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COVID-19 Pandemic and Arable Crop Farmers' Production Activities in Odeda Local Government Area of Ogun State, Nigeria

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Abstract

The study investigated COVID-19 pandemic and arable crop farmers' production activities in Odeda local government area of Ogun State, Nigeria. Specifically, it determined perception of other issues relating to COVID-19 pandemic, perceived effects of COVID-19 pandemic on their production and sales of farm produce and coping strategies to Covid-19 pandemic. Survey design was adopted for the study. The study population was the arable crop farmers in Odeda local government area that was made up of people of different ages. Data were collected with the aids of questionnaire which also served as interview guide. Multi-stage sampling procedure was used to select (120) respondents. Frequency distribution, percentage and mean were used for data analysis. The results indicated that all (100%) the respondents had full knowledge of the COVID-19 pandemic. The study showed that all (100%) the respondents were severely affected by the skyrocketing of farm input prices and inadequate supply of relief package as well as the pandemic had highly increased cost of production (93.3%). Majority (87.5%) of the respondents reduced the employment of hired labour in other to cope during lockdown. Majority (80.8%) also reduced the land sizes they would have normally cultivated because of the pandemic.

Keywords: Activities, Arable, Coping Strategies, COVID-19, Crop Farmers, Perception.

Introduction

COVID-19 pandemic was the second major pandemic the world has encountered in the 21st century. Predating it was the influenza A H1N1 of 2009 (Badejo *et al.*, 2020; Miranda *et al.*, 2022). To Vellingiri *et al.* (2020), however, COVID-19 was the most dangerous global pandemic threat since its outbreak in December 2019. As of April 18, 2020, more than 200 countries/regions had reported confirmed COVID-19 cases. Some of the countries included China, Italy, Iran, South Korea, India, Switzerland, Taiwan, United states of America U.S.A., Sweden, Singapore, Sri Lanka, France, Australia, Malaysia, etc. (Tang *et al.*, 2022).

On February 27, 2020, the Federal Ministry of Health confirmed the first COVID-19 case in Ogun State, Nigeria,

making the country the third country in Africa to recognize an imported COVID-19 case after Egypt and Algeria (Dan-Nwafor *et al*., 2020). Nigeria recorded the subcontinent's first confirmed case, after which it began to spread throughout Lagos, Ogun State, and the Federal Capital Territory (FCT) area of Abuja. The arrival of the pandemic set off a chain of policy actions, including public health and education campaigns, fiscal and monetary measures, restrictions on large sections of the economy, and compensating measures in the form of social protection for poor and vulnerable people (Andam, 2020). In addition to posing a major health challenge for developing countries, COVID-19 was having severe socio-economic impacts. For Nigeria's economy, an immediate concern was the sharp drop in oil prices, which threatened to undo years of moderate economic growth in Nigeria and many other oil-dependent African countries (Kanupriya, 2020).

The Nigeria agricultural sector holds the key to country's drive for economic diversification. The sector has grown consistently at an average of 2.6 percent over the last three years. As at first quarter of year 2020, agriculture accounted for more than 22 percent of the Nigerian gross domestic product compared to oil and gas (9.5%), manufacturing (9.7%), financial services (3.8%) and trade (16.1%) (Azubuike & Ebere, 2020).

In addition, the agricultural sector remains the highest employer of labour (Yeboah and Jayne, 2018). However, Nigeria still faces many challenges; some of these include adverse weather conditions associated with climate change, herder-farmer clashes, terrorism in the north-east, and low level of mechanization, poor research and development activities. With COVID-19, the challenges hampering the attainment of food security in Nigeria could deepen. The impact was been felt in form of rising food crises. By April 2020, inflation had risen to 15 percent from 14.7 percent in December 2019 (Azubuike & Ebere, 2020). After spreading through East Asia, Europe, and North America in early 2020, the COVID-19 global pandemic started affecting countries in Africa and Latin America. With the largest population in Sub-Saharan Africa, and long-standing travel and trade links within Africa and to the rest of the world, it seemed inevitable that the pandemic would eventually reach Nigeria.

Arable farming is a type of crop production that produces a wide range of annual crops (Hajdu & Mamonova, 2020). This means that the crop life cycle, from germination to seed production, is complete within one year. Depending on the type of use, there are a few different types of arable crops. These include: Grain crops, Pulse crops, Oil seed crops, Forage crops, Fiber crops and Tuber crops. Gonzalez-Sanchez, *et al*. (2015) opined that arable crop production refers to the systematic use of land to grow crops. Farmers check how fertile their land is and undertake a process of preparation following the previous year's harvest to ensure a steady supply of their valued produce. The state's farmers, particularly the poorer ones, were subjected to a systematic lockdown.

The government lockdown in Nigeria, especially in Lagos State, Ogun State, and Abuja Federal Capital Territory, which began at the end of March 2020, came as a shock to Nigerian arable crop farmers. As security officers imposed mobility restrictions everywhere across the country, many farmers were unable to access their fields. Farmers' access to

markets was severely hampered as well. Since most arable crop farmers lack storage facilities, they were forced to either watch their fruits and vegetables perish or sell them to opportunistic middlemen for a low price. Hence, many company owners were caught off guard when enterprises and social activities were shut down. As a result, income losses were incurred, and because many were in the informal sector, many had to deplete their meager savings. The shutdown had a particularly negative impact on farmers. (Phillipson *et al.,* 2020).

In addition, since the outbreak of coronavirus (COVID-19) Pandemic disease, many countries had shut down their economic activities and ordered their citizens to stay at home and observed precautionary measures as advised by World Health Organization to curtail the spread of the pandemic disease. It therefore becomes imperative to assess the impact of lockdown in Odeda local government which is home to most arable crop farmers in Ogun state.

In sub-Saharan Africa, almost six out of ten people reside in rural areas, according to the World Bank (2020). Similar to the Odede local government area, the population is made up of people of different ages, including those who are at high risk of contracting COVID-19, such as the elderly. Lack of access to quality healthcare and coverage, as well as a shortage of medical personnel, has been the primary issues affecting the study area's health services. Odeda zones are also seen in clusters, suggesting that regular human contact is unavoidable. In Odeda regions, it has been demonstrated that family and community clustering influences COVID-19 responses. Amidst the pandemic's attack, people in Odeda areas sought to cling to their cultural and customs because it would be difficult to adapt socioculturally. This presented a threat to the government and health authorities of Nigeria's implementation of stay-at-home directives, physical distancing, and other preventative measures (Olajide & Ladigbolu, 2020).

However, arable crop farmers, whose farm produce were susceptible to rotting due to their perishable natures, were particularly hard hit, particularly in Odeda local government area, which shares a border with Abeokuta's main town (the state capital of Ogun State). Notwithstanding the interventions made by the Nigerian government, such as palliative care, the Nigeria Centre for Disease Control (NCDC), which is tasked with fighting pandemics like the Novel Coronavirus in Nigeria and providing information on prevention, control, and mode of transmission through a variety of media and sources, including the NCDC website, radio and television jingles, newspaper columns, social media platforms, and other online sources (NCDC, 2020). Additionally, policies and stimulus packages were called for by the players in the agricultural supply chain, who were also at the forefront of the COVID-19 pandemic in assuring food security by providing crop growers with free seeds, seedlings, agrochemicals, and inorganic fertilizers (Akinhanmi *et al.*, 2023).

Most of the aforementioned interventions were designed particularly to the poorest families, the programme's planning and implementation were flawed. Many targeted families in urban regions, let alone those in Odeda rural areas, were not reached in many cases. It is critical to understand how arable crop producers were affected by the government's varied tactics for

minimizing the virus's spread in order to guide the future rationally and knowledgeably in situations like these.

The study region has not seen any noteworthy correlation between arable crop farmers' production activities and measures federal and state governments have put in place to combat the negative effects of CIVID-19 pandemic on arable crop farmers. Therefore, this called for investigation of COVID-19 pandemic and arable crop farmers' production activities in Odeda Local Government Area of Ogun State, Nigeria.

Purpose of the Study

The major objective of this study was to investigate the effects of COVID-19 pandemic on arable crop farmers' production activities in Odeda local government area of Ogun State, Nigeria. Specifically, the study determined the arable farmers':

(1) perception of other issues relating to COVID-19 pandemic,
(2) perceived effects of COVID-19 pandemic on their production and sales of farm produce,
(3) coping strategies to Covid-19 pandemic.

Methodology

***Design of the Study*:** The research design used in the study was survey.

***Area of the Study*:** The research was conducted in the Odeda local government area of Ogun state, which is 20 kilometers from Abeokuta. The LGA is a wide stretch of territory in Ogun State's Northwestern region, covering 1263.45km3 and home to roughly 217,000 people who mostly speak Yoruba dialect "*Egba*". Numerous food crops, including rice, maize, cassava, yam, cocoyam, oil palm, vegetables, and fruit trees, are grown in the area. The majority of the population is made up of farmers and traders, with a small number of government employees working for the state hospital, local government secretariat, and primary and secondary schools.

***Population for the Study*:** The study population was the arable crop farmers in Odeda local government area there was no comprehensive list of arable crop farmers in Odeda LGA of Ogun State, Nigeria. At Odede local government area, the population is made up of people of different ages, including those who are at high risk of contracting COVID-19, such as the elderly. Lack of access to quality healthcare and coverage, as well as a shortage of medical personnel, has been the primary issues affecting the study area's health services.

***Sample for the Study*:** A Multistage sampling technique was used which involved three stages: First stage: Five wards were randomly selected out of the 10 wards in Odeda Local Government Area. Second Stage: Two communities were randomly selected each from the 5 wards (Orile Ilugun, Olodo, Odeda, Kila and Olugbo) to make a total of 10 communities. Third Stage: Eligible (12) arable crop farmers that had the knowledge of COVID-19 pandemic were randomly selected and interviewed. Altogether, 120 arable crop farmers were used for the study.

***Instrument for Data Collection*:** Data were collected with questionnaire which also served as interview guide for illiterate farmers. Socio-economic characteristics of the respondents were measured at a nominal level, ordinal level and interval level. The perceived effects of COVID-19 pandemic on the respondents were measured at three points Likert response type as: Severe effect (3), Minor effect (2), No effect (1) on fifteen (15) statements. The grand mean was 2.43; mean value ≥ grand

mean was classified "high effect," and mean value < grand mean was classified "low effect". The arable crop farmers' perceptions of the pandemic were measured at five Likert response type as: Strongly agreed (5), Agreed (4), Undecided (3), Disagreed (2) and Strongly disagreed (1) on 10 statements. The grand mean was 3.80; as a result, mean value ≥ grand mean was classified "high perception statement," and mean value < grand mean was classified "low perception statement". And crop farmers' coping strategies to COVID-19 pandemic was measured at nominal level using dichotomous scale as: Yes (2), No (1) on twelve (10) statements. Reliability of the instrument was established using test re-test method. This was conducted on 20 arable farmers outside Odeda LGA. Cronbach's alpha value of 0.76 was obtained, indicating that the instrument was reliable.

***Data Collection Method*:** The participants were given a thorough description of the primary goal of the research. Those who were illiterate were assisted because the questionnaire functioned as a schedule for their interviews. The respondents were given one hundred and twenty (120) copies of the questionnaire by hand. All 120 copies were correctly completed and returned. This suggests a return of 100 percent.

***Data Analysis Technique*:** Frequency distribution, percentage and mean were used for data analysis.

Results

Socio-economic characteristics of the respondents

Data analysis indicates that some (44.2%) of the arable crop farmers were between 31 and 40 years old with mean age of 33 years, followed by 35.0 % that were within 41 to 50 years. Also, many (57.5%) of them were male and majority (95.0%) were married. The results show that many (63.3%) of the respondents had farming experience of between 11 to 20 years in arable crop farming. The results show that more than half (61.7%) of the respondents had household size of 3 to 6 persons, followed by 30.8% that had 7 to 9 persons. It was noted that some (42.5%) of the arable crop farmers earned between one hundred and fifty thousand Naira to three hundred thousand naira (₦150,000-₦300,000) as monthly income. Also, more than half (65.8%) of them employ hired labour for farming, followed by 23.3 percent who used family labour and most (69.2%) cultivated arable crops on about 11 to 20 acres (which is about 4 to 8 hectares) of farm land.

Table 1: Mean Responses on Perceived Effects of COVID-19 Pandemic on Arable Crop Farmers (n=120)

S/N	Perceived Effect Indicators	Mean	Rank
1	Skyrocketing farm input prices.	3.00	1st
2	Inadequate supply of relief package.	3.00	1st
3	High cost of production.	2.97	3rd
4	High cost of transportation.	2.88	4th
5	Covid-19 is dangerous to elderly and people with base ill health.	2.86	5th
6	Accessibility to regular market days.	2.82	6th
7	Blocking of extension service delivery.	2.80	7th
8	Fear of contracting the disease.	2.73	8th

Table 1 contd.

9	Scarcity of farm labourers.	2.34	9th
10	Low patronage for farm produce.	2.16	10th
11	Restricted movement on farm activities.	2.14	11th
12	Unfavorable government policy.	2.01	12th
13	Government tax on farm produce.	1.78	13th
14	Low product price.	1.77	14th
15	Lack of close substitute for farm inputs.	1.13	15th

Source: Computed from a field survey, 2022. Note: SE = Severe effect, ME = Minor effect, NE = No effect, F = Frequency, %= Percentage. Grand Mean 2.43

Table 1 shows that all the respondents were severely affected by the skyrocketing of farm input prices ($\bar{X}$ = 3.00) and inadequate supply of relief package ($\bar{X}$ = 3.00). The result also reveals that the pandemic had severe effect on the cost of production ($\bar{X}$ = 2.97) and transportation for majority of the respondents ($\bar{X}$ = 2.88).

Table 2: Mean Responses of Arable Crop Farmers' Perception of other Issues Relating to COVID-19 pandemic (n=120)

S/N	Perception Indicators	Mean	Rank
1	Pandemic increase encourages the high cost of production.	4.93	1st
2	Pandemic lockdown encourages spoilage of farm produce.	4.80	2nd
3	Pandemic has reduced my income.	4.75	3rd
4	Pandemic caused incessant increase in my expenditure	4.50	4th
5	It demoralized majority's participation in farming.	4.45	5th
6	Pandemic scare away extension service providers (extension Agents).	4.43	6th
7	It discourages international agricultural donors.	4.35	7th
8	Covid-19 reorganized the farming system.	4.24	8th
9	Covid-19 was orchestrated by set of people and government to scoop public funds.	3.37	9th
10	Covid-19 pandemic has nothing negative to do with arable crop farmers activities.	2.34	10th
11	Covid-19 is one of the oldest diseases in the world.	2.23	11th
12	Pandemic has increased my income.	1.22	12th

Source: Computed from a field survey, 2022. Where: F = Frequency, %= Percentage, SA= Strongly agreed, A= Agreed, U= Undecided, D= Disagreed, SD= Strongly disagreed. Grand Mean 3.80

Table 2 reveals that majority of the respondents strongly agreed that the pandemic increase encouraged the high cost of production ($\bar{X}$ = 4.93). The result also shows that majority of the respondents strongly agreed that the pandemic lockdown encouraged spoilage of farm produce ($\bar{X}$ = 4.80). The result further reveals that the pandemic had reduced the income of the respondents ($\bar{X}$ = 4.75). Other high perception statements of effect(s) of COVID 19 pandemic on arable crop farmers' production activities were: pandemic caused incessant increase in their expenditure ($\bar{X}$ = 4.50), it demoralized majority's participation in farming ($\bar{X}$ = 4.45), pandemic scared away extension service providers ($\bar{X}$ = 4.43), it discouraged international agricultural

donors ($\bar{X}$ = 4.35) and COVID-19 reorganized the farming system ($\bar{X}$ = 4.2).

Table 3: Frequency and Percentage Responses on Arable Crop Farmers' Coping Strategies to COVID-19 Pandemic (n=120)

S/N	Coping Strategy Indicators	F (%)Yes	F (%) No
1.	Reducing the land size cultivated	97 (80.8)	23 (19.2)
2.	Contingency fund for farming activities	0 (0.0)	120 (100.0)
3.	Diversification of farming	57 (47.5)	63 (52.5)
4.	Pure organic farm practices	76 (63.3)	44 (36.7)
5.	Substitution for inorganic/synthetic chemical	69 (57.5)	51 (42.5)
6.	Personal savings before lockdown	102 (85.0)	18 (15.0)
7.	Employed family labour for farming	77 (64.2)	43 (35.8)
8.	Loan from cooperative	11 (9.2)	109 (90.8)
9.	Selling of farm produce at farm gate	46 (38.3)	74 (61.7)
10.	Reducing of hired labour engagement	105 (87.5)	15 (12.5)

Source: Computed from a field survey, 2022. Where: F = Frequency, %= Percentage.

Table 2 reveals the coping strategies that the respondents engaged in other to cope with the COVID-19 pandemic. The result shows that majority (87.5%) of the respondents reduced the employment of hired labour and majority (85.0%) also had personal savings before the lockdown which was of good usefulness to them during the period that they had to be at home. The result also reveals that majority (80.8%) of the respondents reduced the land size they would normally cultivate because of the pandemic. The result further shows that more than half (64.2%) of the respondents employed family labour for farming activities during the pandemic.

Discussion

The findings indicated that the arable crop farmers were within the mean age of 33 years. This implies that they could still withstand the pandemic because it affected the health of older people than the younger people. This corroborates the findings of Lebrasseur *et al.*, 2021; Adedeji-Adenola *et al.* (2022) that asserted that COVID-19 affected older people than the younger people. Young farmers are more likely to implement preventative measures against the COVID-19 epidemic. Five people made up the average household size of arable farmers in the study, indicating that they were squeezed by the COVID-19 pandemic and paid more for food and inputs while getting less for their crops. TechnoServe (2021) found that 70% of households struggled to provide for their families because of high food costs and low earnings. It was noted that some of the arable crop farmers earn between one hundred and fifty thousand Naira to three hundred thousand naira (₦150,000- ₦300,000) as monthly income. This signifies that the respondents might have saved enough money, all things are equal, before the emergence of COVID-19, and this may serve as a coping strategy. Contrary, the COVID-19 pandemic's effects on commerce and supply chains made it harder for farmers to make a living and provide for their family. Poor rural households, in particular, sometimes lack the funds to purchase foods that are

adequate in calories and essential nutrients. Disruptions to both agricultural and non-agricultural activity resulted in farmers losing income. Comparably, in the first three months following the start of COVID-19, roughly 64% of agricultural households had an income loss of more than 40% relative to their pre-COVID income level, according to Balana *et al.* (2020).

The findings reflected that all the respondents were severely affected by the skyrocketing of farm input prices and inadequate supply of relief package. Most farmers were unable to purchase inputs for their production process amid COVID-19. Similarly, studies by Haque *et al.* (2022) and Alam *et al.* (2023) revealed that farmers had contend with rising costs for agricultural inputs because the lockout also hampered the import and transit of commodities including seedlings, fertilizers, and pesticides. Other authors also stated that since the majority of agricultural inputs were imported, the volatility of foreign exchange was driving up the cost of these inputs. Farmers who were having a hard time getting by were frustrated by the high cost of agricultural supplies across the nation (Serpil & Mehmet, 2024).

The result also reveals that the pandemic had severe effect on the cost of production and transportation for majority of the respondents. The findings revealed that majority of the respondents strongly agreed that the pandemic resulted to high cost of production. According to Thomas & Gilbert (2014), Olukunle (2016), the cost of production involves labour, raw materials, consumable manufacturing, land and capital. To these during COVID-19 pandemic, across the country, because there are no mechanized farming tools available, agricultural labour was performed manually on a daily basis. There was a high demand for labour during times of peak agricultural activity, particularly harvesting, but access to farmlands was restricted by lockdowns and movement restrictions for both arable crop farmers and labourers. The findings of Menon & Schmidt-Vogt (2022); Oyetoro (2023) asserted that most of the arable crop farmers were unable to get necessary production input resources during COVID-19 pandemic which was attributed to the sudden rise of high cost of labour, poor access to farm credit and no-COVID-19 pandemic palliative by the government were factors contributed to high cost of crop production.

Furthermore, findings showed that majority of the respondents strongly agree that the pandemic lockdown encouraged spoilage of farm produce. This implies that because of the pandemic, the farmers were not able to transport, sell and store their produce properly which therefore increased the spoilage of the farm produce, this finding is corroborated with Ilesanmi *et at.* (2023) who affirmed that COVID-19 pandemic lockdown resulted to spoilage of some arable crop produce that could not get to consumers on time. The study further revealed that the pandemic has reduced the income of the respondents. Also, Adebayo & Milu, (2020) in Agricultural Policy and Research in Africa (APRA) supported that the COVID-19 period is associated with a reduction in labour availability and increased labour costs.

The findings revealed the coping strategies that the respondents engaged in other to cope with the COVID-19 pandemic. It was indicated that majority of the respondents reduced the employment of hired labour and majority

also had personal savings before the lockdown which advantage to them during the period that they had to be at home, Adebayo & Milu, (2020) OECD, (2020); Ilesanmi *et at.* (2023) were of the same view that COVID-19 pandemic exert a significant effect on labour force, savings and marketing of farm produce. The findings indicated that majority of the respondents reduced the land size they would normally cultivate because of the pandemic. This supports the work of Balana *et al.* (2020) who stated that because of the movement restrictions during the pandemic, some farmers had to reduce their farm sizes in order to be efficient in their production. This, however, affected total productivity. This implies that the arable crop farmers started producing less produce than usual because they were not selling as much as before in other to reduce spoilage of the farm produce. The result further shows that more than half of the respondents employed family labour for farming activities during the pandemic.

Conclusion

Based on the findings of this study, the following conclusions were drawn that the effects of COVID-19 pandemic was well pronounced on arable crop farmers activities. Thus, it was concluded that the COVID-19 pandemic affected the arable crop farmers in Odeda local government. Covid-19 pandemic was responsible for incessant increase of farm inputs' prices and coping strategies that were adopted by the respondents might be helpful to subside the effects of the pandemic in future occurrence.

Recommendations

Based on the conclusions, the study recommends the following:

1. All efforts should be on top gear by the farmers to see the pandemic as a better way to unveil new face of farming and take every chance to improve the livelihood activities in case of future occurrence.
2. Agricultural stakeholders (Farmers, Extension and the government) should ensure that favourable policies are implemented to turn the effects of pandemic to the nation's favour in term of food security.
3. Government should ensure farm input price are in check to avoid depriving the core rural farmers chances to contribute their quota to the nation's food security.
4. Effort should be made by the Extension and NGOs to initiate capacity building among farmers for optimum utilization of available coping strategies against COVID-19 pandemic in case of future occurrence.

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