

COVID-19 Lockdown and Nigeria's Food Systems: Connecting the Dots

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Abstract

The emergence of COVID-19, in Wuhan, China, in December of 2019, and its subsequent global spread in 2020, thus becoming a pandemic had serious socioeconomic disruptions among societies of the globe. Of serious concern in the disruptions was the pandemic's implication on the food systems of human societies, which exacerbated the already existing food crisis in many nations especially those of the Global South. This paper specifically identifies "lockdown policy" as a mitigation measure of the global health crisis and explores how it impacted on food system hence food security. It found out that the lockdown clogged the wheels of food availability, accessibility, affordability and stability, through various linkages. Some of the suggestions made aimed at attaining a sustainable food system hence food security in the COVID-19 regime summarily includes the following: - concrete steps should be taken by the government and other relevant stakeholders/collaborators through integrated policies that would lead to revolutionizing agriculture and food production in the country, similarly, those in the food chain should be encouraged to adopt the use of modern technologies including digital marketing of agricultural produce, etc.

Key Words: COVID-19, Lockdown, Food Systems, Food (in) security, and Nigeria

Introduction

The emergence of COVID-19 in Wuhan, China, in December 2019 and its subsequent spread to other parts of the globe thereby making it a global health crisis created a new socio and economic order for human societies across the globe. Like earlier pandemics¹, the COVID disrupted human socioeconomic and

¹For the discussions on previous pandemics See Hays J.N, *Epidemics and Pandemics, their impact on human History* (Santa Barbara: California, and ABC-CL10, 2005), and Howard Philips, "Influenza Pandemic in Africa,1914-1918", (2014, online), in Ute Daniel, Peter Gatrel, Oliver Janz, Heather Jones, Jennifer Keene, Alan Kramer and Bill Nason, Editors, *International Encyclopaedia of the First World War* (issued by Freie Universitat, Berlin, Berlin 2014-10-08, DOI:10.15463/ie/418.10431, Humphreys Margaret, *Yellow Fever and the South*, (New Brunswick: University Press ,1993), Roxer Max, "The Spanish Flu (1918-20): The Global Impact of the Largest Influenza Pandemic in History" (2020), Retrieved from <https://ourworldindata.org/spanish-influenza-pandemic-in-history>, Accessed 4 April 2020.



political status quos. COVID's mitigation approaches particularly the lockdown method unleashed far reaching socioeconomic consequences that exacerbated the already existed fault lines of high levels of poverty including income disparity and food insecurity² in the Global South. The lockdown evolved public high scale humanitarian crisis as millions of people had their livelihoods disrupted. Those who in the pre COVID era lived from hand to mouth practically became unable to feed themselves or their families during the lockdown. It is argued that at least 130 million people were pushed to the brink of starvation by the end of 2020 as a result of the Covid-19 crisis, in addition to the 821 million people who already experienced food insecurity prior to the pandemic period³. Food and agriculture destabilization by COVID affected the food systems of societies across the globe by infiltrating all aspects of the food chain including farmers, processors, distributors, wholesalers and retailers⁴.

Available literature on the subject matter of this paper tends to be disconnected from meeting its specificity-which is to examine the dot lines of CIVID's lockdown with food systems and food (in) security. Most literature that treats COVID-19 has isolated it from food security, while others did the reverse. Even for those that attempted examining the linkages of COVID-19 with food systems hence food (in) security, are based on theoretical and general assumptions. For others that are empirical and specific in nature, they are remote from the experiences in Nigeria. Summarily, the examined literatures glossed over the theoretical undertone of the impacts of COVID-19 pandemic on food and agriculture production without delving into the experiences of specific locations in order to cause and empirical study. This lacuna in existing literature on COVID-19 and food security systems has birthed this paper. It has adopted the cross thematic approach by fusing COVID-19 and food systems into a unit of analysis. The paper therefore specifically delves on the lockdown mitigation approach of the COVID and through empirical and theoretical measures explores how the approach disrupted food systems and impinged food security in Nigeria.

Discussion on Literature and theoretical Frame

COVID-19 is rooted from the theory of disease. A disease is caused by harmful bacteria or virus or by other altercations in the human system caused by chemical, physical, environmental, social and emotional conditions which an individual faces. A disease has the potential to cause an individual physical, social, emotional and economic disruption which can lead to poverty, at times in a vicious circle. Various studies have indicated that diseases are as old as

²See for instance Oge Udegbanan, "How COVID-19 Lockdown deprived Nigerians access to Food" *Premium Times*, 8 September (2020), Retrieved from <https://www.premiumtimesng.com/news/headlines/41319-how-covid-19-lockdown-deprived-nigerians-access-to-food-nbs-html>, Accessed 7 June 2021

³Food and Agricultural Organization (FAO) of the United Nations, "Pro-Poor COVID-19 Responses for economic Recovery", (2020),1, Retrieved from www.fao.org/3/cb0282en/cb0282en.pdf. Accessed 30 June 2021

⁴See Johnson Robert, Will COVID Threaten Availability and Affordability of Our Food(2020), retrieved from <https://www.usda.gov/media/blog/category/food-and-nutrition> , Accessed 21 May,2021

man⁵. Diseases leashes both morbidity which can lead to incapacitation, and death. Connected to disease, and which the human race faces in this century is food hunger that emanates from lack of or inadequate access to food. Millions of people predominantly from the global south suffer from hunger and malnutrition, which forms a major indicator of human underdevelopment in the global divide⁶. Disease and hunger feed into each other wherein hunger can lead to diseases and diseases can in various ways lead to hunger⁷. For instance diseases can deprive human capabilities needed in the food security chain which include production, affordability, and accessibility⁸.

Hunger evolves from non intake of food or its inadequate consumption which can then deprive the body of required nutrients that are capable of enhancing healthy life. Such deprivation manifests in diseases and condition of unwellness of an individual. Arguably, therefore, diseases can cause severe disruption in the food system which has prompted researches on the current COVID-19 global health crisis in relation to food security⁹. While some works touched on the health challenges posed by COVID-19¹⁰, others delved into such themes as the health and economic measures put in place by countries to prevent the spread of the virus¹¹. Also, while some specifically examined the impact of the COVID-19 lockdown on food systems, but from a general global perspective,¹² others examined the socioeconomic disruptions in general terms of the COVID-19 pandemic¹³. The FAO asserted that COVID-19 disrupted food

⁵Brand Spur, "Throwback: How Influenza Killed 500,000 out of 18 Million Nigerians in 1918" (2020), Retrieved from <https://brandspur.com>, Accessed 28 August 2020. Also see Robert Sallares, *Malaria and Rome: A History of Malaria in Ancient Italy*, (Oxford: Oxford University Press, 2002), McMillen Christain W, *Pandemics: A Very Short Introduction* (Oxford: Oxford University Press 2016), Hays, *Epidemics and Pandemics*, A George Scoper Major, "The Lessons of the Pandemic", *Science*, (Friday May 30th 1919, Retrieved from <https://sciencemay.org/>, Accessed 12 June 2021

⁶ Food and Agricultural Organization (FAO) of the United Nations, *State of Food Security in the World 2012* (Rome: FAO) 2012), Retrieved from <https://www.fao.org/docrep//06/i3027eoo.htm>, Accessed 1 June, 2021, Also see Economist Intelligence Unit's 2019 Global Food Security Index

⁷Jennifer Davies, *et al*, "Health and Development at the Food-Water Nexus" in Rosamond L. Naylor, Editor, *The Evolving Sphere of Food Security* (New York: Oxford University Press, 2016), 108-201

⁸ Claeson Mariam, *et al*, "Health, Nutrition and Population," in Jeni Klugman, Editor, *A Sourcebook for Poverty Reduction Strategies Vol.2 Macro and Sectoral Approaches* (Washington DC: The World Bank, 2002), 201-228

⁹ Food and Agricultural Organization (FAO) of the United Nations, "FAO COVID-19 Response and Recovery Programmes" (2020), Retrieved from www.fao.org/3/cb286en/cb0286en.pdf, Accessed 30 June 2021.

¹⁰Wu F Zhao, *et al*, "A New corona virus associated with human respiratory disease in China", *Nature* 599 (7798) (2020), 265-269

¹¹IMF, "International Monetary Fund Policy Measures to COVID-19" (2020), retrieved from <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Response-to-COVID-19>, Accessed 23 July 2021.

¹²Cornwall W, Cornwall. "Crushing Coronavirus means "breaking the habits of a lifetime", *Science* (2020), Retrieved from <https://doi.org/10.1126/scienceabc2922>, Accessed 30 August 2020

¹³Attah N.E and Agba, T.P, "Spanish Flu: Socioeconomic Disruptions in Nigeria and the Lessons for COVID-19" (Unpublished 2020), Leva Fidelis Mac *et al*, "Buhari Locks Down FCT, Lagos and Ogun" *Daily Trust*, Monday 30 March (2020), 5

systems Worldwide and posed a number of challenges for cities and local governments that are obliged to deal with rapid changes in food availability, accessibility, and affordability- which strongly impacted the food and nutrition situation of populations¹⁴. Food insecurity over the years has remained a thorn in the lives of many people across the globe including the populations of Sub Saharan African (SSA), arising from several factors¹⁵.

It has been documented that two- thirds of Sub Saharan Africa population earned its income and food from agricultural production which is majorly supported by rain fed farming systems.¹⁶ The largely rain fed dependent agricultural system that accompanies the usage of crude methods of agricultural and peasant based production couldn't meet food and nutrition needs of the people and so caused hunger to prevail¹⁷.

Food is any in solid or liquid substance that is traditionally taken orally, or otherwise, by human beings and animals for the purpose of quenching existing hunger condition or to prevent anticipated hunger. Aside protecting the walls of the intestine from the corrosive actions of digestive acids which causes hunger, food provides nutrients that are critical for the nourishment of the body for sustainable life. The absence or inadequate nutrients in the forms of vitamins, amino acids etc. in the body lead to unhealthy conditions¹⁸. Food is derived primarily from plants and other living things including animals, fishes, insects etc. The importance of food to life makes it a necessity for all human beings to have access to it at all times in adequate quality and quantities. That is to say that individuals should at all time in their lives be food secure. Food (in) security has been explained, analyzed and demonstrated in various studies¹⁹. For instance it is said to imply the condition of "having adequate supplies of food all year round to ensure a healthy and reproductive life"²⁰. This condition can be discerned at different layers of society including households, community, regional or national levels and even global level. The main thesis of food

¹⁴Food and Agricultural Organization (FAO) of the United Nations, "Pro-Poor COVID-19 Responses"

¹⁵Amatyr Sen, *Poverty and Famines: An Essay in Entitlements and Deprivation* (Oxford England: Oxford University Press, 1981), Ngustav A.S, and Akaahan T.J, "Self Help Groups Linkages as Panacea for enhanced Food Production in Benue State" in Patricks Ogiji, Editor, *The Food Basket Myth: Implications for Food Security and Agricultural Policy Reform in Nigeria (Essays in Honour of David Iornongo Ker)*, (Makurdi: Aboki Publishers, 2004), 24-36, also see Ivanic M and W. Martin, "Implications of Higher Global Food Prices for poverty in Low- Income Countries", *Agricultural Economics* 39 (4) (2008),308-313

¹⁶Food and Agricultural Organization (FAO) of the United Nations, *State of Food Security in the World 2012*(Rome: FAO) 2012), Retrieved from <https://www.fao.org/docrep//06/i3027e00.htm>, Accessed 1 June, 2021, Also see Economist Intelligence Unit's 2019 Global Food Security Index

¹⁷United Nations Development Programme (UNDP), *African Human Development Report 2012: Towards a Food Secure Future* (New York: UNDP Regional Bureau Office for Africa, 2012)

¹⁸Mariam, *et al*, "Nutrition and Population" 201-228

¹⁹Food and Agricultural Organization (FAO) of the United Nations, *Food Security*, Rozelle Scott, Jikun Huang and Xiaobong Wang, "The Food Security Roots in the Middle-Income Trap" in Naylor, *Evolving Sphere*, 64-86, Food and Agricultural Organization (FAO) of the United Nations, Response and Recovery Programmes.

²⁰Naylor, *Evolving Sphere*, 375

security is that an individual should at all times, have access to sufficient food. This condition has been vividly explained as “ a situation that exist 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”²¹.

The pillars of food security include food availability, accessibility, affordability²² and stability²³.Whereas food availability is a physical measure of food supplies which ensures that food must be physically available, accessibility and affordability are the economic measures of determining food security. Both accessibility and affordability relates to income and other forms of economic power that is needed to purchase food in sustainable quantity to meet food preferences, and nutrition and dietary needs of the people. Food stability on the other hand entails both the physical and economic measures of food supply. Consequently, therefore for food stability to be achieved, food must be available, at affordable prices, and incomes for purchase of food must remain stable. If food production drops for whatever reasons, its availability become impacted and by extension its accessibility and affordability. Low quantities of food that cannot meet demand leads to unavailability and higher cost of accessing it. In low quantities food production regime even those with the financial capability to purchase food find it difficult to attain food security because they cannot find it to access or can at most access it in inadequate quantities. In the other way, when food production is in high quantities but where there is low purchasing power, food affordability and accessibility still remains a charade. Food stability can therefore only be met if food production which ensures food availability is efficiently synchronized with sustainable distribution and purchasing power measures. Insufficient food is a form of poverty which is harmful to persons that are already living in poverty or are at its edge. Accordingly, “food insufficiency and instability often translates into fewer meals per week or smaller portions per meal, with brunt cuts commonly in the household”²⁴.In order to attain food security either at the household, community, regional or national and even global levels, the four components of food system including: food availability, accessibility, affordability and stability, must be met.

A food system is a complex web of agricultural processes which involves production, processing and preservation, transportation/distribution, and consumption. There must be those to produce the food products through various techniques, then the processors who process and preserve the products into different forms of food, followed by the distributors who ensure that food gets to the nooks and crannies for consumers to access. Accordingly, a food system is a simple chain represented by farmers/producers, processors, distributors, wholesalers, retailers and the consumers’²⁵.Any form of

²¹Naylor, *Evolving Sphere*, 375

²²Naylor L Rosamond, “The Many Faces of Food Security” in Naylor, *Evolving Sphere*,3-27

²³Headey D. D and O. Ecker, “Rethinking the Measurement of Food Security: From First Principles to Best Practices”, *Food Security* 5(3), (2005), 327-343.

²⁴Naylor, *Evolving Sphere*, 10

²⁵J. P Ericson, “Conceptualizing Food Systems for Global Environmental Change Research” *Global Environmental Change* (28), (2008), 234-245, also see D.M Tendal *et al*, “Food System Resilience: Defining the Concept”, *Global Food Security* (5) (2015),516-636

disconnectedness in this chain will surely lead to food insecurity. The inability of the food system to spur food availability, accessibility, affordability and stability leads to “food insecurity” which is the condition of lack of access to sufficient food and nutrients that would satisfy the stomach and nutritious enough for normal human existence. This condition has been aptly captured as “when people lack secure access to sufficient amounts of safe nutritious food for normal growth and development and active and healthy life”²⁶. Insufficient intake of amounts and safe nutritious food can lead to stunting and waste growth. While stunting refers to retarded growth in terms of normal height, waste refers to growth in terms of normal size. Whereas food insecurity can arise due to environmental, health, and many other forms of poverty challenges faced by those involved in the food system, nutrients deficiency in human beings can lead to moderate or severe health challenges which can even cause death.

The COVID-19 Pandemic

COVID-19 is an infectious disease caused by acute respiratory syndrome corona virus 2(SARS-CoV2) which belongs to the general family of viruses that causes illnesses such as common cold, severe acute respiratory syndrome (SARS) and Middle East Respiratory syndrome (MERS)²⁷. The Virus and disease first emerged in Wuhan, Hubei, China in December 2019, from where it spread to other countries at very alarming speed. In March 2020 almost all parts of the World including Nigeria had been infected by the virus²⁸. Individuals contracted the disease when they come in contact with surfaces like stair cases grips, biros, tables etc. that got contaminated with the virus. Other sources of contracting the virus included many oral means such as inhaling the breath, cough, sneeze, etc of an individual who carried the virus.

The food System

In Nigeria, like elsewhere, the food system begins with the production of food. Meanwhile the processes which cumulatively manifested in actual food products are defined in the yearly farming calendar. The bulk of farmers in Nigeria engaged in crop cultivation against other forms of farming such as animal and fish farming. Crops cultivation in the region is largely determined by rain regime as against irrigation. The rain regime compels the farmers to fashion out their cropping systems in two segments. The first segment begins in the dry season between January and March and involves clearing and other forms of land preparation before actual tilling of the soil and planting of crops. This is then followed by the second segment during the raining period beginning from March/April to October/November and embraces tilling of soil, planting of crops, removal of weeds from the crops, application of fertilizers,

²⁶The FAO, WFP, and IFAD cited in Naylor *Evolving Sphere* , 375

²⁷Mayo Clinic, “Corona Virus Disease 2019 (COVID-19)-Symptoms and Causes”,(2019), Retrieved from <https://www.mayoclinic.org/disease-conditions/coronavirus/symptoms-causes/syc-20479963>, Accessed 4 March 2020

²⁸See John Hopkins University for global data on infections and deaths from COVID-19, retrieved from, <https://coronavirus.jhu.edu/map.html>, accessed 23 May, 2021

crops maturity and final harvest. In some situations as it is the case in the extreme Northern parts of Nigeria for example, the dry season can last as long as from September to April/May leaving a short period for the raining season from May to September. Some food crops such as rice, yams, maize, cassava etc are harvested both during the rainy and dry seasons, while others including beans, soybeans are exclusively harvested in the dry season. After harvest food produce are distributed through transportation from the farms to markets, stalls, storage/preservations/processing points from where they are accessed by consumers. Clearly, the food system demonstrates an involvement of different set of people including farmers/producers, labourers, transporters/distributors/retailers, processors, etc. It is obvious that labour is a major requirement to spur a sustainable food system.

The Altercations of Lockdown and Food Supply and Access

One major requirement in all the stages and processes of food production and supply is labour. This is required in land clearing and preparation, tilling of the soil, planting, weeding, fertilizer application, harvesting, processing, packaging of produce, transportation, etc. For adequate labour to be assessed with relative ease the barriers to labour mobility must be removed. The emergence of COVID-19 contradicted this principle owing to lockdown policy put in place in order to check the spread of the disease. Lockdown emerged from the broad social distancing policy, which is a non-pharmaceutical and clinical intervention for the COVID. It aimed at reducing the rate of close contacts among human beings in order to check contagion of the virus²⁹. Lockdown entailed restrictions on human movements including human gatherings in social and public events such as in schools, markets, parties, burials, worship arena etc.³⁰ The strategy primarily aimed at aiding identification, tracing and isolating persons that came in contact with established cases of COVID-19 in order to avoid further spread of the virus. Aside the formal proclamation of lockdown made by state authorities, panic and fear of contracting the virus gripped people and therefore caused them to safe stay indoors.

In Nigeria, the lockdown policy was first enforced in Lagos and Ogun states and Abuja, on March 30th 2020, then followed few days later in the various states of the federation³¹.The restriction of human movements thereby caused labour to

²⁹Laura Hensley, "Social Distancing is out, Physical distancing is in-here is how to do it" *Global News*,(2020)Corus Entertainment Inc, Retrieved from <https://globalnews.ca/news/6717166/what-is-physical-distancing/>, Accessed July 2021

³⁰Maragakis L.L, "Corona Virus Social Distancing and Self Quarantine" (2020), Retrieved from www.hopkinsmedicine.org/health/conditions-and-disease/coronavirus/coronavirus-social-distancing-andself-quarantine, Accessed 23 May 2021

³¹Ayeyemi Dayo, "Foodstuffs' Prices Skyrocketed in Ogun Markets", *New Telegraph*, Wednesday April 1 (2020),9, Leva *et al*, "Buhari Locks down FCT",5, Tijani Ibrahim, and Ibrahim Musa Giginya, "Kano Residents Groan Over Increase in Food Commodities", *Daily Trust*, Wednesday 1st April (2020),21 &29, World Africa, "COVID-19: Nigeria Announces Lockdown of major Cities" *World Africa*, retrieved from <https://www.aa.com.tr/en/africa/covid-19-nigeria-announces-lockdown-of-major-cities>, Accessed 23 March 2021, Muritala Ayinla, "COVID-19: Lagos Shuts Markets, Traces 1,800 Contacts" *New Telegraph*, Wednesday March 25(2020),7

become stagnant and untapped in many instances. It affected labour mobility and labour sourcing. Hired hands to clear land, till the soil, plant and nurse seedlings, remove weeds, apply fertilizers and herbicides, harvest crops, and transport same, etc where trapped and hibernated. The COVID-19 lockdown labour situation was likened to that of the Spanish flu disease of between 1918 and 1919, when it is stated that the flu caused labour deficit for agricultural production³². A declined labour availability and access implied declined hecterage which also transcended to the decline in the quantity of produce. As reported by a farmer “COVID-19 caught many off-guards owed to the abrupt loss in the labour force which had both material and economic impacts on farm efficiency and the volumes harvested”³³. Similarly, is argued that COVID-19 diseases created labour shortages for growers, processors and retailers³⁴.

Inadequate supply of labour also triggered the hike of labour charges which in turn affected the food systems in a number of ways. For instance, the hike in labour charges compelled many farmers to reduce the sizes of their farms, which in turn affected the volume of food supply hence caused low quantities of food produced³⁵. This in turn led to higher food demands which also caused high cost of food thereby affected food availability, accessibility, affordability and stability.

Lockdown impinged free and swift distribution of produce and foods and impacted on all the components of the food systems. Produce and foods from the farms and processing points could not be moved to the markets from where they could be accessed by those in need. As most farmers are mostly in the rural areas where they carry out their farm activities, COVID-19 created stuck of food in the rural areas but caused depletion of food in the urban areas³⁶. Even though the lockdown caused food to be stalled in the rural areas where most of foods were produced, the rural populations enormously suffered from food and nutrition inadequacy for some of the following reasons. Many of the rural farmers produced food for the purposes of consumption and as a source of income. Owing to their inability to access adequate land, inputs, labour and funds that would enhance them large scale productions, they resorts to small scale food production and in many instances produced very few types of food items both as food and cash crops which they use to access other food items they cherished but couldn't produce. Under this arrangement, the lock down denied the farmers/rural populations access to markets where they could sell their produce and access other food items that they lacked. As argued, “In the absence of markets they could not sell what they produced to access foods that they lack to supplement their diets”³⁷. The lockdown closed food markets which

³²Oluwasegun Mufutau Jimoh, “Managing Epidemic: The British Approach to 1918–1919 Influenza in Lagos”, *Journal of Asian and African Studies* (2015),DOI: 10.1177/0021909615587367 jas.sagepub.com

³³Ahule Nyitamen, Personal Communication with author, September 2020)

³⁴Athwal Nav, “Coronavirus and Our Food Supply”, (2020),Retrieved from <https://www.forbes.com/sites/navathwal/2020/05/12/coronavirus-and-our-food=supply-/#2e/403962df3> ,Accessed 7 June 2021

³⁵Ahule Nyitamen, Personal Communication

³⁶Taiwo Hassan, “Lockdown: Food Scarcity Looms as Supplies Get Stuck”, *New Telegraph* Wednesday April 1 (2020),4

³⁷ Naylor, “Many Faces of Food”, 7-12

in turn reduced access to high value foods and caused higher food prices which then led to a risk of declining dietary quality of food³⁸.

Perishable food items like vegetables, fruits and tubers etc simply got damaged since they could not be easily and quickly disposed off as the market centres were inaccessible due to closures in transportation and the centres themselves. The lockdown similarly impeded the distribution of agricultural inputs including seedlings, fertilizers and machinery etc. thereby caused surges in their prices. Farmers across Nigeria for instance decried that the cost of fertilizer surged from 6000 to 12000 Naira³⁹. Again, it was revealed that access to agricultural inputs was limited by the pandemic as about seventy two percent of farming household in need of fertilizer could not access them⁴⁰. Inadequate distribution of inputs and the attendant high cost impinged high quantity produce-availability, and access and affordability which also implied instability. It is on record that sixty two percent of households in Nigeria who needed yams during the pandemic could not access to purchase it, while thirty seven percent of households who needed rice faced the same challenge⁴¹.

Lack or inadequate access to labour and agricultural inputs due to lockdown paved way for declined availability with an implicative rising cost of food. This was due to the fact that higher number of people competed to access little available food. The high cost of food therefore deprived many families and individuals to access quantity and quality food which negates the elements of food availability, affordability, accessibility and stability. Numerous reports of food scarcity and food prices hike in several locations under the COVID-19 regime emerged⁴².

It is a fact that agriculture employs at least over 80% of the global south's population that also engages in one form of petty activity ranging from trading, artisanship, menial jobs etc. The majority in this category feed only when they go out and work for the day and are classified as those living from hand to mouth or daily pay earners. Because they earned so little due to their non skills services rendered, they hardly had surpluses to safeguard an unpredictable

³⁸Samira Sadeque, "Q&A: Understanding COVID-19's Impact on Food Security and Nutrition", (2020), International Press Services, Retrieved from <https://www.ipsnews.net>, Accessed 30th December, 2020

³⁹Abbas Jimoh, "Nigeria: Bauchi Farmers, others Seek ways to overcome COVID-19 Impacts" *Daily Trust*, 27 August (2020), Retrieved from <https://africa.com/stories/2020082480054.html>, Accessed 27 August 2020

⁴⁰Oge Udegbanan, "How COVID-19 Lockdown deprived Nigerians access to Food", *Premium Times*, 8 September (2020), Retrieved from

<https://www.premiumtimesng.com/news/headlines/41319-how-covid-19-lockdown-deprived-nigerians-access-to-food-nbs-html>, Accessed 7 June 2021

⁴¹Udegbanan, "How "COVID-19 Lockdown deprived"

⁴²Hassan Taiwo, Lockdown: Food Scarcity Looms as Supplies Get Stuck. *New Telegraph* Wednesday April 1 (2020), 4, Ibrahim Tijani and Musa Giginya, "Kano Residents Groan over increase in Prices of Commodities" *Daily Trust*, Wednesday 1st April (2020), 21 & 29

future. Caged in one place due to lockdown, these categories of persons were unable to hire out their labour to earn their daily bread⁴³.

A study by Olam across Africa including Nigeria revealed that farmers experienced food shortages owing to the restrictions placed on movement in order to check the spread of corona virus⁴⁴. Although, it the FAO argued that prior to the emergence of the pandemic, food systems globally were already stressed arising from many factors including conflicts, climate change and poverty⁴⁵. It is also stressed that the pandemic containment measures especially lockdown and physical distancing for reduced human contact exacerbated the food situation as labour shortages and loss of harvest were continuously experienced in global food systems⁴⁶. About 4.5 billion people globally depend on food system while in Nigeria not less than eighty percent of the population depend on the food system for, livelihood, jobs, where they either work to produce, collect, store, process, transport, sale/distribute to consumers and also consume. COVID-19 pandemic has however put at least thirty five percent of the global food system employment at risk, even as women and children are at more higher risk⁴⁷.

Conclusions

COVID-19 pandemic disarticulated the social, cultural and economic systems of peoples across the globe just as it did food systems. The disruption of food systems exacerbated the already existed food challenges faced by many Nigerians. Those who suffer morbidity from the virus were deprived of their productive abilities during the period they fell sick and the incapacitation impinged their food production, access, affordability and stability. The finances expended on medical services by those who contracted the illness no doubt caused a decline in their purchasing power of quantity and quality nutritious food. Those who lost lives as a result of COVID-19 represented loss of labour in the food system equaling to decline in food availability which then gingered hike in food prices.

The hike in prices of food impeded food accessibility, affordability and stability. COVID-19 constraining measures especially lock down, self isolation avoidance of physical contact between humans led to disruption of food systems as it impinged access to labour and agriculture and food production inputs, food

⁴³Joseph Ambu, Personal Communication with author, July 2020, Also see such similar argument from Tyson Conteh, "We do what we can to help ourselves", *BBC News Africa*, June 14 (2020)

⁴⁴BWN, "COVID-19 Impacts on Small-Scale Farmers Underline the Need for Building Resilience" (2020),1,Retrieved on <https://bizwatchnigeria.ng/covid-19-impacts-on-small-farmers-underline-the-need-for-building-resilience/>,Accessed 29 August 2020

⁴⁵Food and Agricultural Organization (FAO) of the United Nations, *State of Food Security in the World 2012*, (Rome: FAO, 2012),Retrieved from <https://www.fao.org/docrep//06/i3027eoo.htm>, Accessed on 1 June 2021, Leadership, "Post COVID-19: of Food and Agriculture"(2020),Retrieved from <https://leadership.ng/2020/09/21/post-covid-19-of-food-and-agriculture/>, Accessed 5 July 2021

⁴⁶Leadership, "Post COVID-19"

⁴⁷Leadership, "Post COVID-19"

availability itself, and income with which to access food. Agricultural and food production including processing, distribution, and wholesaling, retailing etc. were disrupted and amounted to food instability. The restriction of movement affected food distribution by denying the shipment of food from areas of production and processing to outlets that would ensure their access and consumption. On the whole, the restriction of human movement led to food shortages due to lack of labour mobility and of equipments and inputs for food and agricultural production. Under this condition food prices hiked drastically in line with common economic knowledge of when scarcity exist it spurs demand and by extension prices. Summarily, labour and inputs/equipment shortages as caused by lockdown worsened food availability, accessibility, affordability and created food instability.

Food security is necessary for human survival. Again, history has shown that diseases and lockdowns have come to remain with mankind; as such humanity has to live with it and evolve better ways of handling it whenever it emerges. Subsequently, the need to tackle food insecurity challenge is urgent and necessary for Nigeria, other countries of the global south and the World in general. It therefore lies on the shoulders of the governments to take drastic steps that would revolutionize agriculture and food production in the country. Generally, towards achieving this feat government should embark on a holistic development approach that should embrace education and research, health and nutrition, agriculture and food developments and sustainable governance. Ensuring development in these areas simultaneously will boost agriculture and food production to no mean measure. Concrete, deliberate and purposeful investment in education and research if embarked upon will generate results which when applied will manifest in high yielding seeds and seedlings, profitable farm management techniques including processing, preservation, effective agriculture and food distribution networks, collaboration, and nutrition management etc. Investment in education should entail adequate budget and spending on the education sector at all levels; budgets that are capable of procuring 21st century art of scientific and social equipment which when engaged would prove problem(s) solving. It should target innovations and discoveries as these will lead to discoveries and innovations in the health, hygiene and nutrition that would promote healthy living and as well tackle emerging health challenges within short possible time. Sound education will equally generate knowledge that when applied would mitigate environmental challenges like global warming that has become a factor in impinging agriculture and food production. It therefore means that government should endeavour to do much more in reviving the educational sector by committing funds to it and ensuring that the funds are judiciously applied for the purpose, through good political will.

When purposeful education is achieved it will boost the health sector in some of the following manner: emergence of qualified health personnel, sound health care research etc. which when applied would cause healthy population that would fit into the agriculture and food enterprises.

Aside the above recommendations, specific measures which should be embarked upon by governments to meet the challenges of any future lockdown on food systems should include: Supporting those in the agriculture and food

chain: farmers, food processors, transporters, marketers' etc. by assisting them with facilities either financially or by availing agriculture and food production and processing etc. equipment. This can be fashioned out as revolving credit recovery loan that can be accessed at less stringent procedure and low interest rate. The COVID-19 palliative loans which were introduced by the federal government between March and May 2020 by the Nigerian government and the ongoing AGMEIS/NISAL programme are welcome strategies in this regard. Government should however develop a more careful monitoring system to check the politicization and criminalization of the programme, as it has been noticed to be suffering from in recent times. Small scale farmers can be particularly aided in this regard as they constitute at least the vast majority in causing food availability⁴⁸.

Again, the most vulnerable people in society who are involved in the agricultural and food system should be particularly targeted. While a lockdown arising from health crisis as COVID19 would ravage, farmers and all others that would be involved in the food system should be supported to sustain the chain by instituting safe labour practices like increased access to personal protective equipment including face masks, hand and other surface sanitizers and sprayers, gloves, etc. Similarly, they should be encouraged to adopt labour saving practices by developing relevant agricultural and food production and processing technologies and digital agricultural solutions. In this regards drones and robots usage in supply and application of inputs and sales of produce should be encouraged.

As lockdowns restricts movement, it will be useful if inter (national) food trade is allowed to continue with regulations that will ensure the application of the virus safety protocols. Food trade can also be encouraged through digital sales transactions in which the number of human physical contacts is greatly reduced.

There is also the need by government to at all time check for early warnings food insecurity by constantly assessing the existentialism between COVID-19 and any similar futuristic diseases and agriculture and food systems. This is useful as it will inform government of the most appropriate strategies that would ensure the restoration of food availability, accessibility, affordability and stability. These four elements can be achieved through release of food from local food reserves- the grains silos, which are built in strategic areas across the country. Social investment programmes like the school feeding programme of the current administration in Nigeria is a welcome development, other social programmes should include cash transfers and food distribution to vulnerable groups.

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