

Review

Understanding the effects of COVID-19 on food security in Ghana

Ivy Drafor-Amenyah

Research, Innovation and Consultancy Centre, Pentecost University, Ghana.

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The relationship between hunger and poverty has become clear with the outbreak of the coronavirus. Restricted people movement and border closures used to control the spread of the virus have implications for food security. Governments are challenged with allocating their scarce resources to cover additional healthcare costs and social protection expenditures which did not exist before. The Food and Agriculture Organization (FAO) warns that nations need to keep the global food supply chains across the world alive. Countries must ensure that policies put in place to stop the spread of the virus do not affect agricultural production. The poor and vulnerable have been impacted severely because of fewer resources to cope with the pandemic and require support such as community safety nets and social protection systems to reduce the impact on them. Managing the situation in the context of the four dimensions of food security will address short-term and long-term impacts of the pandemic.

Key words: Coronavirus, agricultural production, poverty, dimensions of food security.

INTRODUCTION

The state of food security and nutrition was already alarming before the outbreak of COVID-19 and can worsen (FAO, 2020). The challenge of achieving the Zero Hunger target by 2030 (Sustainable Development Goal 2 (SDG2)) is enormous with the estimated 820 million people being hungry in the world today (FAO, IFAD, UNICEF, WFP 2020). Not only did the virus originate from the food system, but it also penetrated it and exposed its systemic weaknesses (Béné, 2020; Zurayk, 2020). The outbreak of the disease has further revealed the link between poverty and hunger. Achieving the Sustainable Development Goal 1 (SDG1) of ending poverty in all its forms everywhere also means contributing to the Goal 2 of zero hunger. The emergence

of the coronavirus pandemic and efforts to control its spread around the world have increased concerns about food security, especially because food security is not achievable in the face of poverty. The pandemic has health, social, economic, environmental, and even spiritual implications for humanity.

Food security has four main dimensions namely, availability, access, utilization and stability. Candel (2014) describes the definition of food security and the interaction of the dimensions as a wicked problem, a situation that is difficult to attain. The effects of COVID-19 on food security must be discussed in the context of these dimensions to guide the process of identifying appropriate policies and interventions required to curb the

E-mail: ivy.drafor@gmail.com.

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situation.

The scarce financial resources in developing countries are being stretched to cover increased health care expenditure, costs of social protection that did not exist before, and increased costs of security in enforcing safety protocols, lockdowns, and vaccination. In many countries, security has been used to control people movements. In all these efforts, one primary concern, which is a fundamental human need, is food security. COVID-19 is a health crisis that need not become a food crisis. The spread of the virus resulted in the enforcement of restrictions on movement of people within and across countries and several countries have closed their borders. Limited movement of people implies limited movement of goods and this affects food availability in food deprived areas that depend largely on food imports. The distribution and movement of food from points of production to the consumer have been affected. This paper explores the issues of COVID-19 and its implications for food security and suggests measures for addressing the situation and preparing for the future. The paper reviews the literature to analyze the effects of the pandemic on the dimensions of food security, the vulnerable, and agricultural development.

DIMENSIONS OF FOOD SECURITY AND COVID-19

Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO, 1996). Food security has four dimensions namely, availability, access, stability, and utilization. All four dimensions must be fulfilled simultaneously. The effects of the coronavirus on food security need to be discussed within these four dimensions to understand the effectiveness of any interventions by public and private sector organisations. The disease has affected both the demand and supply sides of food.

Availability

The dimension of availability is the supply side of food security. It is the physical availability, which is made possible through production, food reserves, food processing, and what is received through trade. Food supply chain is a complex web of interactions with actors including producers, inputs supply, transportation, processing and shipping (Cullen, 2020). COVID-19 can have effects on production, processing and trade. Sonnino et al. (2014) argued that food availability is the amount, type and quality of food that a certain unit has at its disposal.

In the production sector, seasonal and migrant farm workers will be hesitant to travel from their home

environments to provide services on farms elsewhere due to fear of being infected with the virus. Social distancing requirements and restrictions on people movements have affected the operations in local food markets. Ghana experienced panic buying during the lockdown period as people wanted their food stocks to last over longer periods to avoid frequent market visits. Households are stocking more food than they usually do. According to the High-Level Panel of Experts on Food Security and Nutrition (HLPE), the COVID-19 crisis is leading to instability in both local and global food markets, causing a disruption to food supply and availability (FAO, 2020). A number of food-producing countries imposed trade restrictions on major commodities, especially wheat (Kazakhstan, Russia, and Romania) and rice (Thailand, Cambodia, and India) (Zurayk, 2020), in order to protect their citizens. A statement by the leaders of FAO, WHO, and WTO said countries should ensure that any trade-related measures do not disrupt the food supply chain (WHO et al., 2020).

Ghana has not seen higher land productivity and agriculture continues to depend on increases in cultivated land area, which has reduced the country's ability to develop agricultural exports other than cocoa (Resnick et al., 2019). These authors describe this pattern as unsustainable and unhealthy for the environment, and they argue that the pattern has implications for continual challenges of soil infertility, and presents a scenario of continual importation of rice, poultry and processed foods. This compromises food availability.

Access to food

Having adequate supply of food from production, stocks and imports is not enough. Households must have physical and economic access to the food. Either they are able to produce enough for household consumption or have the ability to purchase enough food for the household. Many households have experienced reduced incomes, coupled with increased expenditure on items such as hand sanitizers and face masks which did not exist before, putting pressure on the food budget. In Ghana, transport owners were charging higher transportation fares because of reduced number of passengers per trip. This increase in transportation cost is transferred to the consumer as higher food prices, which affect access. Prices of local food items were hiked before the lockdown due to panic buying to store during the period of limited mobility, limited access to markets, and social distancing. The poor are hard hit.

Food may not be reaching families sufficiently. Households need economic and physical access to food. Job losses, restrictions in movement, reduction in the number of market visits due to the virus can compromise access. During the lockdown, some markets were completely closed and marketing has been re-organised

in certain areas. Beltrami (2020a) asserted that a loss of purchasing power caused by the disease could change people's eating patterns, resulting in poorer nutrition. The World Health Organisation maintained that high costs and low affordability also mean billions cannot eat healthily or nutritiously (WHO et al., 2020).

Adequate supply of food in itself is neither enough nor does it guarantee food security. We need an appropriate interaction between incomes, expenditure, markets and prices in an uninterrupted manner to achieve national and household food security. Incomes, expenditure on food and healthy functioning markets are necessary conditions for access to food. Access to food is the demand side of food security. A reduction in demand for food can hurt households, cause losses to farm produce and affect national food security. Udmale et al. (2020) noted that fifteen African countries have been identified as most vulnerable to changes in food supply shocks, adding that the current pandemic can lead to transitory food insecurity. These authors' research showed that the phenomenon of a combined effect of economic slowdown and increase in poverty can further limit food supply and access.

Utilization

Food utilization is the body's intake of the nutrients in the food and several factors contribute to it. According to the FAO (2008), sufficient nutrient intake by individuals is the result of good care and feeding practices, food preparation, and intra-household distribution of food. The FAO added that, combined with good biological utilization of food consumed, this determines the nutritional status of individuals. Adequate food utilization is a function of the ability of the body to process and use nutrients as well as of the dietary quality and the safety of the foods consumed (Rez-Escamilla, 2017).

Dietary diversity, which is critical for a healthy lifestyle will be limited during the period of the pandemic, reducing the nutrient intake. It is not enough that food is available; feeding, preparation and intra-household dynamics contribute to effective utilization of adequate nutrients. There are challenges with utilization in times of food shortage, when income levels go down, and in times of reduced human interaction. Households shift to the consumption of inferior foods, which may be more affordable. The pandemic may alter the eating patterns of people.

Stability

If food intake is adequate today but an individual or household has inadequate access to food on a periodic basis at other times, they are still considered to be food insecure (FAO, 2008). The stability of the other three

dimensions over time is key to food security. The shock of the pandemic, leading to loss of jobs and reduction in income levels for many households is affecting food stability. The slowdown of many economies due to the virus is also affecting the stability dimension of food security. Seasonality results in periodic food inadequacy and causes instability in food supply and intake at household levels.

Stability is a dimension of food security that brings all the other dimensions together and refers to food being available and accessible, with utilization being adequate at all times, so that people are not food insecure during certain seasons (Leroy et al., 2015). Periodic inadequacy in food intake risks a deterioration of nutritional status, and this can be affected by adverse weather conditions, political instability, unemployment, and rising food prices (FAO, 2008). This is the "at all times" component of the definition. The challenge of food security is that, all four dimensions must be fulfilled simultaneously. Strategies that lead to stabilizing production and income levels across seasons, production periods and years are important for the stability of food security.

MOVEMENT OF FOOD

Food moves from areas of production to areas of consumption. This can be within the same country or across countries. It has been long established that many African countries are net food importers (Darfour and Rosentrater, 2018). Africa's food imports are rapidly increasing due to increased food demand and changing consumption habits, and these imports are expected to grow from US \$35 billion in 2015 to over US \$110 billion by 2025 (African Development Bank, 2020). What's more, food producers are also known to be net food buyers (Darfour and Rosentrater, 2018). Africa has the potential to become a net-food importer with the rich soil and appropriate climate that the continent is endowed with. Food availability depends on what is produced, augmented by what is imported.

Nations that are highly dependent on food imports will be negatively impacted if export restrictions are imposed in producing countries. The need for food to move from one geographic location to another, whether in the same country or by trade presents a challenge for global food systems in the face of COVID-19 which comes with limitations in people movement. Commercial food imports and food aid have constituted about 4.7% of food needs in Ghana for over two decades now (Ayifli, 2017). Yet, when food aid is stopped, hunger returns (Shane et al., 2000).

In Ghana, there is often food in the rural areas with scarcity in urban areas. Finding ways of moving food from rural to urban areas can improve distribution and availability. Higher post-harvest losses can be anticipated in the near future, especially for perishable foods, in

areas of production amidst restrictions of people movement, fears of being infected by the virus, and limited market experiences. Ghana could experience a lot of waste of food with restrictions in people movement. The spread of the coronavirus with its associated restrictions in people movement and restrictions in trade flows have possible impacts on future food security.

The ways that countries, governments, institutions, and communities respond to the coronavirus may have implications for resilience, food security, nutrition, and food systems policy (Hall et al., 2020). These authors added that, without adequate preparation, response plans, and resources, second-order impacts on the economy, on food security and education will be worsened when responses are uncoordinated. Appropriate policy response is a necessary condition for sustainable food security outcomes.

Darfour and Rosentrater (2018) indicated that Ghana imports 70% of its rice consumed and 15% of its maize. Rice imports have increased over the years due to changes in taste towards fast food and because of urbanization. Pinto et al. (2012) and Ayifli (2017) argue that the agricultural sector in Ghana has the potential to grow fast but climate change could inhibit such progress, especially due to the country's high dependence on rainfall. Ayifli (2017) added that average yields in Ghana have been said to remain stagnant. Cyclical food insecurity occurs in a few months of the year in Ghana due to seasonal production systems in the country (Drafor et al., 2013).

Movement of food and changes in food preferences are shifting in the short-run due to COVID-19. Households are preferring foods that have long shelf life so they do not need to go to the market frequently. The FAO (2020) referred to short-term preferences towards packaged food due to perceptions of food safety or convenience, which can become long-term changes, with repercussions on food systems, livelihoods of food producers, and dietary diversity.

Social distancing has direct and indirect effects on food security. Markets are disrupted with long queues in supermarkets to ensure the acceptable social distancing requirements. Some households are hesitant going to the market at all for fear of coming into contact with an infected person, and now with the new strains of the virus. The safety awareness levels of the populations around the world have become heightened, which has impacted on food availability and access. Though this will improve food safety and our future interactions, we need to ensure that food flows from points of production to points of consumption.

POVERTY AND THE IMPACT ON FOOD SECURITY

The ILO indicates a significant increase in unemployment and underemployment in the wake of the pandemic,

which implies high income losses for workers (FAO, 2020). Loss of income and remittances is reducing people's ability to buy food and compensate farmers (World Bank, 2020), which has implications for availability. With reduced incomes, households and individuals are not able to afford basic food needs, and may compromise the quality of food.

Poverty with the outbreak of the virus is the result of loss of jobs and the restrictions on people not being able to go out and work. Many poor households need to go out and work to be able to acquire something to eat on a particular day. Such households are not able to stock food and must go out to buy food every day. The situation of poverty is worsening in many households and poverty complicates the health crisis.

COVID-19 has exposed the older population to health, social and financial risks (Arthur-Holmes and Agyemang-Duah, 2020). These authors added that dependent older people's needs are critically at stake. Arndt et al. (2020) explained the burdens imposed on low income and food insecure households, noting that workers with low education were hardest hit. Without a regular salary or incomes, agricultural, migrant and informal workers are severely affected during lockdown periods, and agriculture, supply chains, food and nutrition security and livelihoods are affected (Dev, 2020).

The percentage of household income spent on food is an indication of level of poverty. A study by Paul et al. (2014) found that, in Ghana, the mean percentage of income spent on food was 65%, with households spending between 40 and 79% of their incomes on food. Households will be burdened when income levels are reduced and when food prices rise. Reduced incomes affect access to food and reduce nutrition, especially for the most vulnerable in society who have low incomes and are wage workers. There will be families that cannot afford to buy food. Good nutrition will be compromised in many households as they try to cope with restrictions in human movement and lockdown.

The poorest and most vulnerable populations have fewer resources to cope with loss of jobs, reduction in incomes, increase of food prices, and the instability of food availability (FAO, 2020). In Ghana, the middle and upper class are able to stock food supplies for a few weeks. The low-income group does not have the means to buy food in bulk nor have the capacity to store food that can last a week. Several households are not able to preserve fresh food items even when it is available. Due to high fertility among low income families, they are often characterised by large households. These poor households have their own strategies for managing their food systems but with little knowledge and capacity to store food for several days. Paying attention to women, who are primarily responsible for making food available at the household level, is important. Though Ghana has been viewed as one of Africa's success stories, and despite 30 years of continuous growth in per capita

income, most of the workforce is either trapped in traditional agriculture or low-productivity jobs in the services sector (Resnick et al., 2019). This poses a challenge, not only for urban dwellers, but also those living in rural areas, who will need support to cope with the outbreak of the virus.

Social protection is used to reduce vulnerability in order to stabilize income and improve access to food over time and between harvests (Devereux, 2015); a model that has supported many over the years (World Bank, 2019). Africa has a large informal sector and food producers form a large part of this group. Several countries around the world have supported their self-employed workers during the pandemic. Governments can find ways of raising money through targeted tax systems to support the poor, especially those in the informal sector.

Many countries around the world are protecting the marginalized populations who are having difficulty adapting to the crisis. Providing protection for the marginalized is a matter to be considered as an ongoing process to relieve the impact of the virus on poor households. Ghana has used the targeted feeding programme on a limited scale during the partial lockdown and carried out a nation-wide school feeding programme as a COVID-19 response measure in the month of August 2020.

In the absence of social protection, the poor need to find ways of surviving. In developing countries, especially African countries, support for the vulnerable and self-employed is almost absent and people required to self-quarantine do so at their own expense. Cullen (2020) showed how several advanced countries supported their populations to enable them to cope with the pandemic, including sick pay by the UK to everyone who was asked to self-isolate, Portugal supporting the self-employed, Hong Kong giving a universal income to 7 million adults, and Japan giving money to people to stay at home. Cullen further stated that countries should scale up nutritional support for vulnerable populations. Yet, African countries have poorer members of the population and the people need even stronger social protection.

EXPLORING THE SOLUTIONS

Countries with stronger capacities to manage food security shocks and temporary slowdown of their economy will survive better than those with weak systems. Countries with high levels of food insecurity are generally more vulnerable and less prepared for an epidemic outbreak. The World Bank (2020) has stated that, given the status of global food supplies, export restrictions are needless in this crisis as they could negatively affect food importing countries. Almost a decade ago, the UNDP indicated that failures that add up to food insecurity are pervasive, from agricultural, health, education and nutrition policies to research, extension

services, sanitation, local government, commerce and transport, and it will take a coordinated response across all sectors for any intervention to be effective (UNDP, 2012). This is particularly important in ensuring that all the dimensions of food security are addressed.

Actions needed to ensure sustainable food security must happen at different levels of society including the household, community, national and global responses. Households and nations need specific strategies. The efforts at national levels need to address the effect of the pandemic on the different dimensions of food security. National strategies should include proper movement of food and strengthening of linkages between producers and markets. Regions can also network to ensure regional food supply systems for improved food availability. Inadequate and uncoordinated efforts can worsen the situation and can turn a temporary challenge of food security into a chronic one. The primary concern of the household is safety. Much of the labour force are working from home, stocking food to last longer to reduce frequent market visits, and cook most of the food consumed within the household. Households must ensure adequate nutrient intakes for a healthy lifestyle. Countries must ensure that policies put in place to stop the spread of the virus do not affect agricultural production. Strengthening agricultural production and devising measures to increase productivity will affect future supply and availability of food. Short-term measures are necessary but we need to look into the future, especially with increasing populations. While we manage immediate food supply chains, agricultural policies should be directed towards increased production to meet future food needs. Long-term solutions are needed to avoid reactionary responses. To have long-term food security outcomes, we need to pay attention to our rural areas and rural road networks. We must reduce post-harvest losses and move food swiftly from rural areas to urban centres. Improved linkages between producers and markets will also improve access, availability and stability dimensions of food security.

These efforts must be supported by appropriate trade relations and healthy food supply chains. The World Food Programme's Chief Economist, Arif Husain stated last year that the impact of COVID-19 on the economy depends on the type of policies governments will put in place to respond to the crisis (Beltrami, 2020b).

The pandemic is changing certain practices of food vendors as a heightened awareness has been created in the minds of everyone about good hygiene, frequent hand washing, covering of mouth and nose when coughing and sneezing. This has implications for food availability and utilization and may require policy interventions to improve the handling of food by food vendors. Households must ensure that they are safe and the members are well nourished. Due to the pandemic, improving household nutrition is important. Staying at home reduces income levels for many households and the devastating effects

are food and nutrition insecurity. Children and the aged are more at risk during this period and will require some form of support to cope with the current challenge. For nations that have a large informal sector, to improve access to food is to improve the ability of people to buy the food. Physical distancing does not mean social distancing and community networks can help to support the vulnerable at the local level. Support is needed for poor households, self-employed workers, daily wage workers, and people who need to be in self-isolation.

Education and training are required at all levels coupled with effective communication to ensure that available food is used in adequate measures and the desired outcomes in the other dimensions are achieved. Cullen (2020) suggests that nations should try and reach all households with pertinent public information on food assistance and programmes set out to support them. In the face of poverty, education is key.

Increased agricultural productivity will improve access to food, reduce poverty, and improve overall development of the nation. According to Ragasa (2020), agriculture and food sector are critical for food and nutrition security and contribute to economic empowerment of many workers in developing countries. Resnick et al. (2019) noted that Ghana needs the right kind of policies to be put in place, with the right investments to propel agricultural exports, especially food exports. The FAO emphasized that countries need to continue planting, harvesting, transporting, and selling food, making sure that everyone is safe in the process (FAO, 2020). Agricultural production is necessary for strengthening the food value chain, which has been affected by loss of labour.

Cullen (2020) observed that transport restrictions and quarantine measures can impede farmers access to input and output markets. They can also hinder farmers from accessing markets and adequate farm labour. Continuing to import food items in large quantities cripples development and compromises the poverty situation across Africa. In addition to the effects of the virus, other factors such as the impact of climate change, high dependence on manual methods of farming, and poor rural infrastructure are responsible for food security challenges in Ghana.

CONCLUSION

Food security affects every sector and attention to food security must mean attention to ensuring productivity in all sectors of the economy. The coronavirus has affected every sector of national economies, causing economic downturn, worsening the poverty situation, and affecting food and nutrition across the globe. The current pandemic touches on several sustainable development goals including zero hunger, no poverty, climate action, and good health and well-being. The effects of the virus must

be analysed on the basis of the dimensions of food security, namely, availability, access, utilization, and stability of food. Ghana needs to ensure food security for the current while planning ahead to ensure food security in the future. The options available for achieving this include increased investment in agriculture to increase yields, attention to the development of rural areas, and some form of support for the poor and those engaged in the informal sector to enable them cope with the situation. Supporting the poor can translate into reducing the spread of the virus and its consequences on hunger and nutrition.

Stabilizing food production and income levels will affect stability of food between production seasons and lean seasons. Due to seasonal fluctuations in food supply, processing and storage of adequate food for dry season periods are necessary preparations against the impact of shocks such as the COVID-19 pandemic. As some farmers are net-food buyers, stabilizing food production can improve their ability to purchase the food for household consumption and avoid temporary shocks to the food system. The policy framework and what we do now will affect future food and nutrition security.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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