Introduction
The world have witnessed not only a major disruption to food supply chains in the wake of lockdowns triggered by the global health crisis, but also a major global economic slowdown. These crises have resulted in lower incomes and higher prices of some foods, putting food out of reach for many, and undermining the right to food and stalling efforts to meet Sustainable Development Goal (SDG). According to the World Health Organization, the worst effects are yet to come (Ghebreyesus, 2020; Khorsandi, 2020). Most health analysts predict that this virus will continue to circulate for at least one or two more years (Scudellari, 2020). The food security and nutrition risks of these dynamics are serious. Already, before the outbreak of the pandemic, according to the latest State of Food Security and Nutrition report (Food and Agriculture Organization [FAO], 2020), some two billion people faced food insecurity at moderate or severe level. Since 2014, these numbers have been climbing, rising by 60 million over five years (Scudellari, 2020).

The COVID-19 pandemic is undermining efforts to achieve Sustainable Development Goals (SDG). The complex dynamics triggered by the lockdowns intended to contain the disease are creating conditions for a major disruption to food systems, giving rise to a dramatic increase in hunger. The most recent estimates indicate that between 83 and 132 million additional people (FAO, 2020) including 38-80 million people in low-income countries that rely on food imports (Torero, 2020) will experience food insecurity as a direct result of the pandemic (World Food Programme [WFP], 2020). In Latin America, the number of people requiring food assistance has almost tripled in 2020 (The United Nations Conference on Trade and development [UNCTAD], 2020). Food productivity could also be affected in the future, especially if the virus is not contained and the lockdown measures continue.

Objectives of this paper include the following:

- examine the impact of covid-19 pandemic on nutrition and food security in Nigeria.
- determine the extent to which covid-19 pandemic led to increase in prices of food.
- Find out the extent of availability of food and nutrition in post covid-19 pandemic.

**Nutrition and Food Security in Post Covid-19 Pandemic**

The dynamics outlined above affect food security and nutrition in complex ways. The High Level Panel of Experts on food, security and nutrition (HLPE) Global Narrative report highlights six dimensions of food security, proposing to add agency and sustainability as key dimensions alongside the four traditional “pillars” of food availability, access, stability and utilization (HLPE, 2020).

i. **Availability:** While world grain stocks were relatively high at the start of the pandemic and remain strong, this global situation masks local variability and could shift over time. Grain production in high-income countries tends to be highly mechanized and requires little labour, making it less vulnerable to disease outbreaks among farm workers. In contrast, cereals production on smaller farms in lower income countries tends to be more labour intensive and female dominated. In contrast to grains, supply chains for horticulture, dairy and meatpacking are more vulnerable to the impacts of OVID-19 in higher income countries because of their more labour intensive nature, susceptibility to food worker illnesses, and corporate concentration leading to larger farms and processing facilities where disease outbreaks may spread rapidly. Disruptions in supply chains for agricultural inputs could also affect food production going forward.

ii. **Access:** More than any other dimension of food security, food access has arguably been the most affected by the COVID-19 crisis. The global economic recession triggered by lockdowns has had a very negative impact on people’s ability to access food. As the crisis drags on, short-term coping strategies (e.g., savings, the selling of animals and assets) are reaching their limits or have been exhausted, and in developing countries have limited capacity to provide extensive social safety nets (Gerard, Alpha, Beaujeu, Levard, Maitre d’Hotel, Rouille-d’Orfeuil & Bricas, 2020). Poor households operate on tight budgets with little to no discretionary spending.

iii. **Utilization:** Utilization and nutrition have been affected by the pandemic in important ways. Good nutrition is essential for supporting the human immune system and reducing the risk of infections. However, as people’s ability to access food diminished in the crisis, this had a negative impact on their ability to afford a healthy diet (FAO, 2020). This impact is felt especially in low and middle-income countries, where people typically spend a higher proportion of their income on food compared to people in high-income countries, with the poorest households typically spending around 50-80 percent of their income on food (FAO, 2011).

iv. **Stability:** The severe disruptions to food supply chains noted above are affecting the stability of global food supply and access (Haley, Caxaj, George, Hennebry, Martell, & McLaughlin, 2020). The export restrictions placed on staples like wheat and rice led to higher world prices for those crops, compared to prices for other foods, which generally fell (FAO, 2020c). Although most of the COVID-19 food export restrictions were temporary, the risk remains that countries may impose new export restrictions (Minot, 2019).

v. **Agency:** The most marginalized food system participants including food producers and food system workers have had little agency as the crisis has unfolded. As outlined above, food system producers and workers have been on the front lines and have suffered higher rates of disease and are affected by supply chain disruptions the most. The loss of jobs and livelihoods negatively affects agency, for example by weakening memberships of workers’ unions, and the capacity of unions to defend the rights of workers that may have lost formal contracts. Youth and women have been disproportionately affected by these impacts. Collective action and the ability to organize have been curtailed by physical distancing measures and lockdowns, as well as government emergency measures in some cases. The pandemic has also negatively affected women’s economic and social empowerment, which limits their agency (FAO, 2020).
vi. **Sustainability:** The pandemic is intertwined with the sustainability dimension of food security in complex ways. The expansion of industrial agriculture is associated with a rising prevalence of zoonoses diseases that transmit from animals to humans of which COVID-19 is a prime example (Everard et al., 2020). Fragile ecosystems, especially the degradation of wildlife habitats, are widely seen as a key driver of closer human-wild animal interaction that creates an increased opportunity for diseases to be transferred between them. Once the disease began to spread widely. The initial stages of lockdown measures, resulted in dramatic increase in food waste due to restaurant closures and declining demand for certain types of foods (Sharma, Vanapalli, Cheela, Ranjan, Jaglan, Dubey, Goel, & Bhattacharya, 2020).

**Impact of Nutrition and Food Security in Post Covid-19 Pandemic**
COVID-19 is a respiratory illness and there is no evidence that food itself is a vector of its transmission (ICMSF, 2020). However, the virus, and measures to contain its spread, have had profound implications for food security, nutrition and food systems. At the same time, malnutrition (including obesity) increases vulnerability to COVID-19. Initial and ongoing uncertainty surrounding the nature of the spread of COVID-19 led to the implementation of strict lockdown and physical distancing policies in a number of countries. These measures caused a serious slowdown in economic activity and disrupted supply chains, unleashing new dynamics with cascading effects on food systems and people’s food security and nutrition. Below we outline these dynamics. We then highlight how these trends are affecting the six dimensions of food security proposed by the HLPE in its 15th report availability, access, utilization, stability, agency and sustainability which are essential for ensuring the right to food (HLPE, 2020).

**Supply Chain Disruptions**
There have been major disruptions to food supply chains in the wake of lockdown measures, which have affected the availability, pricing, and quality of food (Barrett, 2020). The closure of restaurants and other food service facilities led to a sharp decline in demand for certain perishable foods, including dairy products, potatoes and fresh fruits, as well as specialty goods such as chocolate and some high value cuts of meat (Lewis, 2020). As the pandemic-related lockdowns took hold in many countries in March-May of 2020, there were widespread media reports of food items being dumped or ploughed back into the fields because of either collapsed demand or difficulties in getting these foods to markets (Yaffe-Bellany and Corkery, 2020). Farmers without adequate storage facilities, including cold storage, found themselves with food that they could not sell. The movement of food through the channels of international trade was especially affected by lockdown measures. As borders closed and demand for certain food items dropped, food producers reliant on selling their crops via distant export markets were highly vulnerable, particularly those producers focused on perishable food and agricultural products, such as fresh fruits and vegetables or specialty crops, such as cocoa (Clapp and Moseley, 2020).

**Global Economic Recession and Associated Income Losses**
The COVID-19 pandemic triggered a global economic recession which has resulted in a dramatic loss of livelihoods and income on a global scale (World Bank, 2020). The resulting drop in purchasing power among those who lost income has had a major impact on food security and nutrition, especially for those populations that were already vulnerable. Those in the informal economy are especially affected. According to the International Labour Organization (ILO), more than the equivalents of 400 million full-time jobs have been lost in the second quarter of 2020 with a number of countries enforcing lockdown measures (ILO, 2020). Developing countries in particular have been deeply affected, as they were already entering recession by late 2019. Global growth is expected to fall dramatically in 2020, with various estimates showing a drop in the range of 5 to 8 percent for the year (IMF, 2020). Global remittances a major source of finance in developing countries are expected to drop by around 20 percent (World Bank, 2020). According to World Bank estimates, an additional 71 to 100 million people are likely to fall into extreme poverty as a direct consequence of the pandemic by the end of 2020 (World Bank, 2020).
a number of severe hunger hotspots have emerged. As the UN reports, some 45 million people have become acutely food insecure between February and June 2020, mainly located in Asia and Sub-Saharan Africa (UN, 2020). As food demand has contracted due to declining incomes, food producers’ and food systems workers’ livelihoods are further affected: food systems are estimated to lose 451 million jobs, or 35 percent of their formal employment (Torero, 2020). Similarly, the UN estimates that around one third of food system livelihoods are at risk due to the pandemic (UN, 2020).

**Wideening Societal Inequities**

The global economic slowdown triggered by the pandemic, as well as the spread of the disease itself, has exacerbated existing societal inequities in most countries (Ashford et al., 2020). These inequities are affecting rights as well as access to basic needs such as food, water, and health care, and access to jobs and livelihoods, all of which have implications for food security and nutrition. Food insecurity already disproportionately affects those people experiencing poverty and who face societal discrimination, and it is these very people who are at higher risk of contracting COVID-19 and who have less access to health care services (Klassen and Murphy, 2020). COVID-19 has also exacerbated inequities in access to safe sources of water and basic food supply.

**Disruptions to Basic Survival Amenities**

The World Health Organization (WHO) stated that one in three people lack access to safe drinking water and as well as basic hand washing facilities (WHO, 2020). People without access to these services, which are vital for health and safe food preparation, are more likely to contract the disease, thereby compounding existing inequities (Ekumah Yawson, Nyieku, Owusu, Odoi & Afitiri., 2020). Many food system workers face precarious and unsafe work conditions, which have been exacerbated by the COVID-19 crisis. These workers are often paid low wages and lack protective equipment (Klassen and Murphy, 2020), and in some regions, such as in sub-Saharan Africa, South and South-East Asia and some countries in Latin America, the majority work under informal arrangements (ILO, 2020). Agriculture in many countries depends on migrant workers, many of whom work under casual employment arrangements where they have few rights and are vulnerable to exploitation (FAO, 2020a). As such, migrant labourers frequently face poverty and food insecurity and have little access to healthcare and social protection measures. Migrant food system workers have experienced higher incidences of COVID-19 infection as compared to other populations (Klassen and Murphy, 2020), including because they are more exposed to the virus due to cramped work, transport and living conditions (Guadagno, 2020).

**Disruptions to Social Protection Programmes**

Social protection programmes have been disrupted by the pandemic, which in turn are affecting food security and nutrition. When the lockdowns began, most schools were closed, resulting in the loss of school meal programmes in both high- and low-income countries. The WFP estimates that 370 million children have lost access to school meals due to school closures in the wake of the pandemic (WFP, 2020). In some countries, governments and the WFP are developing alternative means by which to reach school-aged children with food assistance, including take-home rations, vouchers, and cash transfers (WFP, 2020). While alternative school lunch arrangements (such as in Cameroon (WFP, 2020) may close the gap in some instances, in other cases such options are not in place, adding to the financial burden of poor households struggling to feed their families (Moseley and Battersby, 2020). The global economic recession that resulted from the pandemic and measures to contain it have also strained governments’ capacities to provide social protection for those most affected by the crisis (FAO and WFP, 2020). In April, the G20 governments offered to freeze the debt service payments for 73 of the poorest countries, an initiative endorsed by the G7 governments, in order to free up funds to address the fallout from the pandemic. Fully implementing this initiative has been challenging, however, affecting the ability of the poorest countries to provide social protection for their population through this crisis. According to the UN Commission for Africa (ECA), Africa needs $100 billion to finance its health and safety net response (Sallent, 2020). Most countries may have or will need to borrow money to finance their response, but unfortunately several countries are constrained in how much they can borrow by already high debt to GDP ratio (Sallent, 2020).

**Altered Food Environments**

Food environments have been deeply altered by the pandemic. Lockdown measures and supply chain
Localized Food Price Increases
Global cereal stocks are at near record levels and world food commodity prices overall fell in the initial months of the pandemic. However, the overall food price index trends mask wide variability in food commodity prices in the wake of the lockdowns. Initially, prices for meat, dairy, sugar and vegetable oil fell sharply, while prices for cereal grains remained steady. As the pandemic deepened, price trends have shifted, with meat prices rising, for example, as meat packing workers experienced high rates of illness in some countries and meat-processing plants closed temporarily in order to halt transmission of the disease in worker communities (Waltenburg et al., 2020; EFFAT, 2020).

Potential for Changes in Food Production
Global cereal stocks were at near record levels at the start of 2020, and food supplies generally were not in short supply. The dynamics outlined above, however, could change due to the high degree of uncertainty surrounding the virus and its evolution and societal impact. It could potentially affect production levels going forward, depending on how long the pandemic lockdown measures last, whether they are repeated, and the uncertainty regarding the timing and extent of these measures. Labour-intensive crops, often cultivated with a migrant workforce in some countries, particularly horticultural products such as fresh fruits and vegetables, are likely to be more affected by the disruptions noted above. Horticultural production, processing and export has expanded dramatically in many developing countries over the past several decades (Van den Broeck & Maertens, 2016), and these countries could experience production shocks due to labour shortages and transportation issues, which could affect incomes and thus food access. Cereal production, especially in industrialized countries where the use of highly capitalized equipment is common, is less likely to be impacted. Supply chains for agricultural inputs, such as seeds and fertilizer, has also been affected by lockdown measures, making them both scarce and more expensive. (Pu & Zhong, 2020).

Hunger and Malnutrition
The United Nations mentioned in report about Food Security and Nutrition in 2017 that the world hunger rate has begun to rise again threatening 815 million people in 2016 that is 11% of the world's population, after a remarkable steady decline during the past decade. Meanwhile, the UN report revealed in its 2017 edition, multiple forms of malnutrition is threatening the health of millions around the world. The report showed that the increase in the number of people affected by hunger compared to the previous year has increased by 38 million people, as a result of rampant armed conflicts and climate change (WHO, 2018). When there is an outbreak of infectious disease, there is also an increase in hunger and malnutrition. After initial reassurances that Covid 19 would not threaten global food security, the discourse has now changed drastically. The United Nations Economic Commission for Africa (ECA) expects that nearly 29 million Africans will be under extreme poverty line of US$ 1.9 and 19 million jobs lost as a result of Covid 19 (UN-ECA, 2020).
According to Siche (2020) the gist of any undertaken measure should focus on saving the health and food security of the population in the first place, rather than the economic growth, although some countries have decided otherwise. Deaton and Deaton (2020) identifies the food insecurity caused by Covid-19’s impact on income and health. They pointed out that food remain available on near term, while in the long run food availability will be determined on the extent of impact of Covid-19 on health, trade, transportation, and financial farm stability. According to Cranfield (2020) further attention should be paid to sociodemographic characteristics which spot those in vulnerable groups. Nearly 820 million people suffering hunger, while other suffering malnutrition as they lack sufficient food that allows them to enjoy healthy life even before Covid 19, but with the appearance of this virus certainly the number will increase, as the conditions of life in conflict and war zones is terribly disastrous as what Yemen Syria and Libya are going through for instance.

**Recommendations**

The following recommendations are hereby put forward:

1. Government should implement more robust targeted social protection programmes to improve access to healthy nutritious foods as well as ensure better protections for vulnerable and marginalized food system workers and farmers who are disproportionately affected by the crisis.

2. Provide better protections for countries that depend on food imports.

3. Strengthen and coordinate policy responses to the COVID-19 pandemic impact on food systems and food security and nutrition, including at the international level.

4. Support more diverse and resilient distribution systems, including shorter supply chain and territorial markets.

5. Support more resilient food production systems based on agroecology and other sustainable forms of food production.

**References**


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