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COVID-19 Pandemic: Implication on Nigeria Agriculture and Role of Extension

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Abstract

The paper focused on COVID-19 pandemic, its implication on the Nigeria agriculture and the role of extension. The review uncovered a subtle but undeniable negative impact on all the value chain of the Nigeria agriculture. One of the most important factors that may avert this negative impact is agricultural extension service. With lockdown, travel ban and social distancing, the way out becomes technology. Government and institutions at all levels should intentionally deploy technology tools to aid effective agricultural extension service to farmers.

Keywords: COVID -19 impact, food security, e-extension, technology application.

Introduction

COVID-19 is continuing to spread around the world, causing tough times for many economies and sectors, including agriculture - posing serious challenges for the sustainability of food supply and agricultural markets. (Jámbor, Czine and Balogh, 2020). According to World Farmers Organization (2020), the pandemic outbreak of COVID-19 has an impact on the entire food supply chain, confirming in the most terrible way that we are all part of a food system that is interconnected and fragile.

As stated by Bashuna and Addom (2020), Sub-Saharan Africa Agriculture is largely dominated by smallholder farmers, many of whom dwell in rural areas, faced by climate variability and resource constraints. Thus, with the negative impact of COVID-19 pandemic on agriculture, food security could become a major challenge, coupled with poverty and malnourishment. Food Supply chain is a complex web of interactions and of actors, ranging from producers, inputs, transportation, processing plants and shipping (FAO, 2020b), thus, a distortion in any part of this systemic chain could lead to unimagined hunger. According to Schmidhuber, Pound and Qiao (2020) agriculture is an input-intensive industry. The intensity of use of each factor of production can vary considerably across agricultural systems and expose farmers to changes in input costs.

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In this light, this article is aimed at reviewing the impact of COVID-19 on agriculture – whether it is a smooth drive or a 'nose dive?'.

Origin of COVID-19

With the wide spread of COVID-19, one could be tempted to wonder if it has been in existence for decades. To put this, and its impact on agriculture in perspective, it is important to look into the origin of the virulent virus.

Coronavirus was first identified in 1960. This was again reported in years 2001 to 2003, and 2012 in Saudi Arabia where it was reported to have infected and killed so many patients (Kumar, Malviya and Sharma, 2020; WHO, 2003). However, the novel Corona virus disease, also known as COVID-19 was first identified in patients with severe respiratory disease in Wuhan - China, in December, 2019 – hence the name COVID-19. According to Shereen, Khan, Kazmi, Bashir and Siddique (2020), towards the end of 2019, the Chinese government informed the World Health Organization about several cases of pneumonia with unfamiliar etiology. The outbreak started in the Wuhan seafood market in Wuhan city of China, where live animals such as bats, frogs, snakes, birds, marmots and rabbits, are usually sold (Wang, Horby, Hayden and Gao, 2020). This virus was reported to rapidly infect more than 50 people.

According to WHO (2020a), "retrospective investigations by Chinese authorities have identified human cases with onset of symptoms in early December 2019. While some of the earliest known cases had a link to a wholesale food market in Wuhan, some did not. Many of the initial patients were either stall owners, market employees, or regular visitors to the market. Environmental samples taken from this market in December 2019 tested positive for SARS-CoV-2, further suggesting that the market in Wuhan City was the source of this outbreak or played a role in the initial amplification of the outbreak".

The causative agent was researched to be a novel coronavirus scientifically named Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) (Huang, 2020; Zhou, 2020). Corona virus infected patients have many common features such as fever, cough, and fatigue, while diarrhea and dyspnea (shortness of breath) were found to be as uncommon feature (Kumar, Malviya and Sharma, 2020).

Since the outbreak of the novel corona virus, there have been global tension and uneasiness in world economies. This is apart from the alarming rate of infected persons –which as at the time of writing (18th July, 2020), stands globally at 13,876,441 and 35,454 in Nigeria. The dead toll by the virus is 593,087 globally and 772 in Nigeria (WHO, 2020b; Nigeria Centre for Disease Control - NCDC, 2020). Although there is no vaccine or cure for the virus (as at the time of writing), each nation is trying to contain and manage the situation, with collaborations and help from one another. For example,

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on the 17th of April, 2020, the Chinese government donated massive supplies to the Nigeria government to help in the fight against the virus. It was also reported that the Indian government had offered same gesture. But among these, very little or no direct and/or indirect effort have been made towards the agricultural sector. Perhaps this is because the impact of the virus on the sector has not been fully explored.

The Impact of COVID-19 on Agriculture

COVID-19 has had it toll on global agriculture and its related value chain. The disease has great impediment on the activities of not just humanity, but agriculture has also been greatly hampered. According to International Labour Organization (2020), with the continuous spread of COVID-19 across the world, it is essential to address its existing and potential impacts on the agri-food sector. It is no doubt that many processing, packaging and transportation activities have been hindered, leading to artificial scarcity of essential commodities. Little wonder when the news of isolation was blared, people rushed to agricultural supply centres and markets, for bulk purchase and storage. According to Obayori, Nchom & Yusuf (2020), there was decrease in farm-to-market distribution of agricultural products. On the other hand, one concern becomes apparent - whether food retailers are taking advantage of the pandemic by either raising prices to consumers or lowering prices paid to suppliers (Hart, *et al*., 2020). In the words of Siche (2020), food demand and thus food security are greatly affected due to mobility restrictions, reduced purchasing power, and with a greater impact on the most vulnerable population groups.

The attendant effect of COVID-19 can also be felt in the area of food availability in Nigeria. The closure of border and the disruptions in the normal functionality of market and the agricultural supply chain prevented farmers and pastoralists from selling their products, thus affecting incomes and limiting the availability of financial resources for the purchase of inputs and the continuation of agricultural activities (FAO, 2020b). According to the International Labour Organization (2020), logistic issues within supply chains, particularly cross-border and domestic restrictions of movement, as well as labour issues, led to disruptions in food supply, especially that the restrictions persisted.

With the lockdown and restriction of movement, agricultural labour was stalled, which consequently result in reduced production. The unavailability of labor represents one potential source of disruption that could affect many facets of the agricultural economy. Disruption in labour supply affects both farm-level production and other important downstream supply chain activities (Anderson, 2020).

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The restricted labour movement also aggravated hunger and poverty, since most of the unskilled labour survive by it. Thus, COVID-19 is further negating the concerted efforts towards the Sustainable Development Goals (SDGs) of no poverty and zero hunger. According to International Labour Organization, cited in Omekwe and Obayori (2020), "COVID-19 is causing losses in labour and such negative effects are anticipated to be far worse than the financial crisis of 2008-2009". From the projection of the World Food Program (WFP, 2020), COVID-19 pandemic could plunge 265 million people into acute food insecurity by the end of 2020. This estimate has increased from 2019 estimate of 135 million people, making it a 96.3% increase.

Restriction measures, although focused on containing the spread of the virus and preserving people's health, are likely to affect a broad range of sectors, including agriculture and food security, with varying degrees of severity (FAO, 2020b). The food supply chain, which is a network of connections, linking agricultural system (the farm) with the consumer's table, including processes such as manufacturing, packaging, distribution, and storage (Chen, Brahma, Mackay, Cao and Aliakbarian, 2020), has been immensely roughened. Proper food supply chain has suffered because of the restricted movement and interstate travel ban, thus creating a dichotomy between areas of production (experiencing relative food availability) and areas of consumption (experiencing relative scarcity).

The Role of Extension

Curbing looming hunger and perhaps heightened poverty will require the government to deliberately make provisions to help the rural, small holder farmers – who account for over 80 percent of the total farmers in the country (Sabo, Isah, Chamo and Rabiu, 2017). The first point of call becomes agriculture because the sector is the largest single employer of labour in the country, providing direct and indirect employment to about 36.4% of the labour force, and generating about ₦803 billion in export (Price-waterhouse Coopers, 2020). A dysfunction in this sector can lead to untold negative consequences. This is particularly important because the pandemic has negatively impacted on the price and trade of crude oil – which the Nation has relied upon mainly as the primary source of economic strength. On the other hand, agriculture has proven to be a reliable economic force in previous times of turbulence. For example in 2016, when oil price crash led to a recession in the country, with a negative growth of the oil sector by 13.65%, the agricultural sector grew positively by 4.11% (Price-waterhouse Coopers, 2020).

Although the government has played a significant role in providing food and cash palliatives to poor folks, how long can this be maintained? Coupled with the fact that many have cried out that the stated palliatives either never got to them or wasn't just enough. Thus, a more sustainable and lasting architecture is needed to ensure unhindered food security. Another giant stride on the part of the federal government,

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which is worthy of acknowledgement, have been the granting of no-interest/ single-digit-interest loans, with lengthened moratorium period, to farmers. However, with the changing season, farmers may need to switch production focus to other high demand goods; search for alternative sources of inputs. This analysis and strategies can only be made and brought to farmers by extension advisory services.

> *"Agricultural extension and advisory service (EAS) systems play an indispensable role at the frontline of the response to the pandemic in rural areas. However, to adapt to the emergency context within the government regulations, EAS providers need to rapidly change their way of operating (FAO, 2020c).*

Agricultural extension is one of the most important tools that can be helpful to increase production and overcome the food security problem, offer support to farmers and provide them with adequate information about the pandemic. Through this, food supply can be increased and demand pull inflation reduced (Muhammad, Li, Jia, Sidra, Yasir, Mazhar and Shah, 2014). The changing nature of livelihood and mood of interaction - as a result of the pandemic, entails that the approach of service delivery should consequently change. While traditional extension approaches such as farmer field school, farm visit and farm demonstration, have proven successful previously, changing times, necessitated by the pandemic and consequent lockdown, demands that extension approach should consequently change. And the way to go is to leverage on technology.

For more than three decades, technology has given people access to participate in the world in which agricultural activities, education and work have been progressively enhanced by access to these technologies. Modern information and communication technologies have created a "global village" through which people could reach and communicate with others across the world as if they were living the next door (Halewood and Surya, 2012).

The progress made with digitalizing agriculture in Africa over the years can be used as a strong foundation for new initiatives to alleviate the COVID- 19 impact on food security (Bashuna and Addom, 2020). Meetings, work, conferences, seminars, etc. are currently held on online platforms. Also, the time is right for agricultural extension to shift focus to technology driven methods of operation. This demands the usage and implementation of tech-tools to establish contact, create awareness and disseminate helpful information to target farmers, to aid smooth production, and of course, food security. This approach will avail the needed services to farmers, bridge the production – supply gap, while containing the spread of COVID-19, by reducing human to human contact, improve

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local food production to avail food to local households, connect demand to supply using this platform, and facilitating other informal marketing channels.

Nigeria should revisit some of the technologies that prove successful, which can allow social distancing among participants such as the use of mobile telephone for information designation such as during the credit scheme program of the Good-Luck Jonathan led administration.

This technology has proven successful even outside Nigeria. According to Sousa, Nicolay and Home (2016), third generation mobile phones (3G) with video and Bluetooth technology are widespread in rural parts of Mali and Burkina Faso and appear to be changing the way farmers access information. Sousa *et al.* (2016) asserts that this technology replaced the top-down information transfer and create a horizontal platform of information exchange among the rural population.

In Nigeria, the National Farmers Help, which was established by the Federal Ministry of Agriculture to increase productivity for sustainable agricultural development in the country across the six geo-political zones (Bashir *et al.,* 2020), should be scaled up to all the 36 states and 774 LGAs across the Country.

From the findings of Othman (2019) in Bashir, Adam, Abubakar, Faruk, Garuba and Francis (2020), farmers have gained enormous benefits from the information dissemination services. This is corroborated by the findings of Bashir *et al.* (2020), that the Farmers Help Line supplies farmers around with all the necessary information regarding agricultural production ranging from information on cultural practices, access to fertilizer and application, pest and disease management practices and weed management practices.

Thus, a decentralization of the technology will further facilitate widespread dissemination of good agricultural practice, serve as a medium for dissemination, training and delivery of improved technologies, market linkages and general advisory services, while ensuring less physical contact between the extension agents and farmers. Having correspondences at state level will help reduce traffic and increase timely response by extension agents. This could be a solution to the outrageous extension agents – farmers' ratio, reduce government budgetary allocation towards extension mobilization, especially in the face of COVID-19 pandemic.

Other technologies, which can facilitate widespread and faster extension coverage, while ensuring social distancing include:

Short video clips - which could be pre-recorded and sent directly to a pool of farmers. This can replace method and result demonstration methods;

Audio recording – this can replace lectures and seminars and other physical meetings.

Zoom calls, Google meet, Social media chats (WhatsApp, Facebook, Telegram, etc.) and use of Android applications such as the E-extension App could also be relevant in this face of COVID-19 and social distancing.

Conclusion

In times of uncertainty and instability in global economy such as this, a more sustainable and long lasting measure is needed to put hunger and poverty in check. Agriculture, having proven to be a reliable stimulus in times of turbulence, should be taken seriously. However, without necessary advisory services from technical experts and subject matter specialists, the effort may also be a 'wrong turn'. Thus, agricultural extension may be the needed 'Midas touch' to boost production and hence, food security. Furthermore, to facilitate this in the face of lockdown and social distancing, technology becomes the lee way.

Digital technology has long been in use for distant learning, purchases, securing inputs for farm operations, virtual conferences and meetings, among other purposes. The reality of this for the Nigerian extension is bleak. Agricultural institutions are decorated with obsolete and out-of-use equipment purported to be extension facilities. These facilities act as recipients of dust, without real life relevance. Thus, Government and institutions at every level should make concerted effort to digitalize extension service provision, not just for today – which is necessary to ensure food security – but in the years that follow. Also, the curriculum of both public and private extension institutions and agencies should be reviewed to incorporate these digital technologies, alongside retraining of extension workers to enable them train farmers on the access and utilization of the technologies.

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