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POLICY ADJUSTMENTS FOR ENHANCED AGRICULTURAL PRODUCTION IN NIGERIA AFTER COVID-19 PANDEMIC

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ABSTRACT

The COVID-19 pandemic has caused disruptions to global food supply chains. It has led to severe economic stress and malnutrition particularly in developing countries. This paper outlines the impact of COVID-19 pandemic on agriculture and livelihoods in Nigeria, measures put in place by the Nigerian Government to cushion the effect and parses evidence on programmes and policies that can help speed up sustainable economic recovery that Nigeria desperately needs post COVID-19 pandemic, through agricultural growth. Identifying appropriate policies to enhance agricultural production and trade post COVID-19 pandemic is important for maintaining a robust global food supply. The paper concludes that it may be time for a fundamental reassessment of policies designed to tackle challenges in the agricultural sector in sub-Saharan Africa particularly Nigeria. The state of agriculture in any country is a reflection of the long-term agricultural plan designed and pursued by the Government to move the sector forward. In designing strategies, policies and programmes to enhance agricultural growth, the starting point is to diagnose the challenges faced by the sector and the impacts of previous measures put in place to tackle the challenges, so that lessons could be drawn for designing better and more appropriate policies.

Key words: COVID-19 pandemic, agricultural policy, agrifood systems, agrarian development

INTRODUCTION

The full impacts of COVID-19 on the global economy are yet to be seen, especially its effects on downstream sectors such as agriculture. However, it is clear that the smallholder and commercial farming as well as other links to the agricultural value chain will be impacted. World Bank (2020b) reported that the agricultural, service and commerce sectors were the worst hit by the measures put in place to contain the corona virus.

Agriculture remains a major source of livelihoods for the majority of rural households in sub-Saharan Africa providing employment to about 70% of the entire labour force (Shimeles *et al.,* 2018; Willy *et al.,* 2020). In Nigeria, it particularly employs about 35% of the total work force (World Bank, 2020a) and contributes about 24% to the Gross Domestic Product (GDP) (NBS, 2020). Amankwah *et al.* (2021) reported that about 76% of households in Nigeria are involved in agriculture. The Nigerian agricultural sector remains the key to the country's economic diversification plan (PWC, 2020).

Before the emergence of COVID-19, the agricultural sector was already bedeviled by a number of challenges ranging from climate change, widespread insecurity including the Boko Haram crisis and cattle rustling in the North as well as incessant farmer-herder clashes in the South and Middle Belt (PWC, 2020). Given this context any disruption in the supply chain of crop and animal products occasioned by the COVID-19 pandemic may further exacerbate the challenges faced by the country's agricultural sector thereby threatening agricultural livelihoods and the nation's food security in multiple ways.

Effects of the COVID-19 and the associated measures put in place to contain it on livelihoods in Nigeria as reported in the literature include: decline in food consumption and income (Aromolaran *et al.,* 2020; Oseni *et al.,* 2020), increased food insecurity (UNDP, 2020), panic buying and sharp price spikes (Oyekanmi, 2020; PWC, 2020; FAO, 2021a), migration, displacement (IOM, 2020) and remittances (Anaeto, 2020; Andam *et al.,* 2020a). For instance, Andam *et al.* (2020b) reported that about 33% of households in Nigeria lost their income during the COVID-19 pandemic. Also, World Food Programme (WFP, 2020b) estimates that 270 million people in 83 countries where it operates could be severely food-insecure by the end of 2020, which represents about 82% increase prior to the emergence of the pandemic. According to FAO (2021b), the COVID-19 pandemic has exacerbated the already severe food security situation in several states in Nigeria.

These impacts were not only limited to Nigeria, other countries were also impacted. For instance, in India, farmers have been affected by limited access to harvesters and shops that serviced their equipment, lack of buyers as a result of closure of

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the regulated markets or mandis, and transport restrictions (Narayanan and Saha, 2020). In East Africa, the exports of coffee, tea, fresh produce and cut flowers were suspended, both by suspending auctions at mass gatherings, and weakening demand in world markets (WFP, 2020a). Movement restrictions, disruption of international veterinary supply chains, shutdown of livestock markets and reduced urban demand for meat have all negatively impacted the livestock sector, though Somalia and Sudan benefitted from reduction of meat exports to Arab countries from elsewhere in the world (ICPALD, 2020).

In Ethiopia particularly, the vegetable trade has been disrupted by travel restrictions on trucks carrying produce, reduction of input importation from China, restrictions on would-be casual labourers gathering at hiring points, and also the fear by urban residents that fresh produce can carry the virus (Tamru *et al.,* 2020). In Zimbabwe, rural people's lives have been tremendously impacted by the restrictions in movement, closure of agricultural produce markets and lack of access to agricultural inputs (such as veterinary supplies) and services (such as pump repairs) (Scoones, 2020).

There are two pertinent questions this paper seeks to address: first, what agricultural policies did the Nigerian Government introduce during the pandemic and how did it impact agriculture? Secondly, what policy adjustments need to be made post COVID-19 pandemic? Managing recoveries from impacts posed by COVID-19 pandemic on agriculture will present an enormous challenge for public policy. However, policy actions to address these multiple challenges faced by actors in the agricultural value chain and to improve the functioning of the agricultural sector will be crucial to effectively address food crisis at the present and in the future. It is important that lessons are learned from the responses to the COVID-19 pandemic in agriculture with the view to improving areas where there were loopholes.

Policy Measures Enacted by the Federal Government following the Outbreak of COVID-19 and the Nigerian Agriculture and Food Systems

The presence of COVID-19 in Nigeria was first reported on the 27th of February 2020 (NCDC, 2020). On the 30th of March 2020 the Federal Government of Nigeria (FGN) and State Governments imposed a five-week lockdown across the 36 states including the Federal Capital Territory, Abuja, which was done in phases (FGN, 2020). The Government implemented further strict measures such as night curfew, ban on interstate and international travels, closure of domestic and international airports, closure of land borders, schools, suspension on all public gatherings such as religious gatherings, weddings, burials and parties as well as restrictions in the operation of food market outlet and open-air market. The lockdown of these activities was extended until 7th of August, 2020 when the Presidential Task Force on COVID-19 (PTF COVID-19) in Nigeria announced a gradual ease of the lockdown.

Although the guidelines announced by the PTF COVID-19 allowed the movement of persons providing essential services such as health workers, movement of agricultural produce, petroleum products and some manufactured goods, movement restrictions were implemented by the security operatives indiscriminately and recklessly. This had some effects on small-scale farmers as many farmers access to their farms and markets were restricted and since most small-scale farmers do not have storage facilities, they incurred a lot of post-harvest losses forcing some to sell their produce at very cheap prices (SWOFON, 2020). Even after the relaxation of the lockdown security operatives kept harassing the farmers and where the farmers refuse to pay bribes, they stand the danger of having their produce destroyed and seized. This also discouraged many of the transporters from operating and the few who did ended up transferring the additional cost to farmers (SWOFON, 2020).

The lockdown and restriction of movement coincided with the planting and harvesting season of most crops like maize, tomatoes, sorghum, cucumber and rice. This resulted in the shortage of hired labour for agricultural production and since many farmers lack access to mechanized farming, it affected agricultural production and marketing. The resultant effect was spoilage of agricultural produce, hike in the prices of food, and hunger (Ilesanmi *et al.,* 2021). Also, the lockdown limited access to agricultural inputs for major staple crops such as rice, cassava, maize etc. (FAO, 2021b).

For instance, in southern part of Nigeria, poultry feed millers experienced limited access to maize, which is a major input used in the formulation of feeds and which is mostly sourced from the North. Labour shortages has been blamed to have contributed to the reduction in the availability of maize for poultry feed formulation leading to a rise in price of maize from $0.23 per kg in March 2020 to $0.47 per kg in August 2020 (Berthout, 2020). The resultant effect was that many poultry feed millers had to shut down their operation or cut down their production (FAO, 2021b). It is because of this that the President Mohammadu Buhari, on the 3rd of September, 2020 directed that 30000 tonnes of maize from the national reserve be released to the poultry feed millers (Ojewale, 2020). Also, the prices of agricultural inputs like fertilizers, seeds, herbicides skyrocketed. This was as a result of the lockdown which limited the importation and transportation of these goods. SWOFON (2020) reported that one bag of fertilize which sold for ₦7,500 in May increased to ₦17,000 in August.

The pandemic also resulted in a reduction in the availability of food. The reduced availability of food items like maize, cassava, rice, millet, groundnut, yam, sorghum was clearly evident from the third quarter of 2020 (PWC, 2020). The closure of markets caused a reduction in intra- and inter-country trade and hindered farmers from selling their produce, which in turn led to localized food scarcity and increased food prices. Farm gate prices declined as a result of market closure and restriction in movement. So, farmers were making lower profits by selling in local markets while urban consumers were paying higher prices because of reduced supplies to the urban markets. Even with the relaxation of the lockdown, food prices have continued to increase (FAO, 2021b).

The restriction of movement and closure of border also resulted in reduction in export of crops such as cashew, cocoa, sesame; Nigeria was projected to have lost $160 million as a result of this impasse (Odutola, 2020). Also, because Nigeria's trade partners closed their borders as well, for some period of time, it resulted in disruption in the global supply chain for essential goods and services needed in the agrifood systems in the country.

The COVID-19 pandemic also negatively impacted investments in agribusinesses. Two business surveys carried out by United States Agency for International Development (USAID) showed that 32% of businesses that submitted proposals for co-investment grants were unable to continue with the planned investments on accounts of staff cuts, reduced operations and precarious financial situation (USAID, 2020). However, Government also took other policy measures aimed at curtailing the negative impact of the pandemic on the agricultural sector. These are discussed below:

i. Establishment of Task Force in Charge of Movement of Agrifood Actors, Inputs and Produce

The Ministry of Agriculture and Rural Development (FMARD) on the 20th of April, 2020 inaugurated a joint technical task force on the emergency response to COVID-19 (FAO, 2021b). The task force was saddled with the responsibility of facilitating the easy movement of farmers, food, livestock and agricultural inputs across the states in Nigeria during the lockdown. This task force was established following the report received by FMARD citing the difficulties faced by transporters of food, livestock and agricultural inputs due to reckless enforcement of restriction order by security operatives. The exemption for food and agriculture-related activities could not be carried out because it was difficult to obtain the needed permits since most offices were closed or had limited working hours and personnel to process request. Moreover, government extension workers who could have distributed this clearance pass were not available.

ii. Provision of Agricultural Inputs and Subsidies for 2020 Planting Season

According to Ewepu (2020), the National Agricultural Seed Council supplied 81,000 tonnes of certified seeds to farmers to ensure that farmers had enough seeds for the 2020 farming season. The seeds included 4,000, 30,000, 1,500, 3,000, 4,000, 4,000, 40,000, 550, 6,000 and 2,500 tonnes of maize, rice, cowpea, sorghum, soybeans, sesame, millet, groundnut and wheat, respectively (Falaju, 2020). The price of fertilizer was reduced and interstate travel permits were issued for seed conveyance (FAO, 2021b). Also, FAO (2021b) reported that the FGN provided $41.2 million to Maize Farmers Association of Nigeria to support them in the 2020/2021 farming season. The fund was used to distribute agricultural inputs such as fertilizer, seeds and agrochemicals to 40,000 members of the association.

iii. Provision of Agricultural Loan

Before the pandemic, the Central Bank of Nigeria (CBN) operated different funding schemes such as Anchor Borrowers Programme (ABP) and Agricultural Credit Guarantee scheme (ACGS). However, to cushion key sectors from the shocks caused by the pandemic, CBN introduced the Targeted Credit Facility (TCF) where they disbursed ₦50 billion loans to firms in the agricultural value chain and to support households and small and medium enterprises (SME) impacted by the pandemic. The loan was designed to have a maximum repayment period of three years and an exit date of 31 December 2024, and comes with interest rate of 5% initially and then 9% after March 2021 (HRW, 2020).

The loan, through which a household can get up to ₦3 million, however, requires collateral (HRW, 2020). For instance, the report from small scale women farmers organization in Nigeria showed that the loan was difficult to access for small scale farmers especially women as it requires online application and many of these rural communities do not have access to electricity, internet and many of the small scale farmers are not educated (SWOFON, 2020). In addition, requirement of land as collateral are difficult to meet by most small-scale women farmers who, by tradition, are not allowed to own lands.

To further ensure the accessibility of farmers to finance across the States the CBN under the Nigerian Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL) approved the disbursement of a ₦75 billion, funding support programme known as Agribusiness Small and Medium Enterprises Investment Scheme (AGSMEIS) for micro, small and medium enterprises (NACC, 2019). The scheme provides up to ₦10 million loan at 9% interest rate per annum

for repayment period of seven years to eligible start-ups and existing entrepreneurs. Nonetheless, the Apex bank reduced the interest rate for all its previous intervention funds like ABP and ACGS from 9% to 5% per annum and also extended the moratorium on payment of principal by one year (PWC, 2020).

iv. Nigeria Economic Sustainability Plan

The FGN in May 2020 officially launched Nigeria Economic Sustainability Plan (NESP). The plan had different components but the component that addresses the agricultural sector specifically is the Mass Agricultural Programme (MAP). The estimated cost of the project is ₦634 billion and the aim is to provide five million jobs by bringing into cultivation between 20,000 to 100,000 ha of new farmland in various states of Nigeria, as well as utilizing abandoned farm settlement schemes (FGN, 2020).

The project is expected to span the agricultural value chain from farm-to-table with a timeline of one year. It will support small holder farmers directly or throughout grower schemes with services and inputs such as land-clearing, ploughing, provision of equipment, agro-inputs such as seedlings, pesticides, fertilizers, storage facilities and extension services. There is also provision for low-interest input financing. The increased production will be purchased by private sectors (e.g., large conglomerates), agro-processors, commodity exchange and procurement for government strategic reserve.

v. Distribution of Grain from the National Strategic Grain Reserve

To cushion the impact of the COVID-19 pandemic on the poor and vulnerable, the FGN ordered the release of about 70,000 tonnes of grains (millet, maize, sorghum, etc.) from strategic reserves to all states nationwide (FRCN, 2020). The first grain distributions were released in April to Lagos and Ogun States and the FCT and subsequent batches were distributed to other states until September, when the measure was phased out (FAO, 2021b).

vi. Cash Transfers

On the 1st of April 2020, the Ministry of Humanitarian Affairs, Disaster Management and Social Development began paying ₦20,000 to families registered in the National Social Register of Poor and Vulnerable Households (NSRPVH) (HRW, 2020). The federal government announced that this cash payment will last for four months. By 6 May, the minister disclosed that a total of 729,847 beneficiaries in 24 states had received payments from the COVID-19 cash transfer intervention (Sanni, 2020). The payment of cash transfers was phased out in July, 2020. This payment excluded a lot of Nigerians who need financial aid since only about 11 million people are registered in NSRPVH which is far below the 90 million estimated to live in extreme poverty (HRW, 2020).

Policy Recommendations for Efficient Agrifood Systems Post COVID-19 Era

We consider the following policy measures as very important for Nigeria's economic recovery through agriculture in the post COVID-19 era.

i. Leveraging on Science, Technology and Innovation

To ensure a sustainable economic recovery post COVID-19 pandemic, the Nigerian Government should promote large scale farming by adopting smart technologies. Subsistence agriculture is not adequate to meet the challenges of the agricultural sector. As a matter of national strategy, the FGN should promote the use of technology and innovation to revamp agriculture as a pathway to speed up the post COVID-19 economic recovery.

There are a number of technological innovations that have emerged in the agricultural industry some of which include precision agriculture and artificial intelligence, vertical farming, cloud farming, automation and robotics, block chain, etc. Though, not every solution may be suitable for every jurisdiction, the Nigerian Government needs to consider these options for adaptation, adoption and development. Farmers also need to have access to timely information and recommendation about weather, soil and market condition. Other technologies that should be promoted are those that help in maximizing yield, enhancing efficiency and solving problems such as food traceability, supply chain inefficiency, etc. India is a good example of a country which has provided a blueprint for economic recovery driven by technological innovations in agriculture. The pandemic caused the country to adopt some technologies such as irrigation and air seeding technology which helped to increase crop yields to levels higher than what it was before the pandemic (Perchstone and Graeys, 2021). The Indian Government also promotes the use of technology to monitor and control crop irrigation system using smart phone, mobile technology and cameras on the farm, ultra sounds for livestock and crop sensors (Nidhi and Kumar, 2019). Nigerian Government could perhaps think in this direction post COVID-19.

Among the farming innovations adopted by the Indian Government two of them stand out: Electronic National Agriculture (eNAM) and 'Uberization' of farm produce. The eNAM is an online trading platform that facilitates trading in commodities between farmers, traders and buyers for better price discovery and smooth marketing of agricultural produce (Agroberichten Buitenland, 2020). 'Uberization' of farm produce is an application like 'uber' that helps farmers and traders find transport vehicles to move their produce around (Agroberichten Buitenland, 2020).

ii. More Palliatives for Farmers

As has been seen in the previous section, FGN did provide some fiscal and monetary palliatives to help cushion the effect of the COVID-19 pandemic on individuals, households, businesses and the economy as a whole. Also, various organs of the government are taking proactive steps to support farmers so as to ensure that food production is sustained and food crisis averted. For example, the FGN, through the Presidential Fertilizer Initiative reduced the price of fertilizer from ₦5,500 to ₦5,000 50-kg^{-1} bag (PWC, 2020). While these are laudable, they are not sufficient to cater for the needs of the farmers. Governments, both at the national and state levels should provide more palliatives such as free improved seedlings and other agro-inputs, basic farm implements and tractors at subsidized rates, and free or cheaper extension services to farmers.

Also, social protection mechanisms, like cash transfers, access to loans, credit-life insurance products and weather index insurance should be integrated into the Nigerian legal framework (Ilesanmi *et al.,* 2020). These social safety nets are important for agrifood enterprises, especially when there are temporary drops in their economic activity as a result of the COVID-19 pandemic. For instance, countries such as Malaysia, Dominican Republic, Thailand and South Africa have used unemployment protection scheme to support enterprises in retaining workers in employment as well as workers who have lost their jobs (ILO, 2020). In post COVID-19 pandemic era, such mechanisms can play a vital role in protecting agribusinesses and agricultural households especially in rural areas from crop failures, injecting finance into often cash-starved rural economies. Personnel who have good track record for transparency, accountability and integrity should be appointed to supervise these tasks to avoid situation where items or funds provided are diverted to private pockets. Government should collaborate with small scale farmer-based organizations in the disbursement for greater reach to smallholder farmer in remote rural areas. Also, CBN needs to revisit the requirements needed for accessing credit loans as it tends to favor more of male and large-scale farmers. They need to understand the realities of the sector which tends to be dominated (75%) by small scale women farmers and factor this in their targeting (SAHEL, 2014).

iii. Increasing Budgetary Allocation to the Agricultural Sector

Although, agriculture is the largest contributor to the country's GDP, yet annual budgetary allocation to the sector has remained at abysmal level of below 2% for the past seven years (PWC, 2020). This falls below the recommended 10% of the total budget set by the Maputo Declaration on Agriculture and Food security to which Nigeria is a signatory.

iv. Increase in the Capacity of the Existing Strategic Food Reserves

The current capacity of the country's strategic food reserve is considered inadequate for conserving food for the rainy day and stabilizing domestic agricultural prices, given the population of Nigeria. This is evident with the recent spikes in prices of food items and inflation experienced in the recent times. After the food crisis of 2009, Nigeria increased her grain reserves from 13 to 33 silos complexes having a total capacity of 1,336,000 MT of which six of them are presently being managed by the government (PWC, 2020). The FGN in 2018 entered into a concessionary agreement with 13 companies to lease out 20 silos at the cost of ₦6 billion for the period of 10 years. Despite this attempt to increase efficiency of the agricultural storage system and ensure food security, it has been reported that the FGN as at the first quarter of 2020 is yet to hand over these silos to the companies that won the bid (PWC, 2020). Also, there are concerns about the availability of the required infrastructure such as power to operate the food reserves at full capacity. Post - harvest losses due to inadequate storage facilities could be reduced by operating the existing food reserve at full capacity. This will in turn strengthen the supply chain for agricultural products, improve agriculture export competitiveness and ensure that the prices of domestic food items are stabilized.

v. Agricultural Mechanization

In Nigeria, agricultural mechanization is still in its infancy stage. Most agricultural activities are still done manually using hired labour. More than one third (35%) of the country's total labour force is employed in the agricultural sector (World Bank, 2020a). Nigeria has the least mechanized farming industries in the world with the country's tractor density put at 0.27 hp per hectare which is far from the FAO recommended density of 1.5 hp per hectare (Okojie, 2019). Experts have recommended that Nigeria would need about 700,000 additional tractors to meet up with the global mechanization standard (PWC, 2020). Mechanized farming requires huge capital investment. In Nigeria, one of the challenges of mechanization in that most of the farmers are small holder farmers who lack the financial capability to individually acquire machineries such as tractors, harrowers, harvesters etc. To overcome this challenge, farmers can come together through their cooperatives to acquire these machineries. Also, both state and local government can help acquire the machineries to support farmers in their constituencies. The recent approval of a loan facility of $1.2 billion by the Federal Executive Council (FEC) for FMARD to acquire farm machineries that will cover 632 local government areas (LGAs) as well as build 140 processing plants is commendable but more needs

to be done (Mojeed, 2020). In addition, providing conducive environment to facilitate both domestic and foreign direct investment could help agricultural mechanization in Nigeria.

vi. Decentralization of Agricultural Responsibility by Areas of Comparative Advantage

Every state and region in Nigeria has comparative advantage in the production of various kinds of agricultural products and so should take advantage of that as was the case in the 1960s. This will help ensure a competitive agriculture and food security in the nation. The best way State governments can get involved in the agriculture value chain may not be to go into direct farming but to provide conducive environment for private sectors to thrive by making good agricultural policies and providing adequate infrastructures such as good road networks, storage and processing plants, irrigation facilities etc. Many smallholder farmers incur a lot of post-harvest losses and often are forced to sell their produce at low prices due to lack of storage facilities. Therefore, provision and maintenance of rural infrastructure will go a long way in minimizing post-harvest losses and enhancing product evacuation.

The States could also come in to fill up the gap in the agricultural value chain where private sectors are not willing to take up, because of the long gestation period, such investments, like planting of economic trees, could take. Going into public-private partnership (PPP) could also be explored.

vii. Backward Integration of Agro-Allied Companies with Farm

Growth in the agricultural sector can be sustained through backward integration of the agro-industries with farms. Even though some large agro-industries such as Nigerian Breweries, flour mill of Nigeria, etc. have already taken steps to secure the supply of their primary inputs through backward integration with farms, many are yet to do so. The Government can encourage this process by incentivizing agro-industries who are making efforts to secure the supply chain through backward integration with farms.

viii. Re-Establishment of Farming Cluster

About 80% of farmers in Nigeria are small holder farmers and produce about 90% of the country's agricultural output (Unah, 2018). Organizing these farmers into farming clusters could help stimulate agglomeration economies by integrating agricultural value chains such as farmers, agro-input dealers, agro-processors, industrial manufacturers, etc. The CBN's Anchor Borrowers Programme (ABP) is one attempt to bring back farming clusters in Nigeria. To ensure the efficiency of this farming clusters there must be adequate facilities (such as storage, processing, farm machineries, irrigation, distribution, etc) provided at each cluster. Besides, given that Government may lack the resources to provide all these, they can partner with private sectors through PPP. Agglomeration through PPP is the main driver of agricultural revolution across many South American countries such as Brazil, Argentina, etc. Nigeria can also tow that path.

ix. Investment in Research and Development (R&D)

For Nigeria to experience significant improvement in agricultural productivity and enhance both domestic and global competitiveness of its agricultural produce it must prioritize R&D. Unfortunately, investments in R&D in Nigeria over the years has been considerably low. In 2019, ₦40 billion was allocated for agricultural research agencies and close to half of it went into personnel and overhead cost (PWC, 2020). There is the urgent need to strengthen rural development and ensure sustainable agricultural production by promoting research on improved inputs and technologies.

CONCLUSION

The COVID-19 pandemic has had an enormous impact on agriculture and the global economy at large. Countries are still battling the pandemic and its effects on agriculture are still unfolding. Although the agricultural sector may have proven to be largely resilient in the face of the pandemic, owing to the important role the sector plays in any economy, further disruptions could undermine its resilience with damaging consequences.

Currently, there is no reason why the ongoing pandemic should result in food crisis. However, further disruptions to food supply chains pose a major threat to global food security. Hence, Governments' agricultural policy choices will play an important role in determining how the situation evolves. Commitment and transparency on the part of Governments in ensuring the continued functioning of global and national food supply chains will be vital in securing food supply, averting food crisis in nations that are before now experiencing food and nutrition security challenges and abating the overall negative impact of the COVID-19 pandemic on the global economy. Some structural factors such as escalating levels of insecurity and violent extremism, weak early warning system and lack of preparedness is exacerbating the impacts of COVID-19 and is obstructing agricultural production in Nigeria and so must be tackled if the nation is to make meaningful progress.

REFERENCES

Andam K.S., Edeh H., Oboh V., Pauw K. and Thurlow J. (2020a). Impacts of COVID-19 on food systems and poverty in Nigeria. *Advances in Food Security and Sustainability*, **5,** 145-173. https://doi.org/ 10.1016/bs.af2s.2020.09.002

Andam K.S., Edeh H., Oboh V., Pauw K. and Thurlow J. (2020b). Estimating the economic costs of COVID-19 in Nigeria. *Nigeria Strategy Support Program (NSSP) Working Paper* - (63) 19, p. 31. Retrieved from https://doi.org/10.2499/p15738coll2.133846on 29/06/2021

Aromolaran A., Issa F. and Muyanga M. (2020). The unintended consequences of COVID-19 lockdown in Nigeria: Future agricultures. Retrieved 30 Jun. 2021 from: https://www.future-agricultures.org/blog/the-unintended-consequences-of-covid19-lockdown-in-nigeria/

Agroberichten Buitenland. (2020). Impact of Covid-19 on India's Agrifood sector. Retrieved 2 Jul. 2021 from: https://www.agroberichtenbuitenland.nl/actueel/nieuws/2020/05/12/covid-19-impact-on-indian-agriculture

Amankwah A., Gourlay S. and Zezza A. (2021). Agriculture as a buffer in COVID-19 crisis: Evidence from five sub-Saharan African countries.

Anaeto E. (2020). COVID-19: Diaspora remittances under pressure. *Vanguard News*. Retrieved 30 Jun. 2021 from: https://www.vanguardngr.com/2020/06/covid-19-diaspora-remittances-under-pressure/

Andam K., Edeh H., Oboh V., Pauw K. and Thurlow J. (2020). Impacts of COVID-19 on food systems and poverty in Nigeria. *Adv. Food Secur. Sustain.*, **5,** 145-173. DOI: 10.1016/bs.af2s.2020.09.002

Andam K.S., Edeh H., Oboh V., Pauw K. and Thurlow J. (2020). Estimating the economic costs of COVID-19 in Nigeria. DOI: 10.2499/p15738coll2.133846

Berthout N. (2020). Nigeria: Shortage of maize is crippling the poultry industry. Retrieved 30 Jun. 2021 from: https://www.poultryworld.net/Meat/Articles/2020/8/Nigeria-Shortage-of-maize-is-crippling-the-poultry-industry-628784E/

Ewepu G. (2020). NASC assures farmers of accessing 81,000 MT of seeds for 2020 planting season. Retrieved 29 Jun. 2021 from: https://www.vanguardngr.com/2020/05/nasc-assures-farmers-of-accessing-81-000mt-of-seeds-for-2020-planting-season/

Falaju J. (2020). Farmers to access 81,000 MT certified seed. *The Guardian Nigeria News*. Retrieved 29 Jun., 2021 from: https://guardian.ng/business-services/farmers-to-access-81000mt-certified-seed/

FAO (2021a). *Monthly Report on Food Price Trends: GIEWS-Global Information and Early Warning System on Food and Agriculture.* Food and Agriculture Organisation Bulletin No. 4, Rome

FAO (2021b). *National Agrifood Systems and COVID-19 in Nigeria: Effects, Policy Responses and Long-Term Implications*. Food and Agriculture Organization, Rome. DOI: 10.4060/cb3631en

FGN (2020). *Bouncing Back: Nigeria Economic Sustainability Plan*. Federal Government of Nigeria. Retrieved 01 Jul. 2021 from: https://media.premiumtimesng.com/wp-content/files/2020/06/ESC-Plan-compressed-1.pdf

FRCN (2020). PMB releases 70,000 MT of grains to vulnerable Nigerians – FRCN. Retrieved 01 Jul. 2021 from: https://www.radionigeria.gov.ng/2020/04/01/pmb-releases-70000-tons-of-grains-to-vulnerable-nigerians/

HRW (2020). *Nigeria: Protect Most Vulnerable in COVID-19 Response*. Human Rights Watch. Retrieved 01 Jul. 2021 from: https://www.hrw.org/ news/2020/04/14/nigeria-protect-most-vulnerable-covid-19-response

ICPALD (2020). *Effects of COVID-19 on Livestock Sector in the IGAD Region and Proposed Policy: Operational Interventions.* IGAD Centre for Pastoral Areas and Livestock Development

Ilesanmi F., Ilesanmi O. and Afolabi A. (2021). The effects of the COVID-19 pandemic on food losses in the agricultural value chains in Africa: The Nigerian case study. *Public Health Pract.,* **2,** 100087. DOI: 10.1016/j.puhip.2021.100087

Ilesanmi O., Bello A. and Afolabi A. (2020). COVID-19 pandemic response fatigue in Africa: Causes, consequences, and counter-measures. *Pan Afr. Med. J.,* **37 (1),** 37. DOI: 10.11604/pamj.supp.2020.37.1.26742

ILO (2020). *Social Protection Spotlights*. Retrieved 12 Jul. 2021 from: https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---soc_sec/documents/publication/wcms_744612.pdf

IOM (2020). IOM Nigeria: COVID-19 strategic preparedness and response plan (Feb.-Dec., 2020). *ReliefWeb*. Retrieved 30 Jun. 2021 from: https://reliefweb.int/report/nigeria/iom-nigeria-covid-19-strategic-preparedness-and-response-plan-feb-dec-2020

Mojeed A. (2020). FEC approves $1.2 billion loan for agric mechanisation. Retrieved 01 Jul. 2021 from: https://www.premiumtimesng.com/agriculture/agric-news/392680-fec-approves-1-2-billion-loan-for-agric-mechanisation.html

Narayanan S. and Saha S. (2020). One step behind: The government of India and agricultural policy during the COVID-19 lockdown. *Rev. Agr. Stud.,* **10,** 112-127

NBS (2020). *Nigerian Gross Domestic Product Report*. National Bureau of Statistics. Retrieved 28 Jun. 2021 from: https://www.nigerianstat.gov.ng/pdfuploads/GDP_Report_Q2_2020.pdf

Nidhi S. and Kumar M. (2019). Applying modern tech to agriculture. Retrieved 02 Jul. 2021 from: https://www.downtoearth.org.in/blog/agriculture/applying-modern-tech-to-agriculture-66017

NCDC (2020). *First Case of Corona Virus Disease Confirmed in Nigeria.* Nigeria Centre for Disease Control. Retrieved 29 Jun. 2021 from: https://ncdc.gov.ng/news/227/first-case-of-corona-virus-disease-confirmed-in-nigeria

NACC (2019). *SMEs and MSMEs Opportunity.* Nigerian-American Chamber of Commerce. Retrieved 01 Jul. 2021 from: https://nigerianamericanchamber.org/sme-msme-opportunity/

Odutola A. (2020). Nigeria to lose over $160 million to cocoa, cashew exports over COVID-19. *Nairametrics,* Retrieved 30 Jun. 2021 from: https://nairametrics.com/2020/04/20/nigeria-to-lose-over-160-million-to-cocoa-cashew-exports-over-covid-19/

Ojewale C. (2020). Has Buhari emptied Nigeria's food reserves? *Businessday NG*. Retrieved 30 Jun. 2021 from: https://businessday.ng/agriculture/article/has-buhari-emptied-nigerias-food-reserves/

Okojie J. (2019). Agric 2019 budgetary allocation declines by 20% despite FG's food security quest. *Businessday*. Retrieved 30 Jun. 2021 from: https:// businessday.ng/agriculture/article/agric-2019-budgetary-allocation-declines-by-20-despite-fgs-food-security-quest/

Oseni G., Palacios-Lopez A., Mcgee K. and Amankwah A. (2020). Tracking the socioeconomic impacts of the pandemic in Nigeria: Results from the-19 National Longitudinal Phone Survey. *World Bank Blogs.* Retrieved 30 Jun. 2021 from: https://blogs. worldbank.org/opendata/tracking-socioeconomic-impacts-pandemic-nigeria-results-first-three-rounds-nigeria-covid

Oyekanmi S. (2020). Nigeria's inflation rate hits 13.71% as food prices soar. Retrieved 30 Jun. 2021 from: https://nairametrics.com/2020/10/15/breaking-nigerias-inflation-rate-hits-13-71-as-food-prices-soar/

Perchstone and Graeys. (2021). *Assessing the Potential Impact of Agriculture in Nigeria's Post COVID-19 Economic Recovery.* Real Estate and Construction, Nigeria. Retrieved 28 Jun. 2021 from: https://www.mondaq.com/nigeria/land-law-agriculture/1025632/assessing-the-potential-impact-of-agriculture-in-nigeria39s-post-covid-19-economic-recovery

PWC (2020). Responding to the impact of COVID-19 on food security and agriculture in Nigeria. Retrieved 28 Jun. 2021 from: https://www.pwc.com/ng/en/assets/pdf/impact-covid19-food-security-nigeria.pdf

SAHEL (2014). The Role of Women in Nigerian Agriculture. Retrieved 01 Jul. 2021 from: https://sahelcp.com/wp-content/uploads/2016/12/Sahel-Newsletter-Volume-7.pdf

Sanni K. (2020). COVID-19: FG gives Kano 139 truckloads of foodstuff. *Premium Times*. Retrieved 01 Jul. 2021 from: https://www.premiumtimesng.com/coronavirus/393317-covid-19-fg-gives-kano-139-truckloads-of-foodstuff.html

Scoones I. (2020). COVID-19 lockdown in Zimbabwe: A disaster for farmers. *Zimbabweland Blogpost.* Retrieved 02 Jul. 2021 from: https://zimbabweland.wordpress.com/2020/04/27/

Shimeles A., Verdier-Chouchane A. and Boly A. (2018). Introduction: Understanding the challenges of the agricultural sector in sub-Saharan Africa. *Building a Resilient and Sustainable Agriculture in Sub-Saharan Africa*. Springer International Publishing. DOI: 10.1007/978-3-319-76222-7_1

SWOFON. (2020). *The Impact of COVID-19 on Small-Scale Farmers in Nigeria*. Small-Scale Women Farmers Organization in Nigeria, Heinrich Böll Stiftung. Retrieved 29 Jun. 2021 from: https://www.boell.de/en/2020/08/04/impact-covid-19-small-scale-farmers-nigeria

Tamru S., Hirvonen K. and Minten B. (2020). Impacts of the COVID-19 crisis on vegetable value chains in Ethiopia. *IFPRI Book Chapters*, **18,** 81-83

Unah L. (2018). Agritech startups aim to lift Nigerian smallholder farmers out of poverty. *Devex.* Retrieved 01 Jul. 2021 from: https://www.devex.com/news/agritech-startups-aim-to-lift-nigerian-smallholder-farmers-out-of-poverty-92646

UNDP (2020). *The Covid-19 Pandemic in Nigeria: Citizen Perceptions and the Secondary Impacts of COVID-19*. United Nations Development Programme in Nigeria, Brief No. 4. Retrieved 30 Jun. 2021 from: https://www.ng.undp.org/content/nigeria/en/home/library/mdg/the-covid-19-pandemic-in-nigeria--citizen-perceptions-and-the-se.html

USAID (2020). COVID-19 impact on business: Survey report. *West African Trade and Investment Hub*. Retrieved 30 Jun. 2021 from: https://westafricatradehub.com/reports/

WFP (2020a). Impact of COVID-19 on livelihoods, food security and nutrition in East Africa. *Urban Focus*. Retrieved 02 Jul. 2021 from: https://docs.wfp.org/ api/documents/WFP-0000118161/download/?_ga=2.120690831.669530558.1625212145-687713997.1625104482

WFP (2020b). World Food Programme to assist largest number of hungry people ever, as coronavirus devastates poor nations. *World Food Program.* Retrieved 01 Jul. 2021 from: https://www.wfp.org/news/world-food-programme-assist-largest-number-hungry-people-ever-coronavirus-devastates-poor

Willy K., Diallo Y., Affognon H. *et al.* (2020). Covid-19 pandemic in Africa: Impacts on agriculture and emerging policy responses for adaptation and resilience building. *Technol. Afr. Agric. Transform.Working Paper* No. WP01

World Bank (2020a). Employment in agriculture (% of total employment) (modeled ILO estimate), Nigeria data. Retrieved 28 Jun. 2021 from: https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=NG

World Bank (2020b). *Nigeria COVID-19 Preparedness and Response Project (P173980)*. World Bank Project Information Documents, Washington DC. Retrieved 01 Jul. 2021 from: https://www.worldbank.org/en/news/loans-credits/2020/08/06/nigeria-covid-19-preparedness-and-response-project