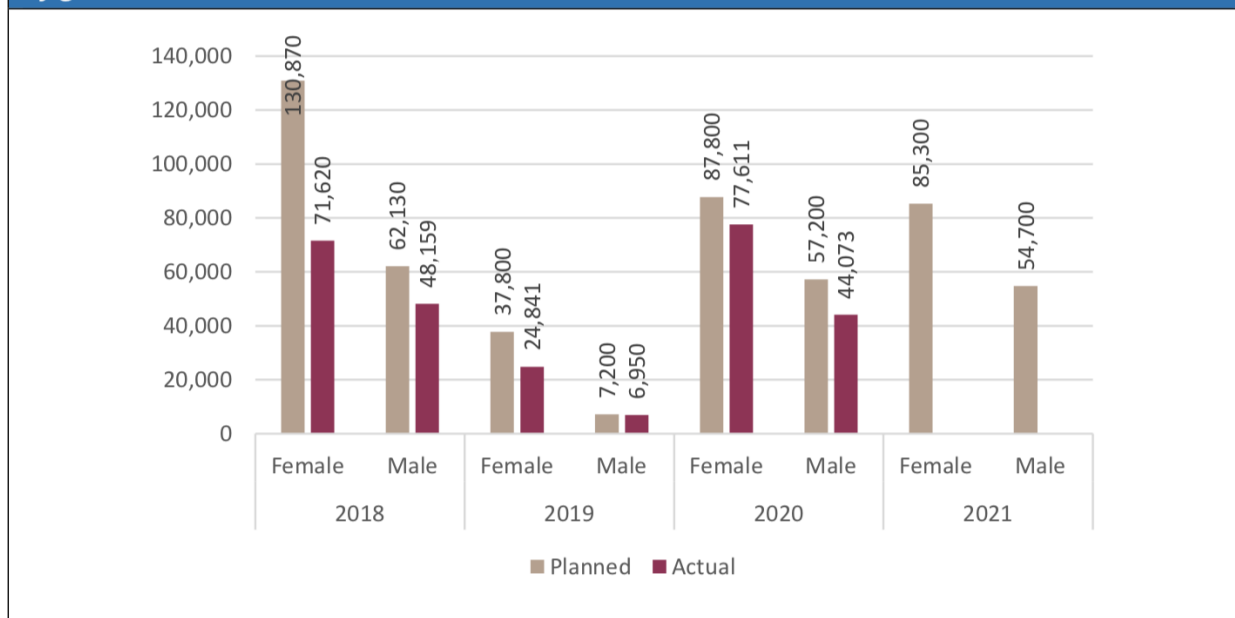
The goal of these programs is support food security efforts through collaborations with local organizations. It is a really important effort for world organizations to not overstep boundaries when they come into a country to help. In Ghana, WFP recognizes this and uses its own power to highlight those within the community. WFP efforts have helped Ghanaian organizations sustain themselves. In 2022 “WFP is partnering with global corporations to build a world-class Transport Training Centre in Accra, Ghana, aimed at enhancing transport and logistics capacities across West Africa.”¹⁴³ The transport center will train over 400 employees a year local and non local professionals to work in these transport centers. They will be equipped with not only technical skills but also handling emergent food items that would be distributed within the community in order to reduce both food insecurity and aid alleviate the issues of poverty. Below is a graph that shows the outcome of WFP on Ghanaians

¹⁴¹ Philipp, J. (2022, February 23). *Food insecurity in Ghana*. The Borgen Project. Retrieved December 4, 2022, from <https://borgenproject.org/food-insecurity-in-ghana/>

¹⁴² World Food Program USA. (2022, March 31). *Ghana*. World Food Program USA. Retrieved December 4, 2022, from <https://www.wfpusa.org/countries/ghana/>

¹⁴³ Boohene, V., & Dirr, K. (2022, July 21). *WFP and partners bring first-of-its-kind transport training centre to West Africa: World Food Programme*. UN World Food Programme. Retrieved December 4, 2022, from <https://www.wfp.org/news/wfp-and-partners-bring-first-its-kind-transport-training-centre-west-africa>

Figure 7: Ghana T-ICSP (2018) and Ghana CSP (2019-2023), annual planned and actual beneficiaries, by gender



Source: COMET CM-R001b, retrieved 7 December 2021

¹⁴⁴ Not only is this program very minimal in how many people it can aid, but it is also not meeting the capacity it has for aid. Most of the targets for this program are usually not met; this indicates there needs to be some reframing of the program to ensure all the targets of the program are met. Assistance should be focused on helping as many people as possible for the best outcome of ensuring more people have the opportunity of living more food secure lives, with the support of these programs.

For nutritional assistance WFP promotes nutritional knowledge about the food local Ghanaians are consuming. The goal is to educate locals on the food they take to be able to make the best decisions on food selections and promote good health practices overall. WFP partners with the government in an effort to disseminate the information. Using the First 1000 Days program, “The WFP also supplies electronic vouchers to supplement the nutrition of pregnant or

¹⁴⁴ World Food Programme. (2022, March). *World Food Programme*. Evaluation of GHANA WFP Country Strategic Plan 2018-2021. Retrieved December 5, 2022, from <https://docs.wfp.org/api/documents/WFP-0000137703/download/>

breastfeeding women and children younger than 2.”¹⁴⁵ This program's goal is to reduce stunting in children and control anemia related issues. The food resilience system promotes the connection between small farmers and local markets. In an effort to “to increase the availability, access and utilization of staples foods’ such as ‘maize, millet, cowpeas and soybeans.’ So far, the WFP has connected ‘10,000 smallholder farmers to two industrial agro-food processing companies that produce specialized blended nutritious foods.’”¹⁴⁶ Finally policy making assistance and capacity expansion focuses on creating and passing legislation that combats malnutrition while also creating food systems that are stable. To be able to do that WFP has connected with “Ghana’s national school feeding initiative to the country’s agricultural arena. The WFP helps Ghana to implement food security monitoring measures and establish guidelines to “improve food quality and safety and emergency preparedness.”¹⁴⁷

In terms of the impact WFP has made “According to a WFP Ghana Country Brief published in August 2021, for the year 2021 overall, the WFP aimed to help 45,000 people through nutritional assistance. In August 2021 alone, more than 4,500 people received direct food assistance through vouchers.”¹⁴⁸ The program also aimed to help “22,020 smallholder farmers, 12 nucleus farmers and 8 aggregators targeted for capacity strengthening and market linkages in 2021”¹⁴⁹ The beneficiaries are able to obtain food on demand with the vouchers, which directly improves food access quickly. In an effort to promote sustainability of food security the program also targets certain populations to create self reliant food systems. They plan on providing “technical support for community and industrial production of fortified flour

¹⁴⁵ Philipp

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¹⁴⁸ Philipp

¹⁴⁹ World Food Programme. (2021, August). *WFP Ghana in numbers country brief - world food programme*. Ghana. Retrieved December 5, 2022, from <https://docs.wfp.org/api/documents/WFP-0000134767/download/>

and for food safety and quality assurance. This includes technical support on food safety and quality for up to 30 community milling and blending women's groups, and financial and technical support for two industrial fortified flour producers in Brong Ahafo and Ashanti regions."¹⁵⁰ The program also aims to support the capacities of local and national institutions to improve "food security, nutrition and social protection programmes by 2030" by providing "technical support, to optimize the nutritional quality of school meals; food security monitoring; the early-warning system; disaster risk reduction and emergency preparedness, food safety and quality, and food- based dietary guidelines."¹⁵¹ All of the initiatives they have implemented have made a good amount of impact on Ghanaians, but it still falls short because the reach of this program is not as vast as government led programs because more than three million Ghanaians are food insecure. However the impact of this program is immediate and effective and efforts to support this program on a larger scale could really improve food security especially in northern areas.

In terms of supporting farmers who have unfortunately experienced the hardships of wildfires, government officials promoted land management through more sustainable practices, like "plowing post-harvest crop residue into their fields rather than burning it."¹⁵² In an effort to stop fires further down the line and restore the land "The government of Ghana created a program in 2015 to pay each farmer GHS 200 (\$34) to grow trees, improving soil quality, water availability and local biodiversity. When people saw their neighbors receive their first payments, participation tripled."¹⁵³ The government's direct efforts in helping farmers have also made a direct impact on the people and has paved the way for more long term effects. "Public incentives

¹⁵⁰ World Food Programme

¹⁵¹ World Food Programme

¹⁵² Ding, Anderson, & Cristales

¹⁵³ Ding, Anderson, & Cristales

like Ghana's could also help smallholder farmers adopt the latest technology — like climate-resilient, high-yield seeds — to boost their yields in the short term (as they lay the groundwork for the long-term benefits of restoration)¹⁵⁴ Government assistance and programs focused on land conservation has the possibility of increasing food security for farmers by providing money for improving the land. As farmers have access to money they can use it to buy food to sustain themselves or buy equipment to make farming easier. The trees also improve the environmental features of farming, which would inherently improve crop production and food availability for farmers, which was noted as a solution in the *How to Overcome Food Insecurity* section.

Feed the Future is another program that has been able to make an impact on Ghanaian's food security led by the USAID. The program's main goals are improve the countries' self reliance by improving their economic well being and the action steps to get to this goal are below:

- Targeting food security interventions in districts in northern Ghana, where poverty and nutrition statistics are poorest.
- Working to protect Ghana's marine fisheries to prevent the depletion of fish stocks in coastal areas.
- Promoting production of diverse, nutrient-rich crops, and improving processing, storage, and preservation to reduce seasonality and post-harvest losses while increasing market access to nutritious foods.
- Partnering with private firms, particularly within the agricultural sector, to expand their businesses and improve their offerings to meet national and global standards.¹⁵⁵

These practices are also consistent with the best practices in the earlier section indicating that these practices have been found to be beneficial to food security. Fortunately there have been some positive outcomes with this program. Just recently in 2021, “USAID/Ghana helped over 63,000 farmers – over half of them women – in northern Ghana to access agricultural inputs and

¹⁵⁴ Ding, Anderson, & Cristales

¹⁵⁵ *Agriculture and Food Security: Ghana*. U.S. Agency for International Development. (2022, June 22). Retrieved December 4, 2022, from <https://www.usaid.gov/ghana/agriculture-and-food-security>

finance, an intervention which generated over \$12 million in sales. In the same year, the Agency also organized 3,000 women to save \$250,000 through village savings and loan associations.”¹⁵⁶

The Hunger Project in partnership with Latter-day Saints Charities has also pushed an initiative to promote more food security. “Through the Food Security and Improved Nutrition Project at the Akpo-Akpamu Epicenter in the Eastern Region and Tokome Epicenter in the Volta Region. The project will reach 31 villages and approximately 16,674 people.”¹⁵⁷ The goal of this project is to educate people on nutrition in an effort to improve self reliance within the community. These community members are able to create their own specialized community development plans with the guidance of Vision, Commitment, and Action (VCA) process. “This holistic strategy builds a path to sustainable self-reliance through synergistic programs in health (including HIV/AIDS prevention), education, adult literacy, nutrition, improved farming and food security, microfinance, water and sanitation, and building community spirit.”¹⁵⁸ The Hunger Project has been able to create 45 epicenters across 5 regions of Ghana. “reaching 450 communities and a population of 350,000 people. To date, 18 of those 45 epicenters have reached self-reliance.”¹⁵⁹ The Hunger Project has been very effective in their goals of promoting self reliance to the community. They are taking a more specific approach in resorting to the community in order to understand what improvements need to be made in the community. It gives autonomy to the people of the region without overstepping boundaries as an international organization, which is extremely important when helping communities in need.

These programs are not the exhaustive list of what Ghana has done to improve both food insecurity and food insecurity instigators, but it showcases the impact that aid and assistance can

¹⁵⁶ *Agriculture and Food Security*

¹⁵⁷ The Hunger Project 2022. (2022, August 22). *Food security and improved nutrition in Ghana*. The Hunger Project. Retrieved December 4, 2022, from <https://thp.org/news/food-security-in-ghana/#F8F8F8>

¹⁵⁸ The Hunger Project 2022

¹⁵⁹ The Hunger Project 2022

have on a country. The programs have helped with improving both availability of food and access to food. While Ghana has established some programs it seems that the goal of their programs are very general in improving food insecurity. In an effort to have a stronger program, Ghana must specify the ways in which they will take to: improve the agriculture sector, reduce food insecurity, and more. The GFSP was one of the few programs that was specific in promoting food security by providing meals to school children. While it is successful in all regards of its goals, it seems that this program has work to do in order to improve the quality of food children get. The other program that Ghana initiated was paying farmers to plant trees, which was not only really specific, but the beneficiaries were encouraged to participate because they saw the impact it was having on their neighbors (who typically were beneficiaries first). This improved environmental issues (better soil, less use of water, etc.) improving crop growth and food availability. It also seems that Ghana as a country is collaborative with international and non governmental organizations. These organizations have done well in specifying the work they do in order to see the impact they want to see. The issue of these programs tend to be the minimal amount of people these programs are able to reach. As a government, Ghana has a wider reach in helping its citizens. Ghana can better support these organizations through providing more funds in an effort to improve the reach they have. Overall there are still improvements that need to be made in order to improve other aspects of the main drivers of food insecurity.

Conclusion: Recommendations for Ghana

As Africa is the most food insecure continent, there was an expectation for all countries to have high levels of food insecurity. Ghana is a country that stands out as they do not have nearly as much food insecurity as expected. In Sub Saharan Africa, Ghana sits in third place for food security. This food security stems primarily from the historical frameworks of the precolonial and postcolonial state. The British colonists set the foundation of development in the south in an effort to steal Ghana's gold. Development came in forms of education, roadway systems, and boosting the economy. This focus on southern development intentionally left northern areas out, keeping those regions undeveloped. Presidents and Ghanaian leaders knew that the north lagged behind and tried to pass legislation to help the agricultural sector. While these legislations masqueraded as helpful to northerners, leaders revealed that their main focus was continuing the improvement of development in the south, as seen with Rawlings administration. With a port that made trading possible, natural resources like gold to trade, an influx of people, access to schools, access to hospitals, and infrastructure the southern economy was destined to succeed. Ghana's success has been sustained, which is evident in the food insecurity levels in the south. As the research showed in southern Ghana the closer Ghanaians were to the capital the less food insecure they were. Without taking into account the north Ghana would have less than 3% food insecurity. This shows that leaving the north out left very lasting negative effects on the northern people and the country.

Certain circumstances predisposes people to be more food insecurity, which affects other aspects of life including health, educational outcomes, economic development, and more. For the north those circumstances were the lack of support from the government and issues of availability (weather related issues, access to sophisticated agricultural machinery, etc.) and

access (lack of safety net for agricultural hardships). Northerners are unable to improve their farms because they do not have the foundation of economic support. Most farmers are poor and for that reason it makes it difficult for them to improve their standard practices without any official support. If Ghana wants to improve food security, the country needs to focus efforts on improving the agricultural sector, which includes livestock rearing and crop farming. They can do this by expanding programs they have established like farmers planting trees for ceddis. Ghana can also encourage farmers to produce more by subsidizing farmers products, which has proven to be a suitable solution for promoting retention in the rural areas (increasing workers available) by increasing pay. Subsidizing agriculture would not only give farmers money in their pockets, but it would also make products cheaper for buyers which would improve accessibility for both groups. Along with that, creating safety nets programs for the farmers would give them something to rely on when climate issues and crop failure arises. They would not bear the cost of the negative impacts they had no control over. This would allow farmers to not have to not have to participate in emergency coping strategies to sustain themselves. Having a safety net program would give northerners a sense of security and it also should be focused on what particular farmers need instead of a general help. All of these suggestions are direct actionable steps the government can take to decrease not only food insecurity in their country, but prioritize their most vulnerable population.

While focusing on the northern region for food insecurity is important, the government needs to also take steps to improve access to food for urban citizens. They can do this by increasing the minimum wage so that workers have more funds available to them. Poor people in the urban areas are the ones most susceptible to food insecurity, raising the minimum wage would increase the amount workers take home, allowing them to get more for their money (only

if the cost of living does not rise). The government also needs to set up infrastructural developments that make cooking cheap food in healthier ways more accessible like creating taps in markets and ensuring it has clean running water consistently. Making improvements to the roadways would also reduce the expense of the food both on the supply and demand side. All of the factors of increasing pay and decreasing the cost of food would also directly help alleviate some of the burdens of food insecurity that urbanization creates for the urban poor.

Ghana has done some work to improve food insecurity through the various programs that it has implemented both through the government and through supporting world organizations programs functioning in their country. The impact these programs have has resulted in the improvements of food security in the nation, but with millions of people still food insecure it is important to add additional frameworks to make food insecurity zero. An improvement in food security would all around improve other aspects of life which are critical in creating a more equitable and sustainable future for all.

Overall, Ghana has the capacity to improve the state of food insecurity if they focus on providing similar benefits to the north as they did the south. Ghana must expand on programs already established to ensure that more people are getting the benefits that some people are receiving. As listed in the previous sections. These programs have proven to have a positive impact on the communities and they also seem to heavily prioritize the needs of the community, which makes improvements much easier. When Ghana is able to put more money into the program and inquire about the impact often through visual confirmation/ personal anecdotes it will ensure that the funds are being properly allocated. Today this work is important because Ghana is currently going through economic hardship as inflation has risen to 40%. While Ghana might have foundational frameworks that have ensured lower food insecurity, if it does not

prioritize those most vulnerable with the recommendations, there is a chance food insecurity will be exacerbated in the near future.

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