Commentary

The effects of the COVID-19 pandemic on food losses in the agricultural value chains in Africa: The Nigerian case study

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ABSTRACT

The Coronavirus disease (COVID-19) pandemic has wrecked great havoc in many spheres of life, including the educational, health, economic, and agricultural sectors. To break the transmission chain of SARS-CoV-2, public health safety measures such as social distancing, regular hand hygiene, border closure, restrictions on internal movement, and lockdown were implemented. Some of these measures have however contributed to reduced economic power, shortage of labor for agricultural production, and huge losses in the agricultural sector. To avert the effects of the COVID-19 pandemic on food losses in the agricultural value chain in Nigeria, much precedence should be placed on adequate stakeholder engagement. Amid the COVID-19 pandemic, logistics for unhindered agricultural trade should be put in place. In addition, policy makers should implement the institutionalization and implementation of social protection system in Nigeria. To address the financial difficulties during the COVID-19 pandemic, provision of loans and grants should be commenced in an organized fashion.

1. Introduction

The novel Coronavirus disease (COVID-19) outbreak is a global health event caused by the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) [1,2]. COVID-19 was declared a public health emergency on the 30th of January 2020, and a pandemic on the 11th March 2020 by the World Health Organization [2]. COVID-19 has wrecked great havoc in many spheres of life, including the educational, health, economic, and agricultural sectors [1,2]. Although this havoc has been experienced globally, the effects of the COVID-19 outbreak has been more severe in low and low-middle-income countries. COVID-19 has been rapidly transmitted across 218 countries, and more than 86 million cases and 2 million deaths have been reported as of 9th January 2021 [3]. Of the global total, Africa has reported 2,830,462 3,021,769 COVID-19 cases (3.3%) and 72,121 (3.6%) deaths as of the reference period [3]. Although this proportion seems low, the poor-resourced nature of African countries aggravates the effects of the COVID-19 pandemic.

To break the chain of COVID-19 transmission, African countries implemented some public health safety measures (PHSM). The PHSM included social distancing, regular hand hygiene, closure of educational institutions, recommendations on the use of face masks, ban on public events, border closure, and lockdown [1,2]. Although implemented PHSM helped to keep the surge of the COVID-19 pandemic within limits, notable adverse effects of these PHSM have been experienced in Nigeria, with the agricultural sector suffering great losses during the first wave of the COVID-19 pandemic [4]. Therefore, adequate preparation is pertinent for the second wave of COVID-19 to ensure that resulting losses are kept to a very minimal level.

The African continent is made up of 54 countries that are distributed across the Northern, Southern, Eastern, Central, and Western sub-regions [5]. Nigeria, located in the Western sub-region, is the most populated country in Africa with 207 million people as of December 2020 [5]. In many Nigerian communities, agriculture is frequently practiced both for local food production and a source of income [4]. Because food is a necessity, its demand is less often affected by the decline or increase in the demand for other goods and services. The agricultural sector is responsible for the production and supply of food items. It also provides job opportunities, and a stable source of growth to the national economy [4]. Assessing the effects of the COVID-19 pandemic on the agricultural sector provides adequate information on the disruption of the food supply chain to members of the Nigerian population. Knowledge obtain in this regard would be crucial to expand the national capacity for enhanced preparation for the second wave of the COVID-19 pandemic in Nigeria. Therefore, this study aimed to describe the effects of the COVID-19 pandemic...
on food losses in the agricultural value chains in Africa, using Nigeria as a case study.

2. Effects of the COVID-19 pandemic on agricultural production and income generation

The lockdown measure and restriction of movement during the COVID-19 pandemic contributed to a shortage of labor for agricultural production [6]. In Nigeria, agricultural labor is operated manually daily due to the unavailability of mechanized farming tools. Annually, periods of peak agricultural activity necessitate high demand for labor, but the lockdown and restriction of movement therefore limited access to farmlands by farmers and laborers [6]. As a result, the available workforce for cultivating farmlands diminished, and agricultural production across the country reduced. The harvesting period of some crops such as maize, rice, sorghum, millet, tomatoes, and cucumber which are highly perishable fell between March and July. However, the PHSM implemented during this period resulted in a shortage of labor for harvesting crops, spoilage of ready-to-harvest farm produce, and food shortages in the market. These events resulted in increased cost of food items, hunger and subsequently protest by Nigerians [6].

A similar experience was reported in China where the production, distribution, and sales of vegetables and other agricultural products were adversely affected by the COVID-19 pandemic [7]. Also, a disruption of the seed supply chain, agrochemicals and fertilizer importation resulted, thus reducing viable seeds, and limiting the yield of agricultural produce [7]. In Nigeria, the markets for perishable food items were unfavorably affected by workplace closure at the processing and packaging departments of food companies [8]. The transportation of these perishable produce to the market were hindered as a result of travel restrictions put in place, and this resulted in an increase wastage of food items [8]. The increasing rate of COVID-19 cases also necessitated shift duties, thus reducing available manpower to ascertain food safety and quality [8].

3. Effects of the COVID-19 pandemic on household food security

Household food security is a framework defined by four fundamental dimensions, namely: availability, accessibility, stability, and utility [9]. These four dimensions have been used to describe the measure of food intake per household per day in each country and have been linked to healthy/diseased state [9]. The occurrence of disease or good health is a measure of the adequacy of food nutrients consumed. High levels of animal protein deficit have been reported in Nigeria, however, livestock production rapidly bridges this deficit [4]. This is due to the limited period of growth and regeneration, as well as the presence of large protein portions. More often, livestock bred at the household level play a crucial role in alleviating poverty, enhancing income generation, and assuring food security [4].

The COVID-19 pandemic has however resulted in a reduction of livestock production both in small and large scales [4]. This event primarily stems from the reduced money in circulation during the COVID-19 pandemic, and reduced earning among many individuals [6]. Thus, the purchase of livestock feeds and drugs seemed unrealistic. For this cause, household savings in the pre-COVID-19 period in Nigeria was expended on basic food items which could assure of survival. For many households, although food items were available at the market, nutrient-rich foods including vegetables were not accessible, and thus could not be utilized for body growth and development [4,6]. The non-availability of social safety net to cater for stable food supply to the members of the Nigerian population heightened the inadequate food supply during the COVID-19 pandemic [6]. Anecdotal reports from some communities in Nigeria reported an increased proportion of malnourished children and adults during this period; a factor that could increase their vulnerability to SARS-CoV-2.

4. Opportunities for maintaining flexible supply chain in the agricultural sector amid the COVID-19 pandemic

Despite the implemented PHSM, keeping domestic and international trades open are crucial to ensuring the delivery of food items to places where they are needed [4]. Measures such as the issuance of a valid COVID-19-negative test result to conveyers of perishable food items from the originating state or country only should be implemented and enforced [1]. The food sector is critical; therefore, COVID-19 tests should be rapidly conducted among food producers. Adequate management such as home-based care should commence for positive COVID-19 cases [1]. Online purchase and home food delivery system should be engaged in to reduce the need for movement in search of food during lockdown. The COVID-19 vaccine distribution process is ongoing; however, workers in the food industry should be prioritized on the vaccination list to ensure that the food chain is not disrupted amid the COVID-19 pandemic [10]. To achieve this, public-private partnership is key [10]. For food production and processing companies, all-time availability of face masks should be ensured, and social distancing should be practiced as often as possible. To ensure compliance to the above-mentioned measures, adequate engagement of the Organized Labor groups should be prioritized.

The establishment of social safety net is mandatory to ensure that food insecurity does not result to an increased proportion of lives lost while PHSM are implemented amid the COVID-19 pandemic [2]. To this effect, social protection such as the regular distribution of palliatives and cash transfers during outbreaks of infectious diseases should be integrated into the Nigerian legal framework [2]. Responsible and competent personnel should be appointed to oversee these tasks. The National Bureau of Statistics should be kept up to date on its records to ensure that the estimated population for the social protection scheme is accurate. Many equipment such as silos and barns that are used for storing farm produce are in a poor state in many states in Nigeria. To salvage the impending agricultural loss and wastage during the COVID-19 pandemic, a repair and/or replacement of these storage equipment is pertinent.

5. Conclusion

In the wake of the COVID-19 pandemic, building resilience of the agricultural system should be accorded top priority. The COVID-19 pandemic highlights the existing gaps in the Nigerian agricultural system, food supply chain, and weakness in absorbing shocks resulting from disease outbreaks. To avert the effects of the COVID-19 pandemic on food losses in the agricultural value chain in Nigeria, much precedence should be placed on adequate stakeholder engagement. Amid the COVID-19 pandemic, logistics for unhindered agricultural trade should be put in place. In addition, policy makers should implement the institutionalization and implementation of social protection system in Nigeria. To address the financial difficulties during the COVID-19 pandemic, provision of loans and grants should be commenced in an organized fashion.

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Authors’ contributions

FFI and OSI conceptualized the study. AAA and FFI wrote the initial draft. Both FFI, OSI, and AAA reviewed, edited, and revised the manuscript critically for important intellectual content. All authors have read and agreed to the published version of the manuscript.
Declaration of competing interest

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