



**AgEcon** SEARCH  
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

*The World's Largest Open Access Agricultural & Applied Economics Digital Library*

**This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.**

**Help ensure our sustainability.**

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

[aesearch@umn.edu](mailto:aesearch@umn.edu)

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

**Justin Kelechi Nmerengwa<sup>1</sup>**

Abia State University, Uturu, Nigeria

## **Socio-Economic Consequences and Mitigation Strategies of the COVID-19 Pandemic (Phases One and Two) on Rural Farmers in Ebonyi State, Nigeria**

**Abstract.** This study assessed the socio-economic consequences and mitigation strategies of the COVID-19 pandemic (phases one and two) on rural farmers in Ebonyi State, Nigeria. Specifically, the study described the socio-economic characteristics of rural farmers, assessed the perceived socio-economic consequences of the COVID-19 pandemic, and identified strategies used by farmers to cope with the effects of the COVID-19 pandemic. A multistage random sampling technique was employed to select 120 respondents from whom data were collected using a semi-structured questionnaire. Data collected were analysed using descriptive statistics and a mean score. The results showed that disruption in children's education ( $\bar{X}=3.02$ ), reduced purchasing power and increased rate of inflation across the country ( $\bar{X}=2.83$ ), a reduction in diversity and amount of food consumed ( $\bar{X}=2.77$ ), a reduction in the standard of living ( $\bar{X}=2.68$ ), a reduction of farm income ( $\bar{X}=2.63$ ), reduced off-farm employment and income ( $\bar{X}=2.61$ ), loss of lives ( $\bar{X}=2.61$ ), an increase in prices of food items ( $\bar{X}=2.59$ ), reduced religious activities and gatherings ( $\bar{X}=2.57$ ), reduction of remittance ( $\bar{X}=2.54$ ) and high foreign exchange rates ( $\bar{X}=2.53$ ) were some of the perceived socio-economic consequences of the pandemic. Meanwhile, 80.00% and 70.83% of the rural farmers reduced the quantity of meals eaten and prayed to God, respectively. It was recommended that government assistance programmes must be modified and augmented in order to better reach rural populations, many of whom do not have access to formal contributory social insurance systems.

**Keywords:** COVID-19 pandemic, socio-economic consequences, mitigation and rural farmers

**JEL Classification:** Z0, Q0, Q1

### **Introduction**

Agriculture has always played an essential role in the economy of all countries. This is not only because the sector provides food for the population of a country but also because of the interconnectivity and interaction that the sector has with all the other sectors of the economy (Brivery and Yunike, 2021). In many developing countries, including Nigeria, agriculture is a key sector of the economy and provides the basis for any development strategy (Aminou et al., 2021). It provides employment for about two-thirds of Africa's working population and, according to the World Bank (2020a), can help reduce poverty, raise income, and improve food security for 80% of the world's poor, who live mostly in rural areas and work mainly in farming. However, recent evidence suggests that these potentials could have been hampered by the COVID-19 pandemic (Brivery and Yunike, 2021).

Like climate change, a pandemic is a global risk. The COVID-19 pandemic that broke out in the city of Wuhan, China, in December 2019 and later spread to different countries,

<sup>1</sup> Department of Agricultural Economics and Extension, Abia State University, Umuahia Campus, Abia State, Nigeria; e-mail: justinnmerengwa@gmail.com; <https://orcid.org/0009-0002-3601-4933>



including Nigeria, has inflicted negative macro socio-economic impacts on developed and developing countries globally (Onwuka, 2021). The COVID-19 pandemic affected and continues to affect the world in a way that has not been seen since World War II (International Monetary Fund (IMF), 2020). The pandemic has led to loss of lives, and death tolls around the world are, in many cases, unacceptably high (World Health Organization (WHO), 2020).

Nigeria recorded the first confirmed COVID-19 case in Sub-Saharan Africa in late February 2020, after which it began to spread in Lagos State, Ogun State, the Federal Capital Territory (FCT) Area of Abuja and all other states of the country. To control the spread of the pandemic, given the rapid increase in the number of infected people, Nigeria governments at various levels (federal and state) initiated some policy actions, including health and education campaigns, lockdowns, self-isolation, social distancing, fiscal and monetary measures and compensating measures in the form of social protection for poor and vulnerable people (Onyekwena and Amaramma, 2020; Ibukun and Adebayo, 2020). These unanticipated restrictions in physical, social, and economic activities interrupted the ability of various individuals and groups to earn a living and affected various sectors of the economy, ranging from the agriculture sector to manufacturing and services (Nicola et al., 2020; Niles et al., 2020).

Acharya and Porwal (2020) noted that because of high globalisation, economic integration, and interconnectedness among the different sectors of the economy, a change in any part of the economy or country could affect other sectors of the economy or other countries in other parts of the world. Therefore, while the health impact of COVID-19 in most parts of the world, including Nigeria, was primarily felt in urban areas due to dense population, its adverse economic impacts spread or trickled down to rural areas (Oscar, 2021).

Globally, the COVID-19 crisis is primarily viewed as an unprecedented public health challenge. While it is not as deadly as the H1N1 flu epidemic or the Ebola epidemic, it is unprecedented in the rapid transmission of viral agents from one human to another worldwide (Yazdanpanah et al., 2021). It profoundly and widely affects socio-economic activity, work life, food systems, and many other sectors. Thus, the pandemic's effects go far beyond just public health (Udmale et al., 2020; Swinnen and McDermott, 2020) as it has wiped out or disrupted various jobs and, as of December 2020, put almost half of the world's 3.3 billion workforce at risk of losing their livelihoods or worsening their poverty status.

Border closures, quarantines, social distancing, curfews, and trade restrictions prevented farmers from accessing farms and/or markets—including the purchase of inputs and the sale of their products. Controls also prevented workers from harvesting agricultural products, triggering significant socio-economic consequences for people's livelihoods (WHO, 2020). While these restrictions are crucial for limiting the spread of the disease, they often disrupt chain markets and trade in agricultural and non-agricultural products, thus affecting the nutrition and food security of all (WHO, 2020).

Rural residents and farmers in developing countries are more vulnerable to the impact of the COVID-19 pandemic because, in their local communities, most of them have inadequate or lack access to resources such as clean water, schools, electricity, health centres, a good transportation network, financial services, communication facilities, and social support, all of which are more readily available in urban areas. The lack of these

resources, services, and support puts these populations at a higher risk and vulnerability (WHO, 2020).

Carlo et al. (2020) asserted that the economies of most African countries, including Nigeria, were hit hard by the COVID-19 pandemic. They posited that in Nigeria, for instance, the pre-COVID-19 employment level was at 85%, but after the lockdown measures, self-reported employment levels fell to 43%. Also, according to Carlo et al. (2020), a significant share of the population—between 46 and 80%—had to get by with less income in Nigeria during the period under review. These could have long-term negative effects on the livelihood and poverty status of most Nigerians, including rural farmers, even though the federal government has since put in place measures to boost economic activities.

According to Bordi et al. (2021), rural economies are interwoven into national and global markets through complex networks of production, trade, migration, and remittance flows. These links, combined with disproportionately higher levels of pre-COVID-19 pandemic poverty and food insecurity, make rural areas and rural livelihoods acutely vulnerable to the adverse economic impacts of the pandemic. Moreover, informality is a key feature of rural life in many countries. As a result, rural people, including farmers, are less likely to have access to contributory social insurance (e.g. health insurance, unemployment benefits) and to other services, such as credit and insurance, which help to reduce the livelihood risks of the pandemic. This informs the need for a study of this nature to determine any impacts of the COVID-19 pandemic on rural farmers' livelihoods and poverty levels, and provide recommendations that will help ameliorate the situation.

In order to inform long-term COVID-19 recovery and mitigation policy responses, it is critical to understand the extent of the economic impacts of the pandemic on rural farmers. To this end, this study intends to consolidate the emerging evidence of the impact of COVID-19 in rural areas by empirically assessing micro-level data on the socio-economic consequences of the COVID-19 pandemic as it relates to livelihood and poverty levels of rural farmers in Ebonyi State, Nigeria.

Currently, the main focus of researchers globally, irrespective of discipline, is on the COVID-19 pandemic. This study contributes to the current debate on the pandemic, especially as it affects the livelihood and poverty levels of rural farmers. It is hoped that the findings of this study, if implemented, would help in fulfilling some of the aspirations of the National Economic Empowerment Development Strategy (NEEDS) and the United Nations Sustainable Goals, and serve as a base for further research on similar issues.

In view of the foregoing, this study specifically:

- i. describes the socio-economic characteristics of rural farmers;
- ii. assesses farmers' perceived socio-economic consequences of the COVID-19 pandemic in the study area;
- iii. identifies strategies used by farmers to cope with the effects of the COVID-19 pandemic in the study area.

## **Research methodology**

### ***Area of study***

This study was carried out in Ebonyi State, Nigeria. Ebonyi State has a land area of 5,533 km<sup>2</sup>, with a total population of 2,173,501 people, made up of 1,132,517 males and 1,040,984 females (NPC, 2006). Large proportions of the inhabitants of the state are farmers and live in rural areas with a population density of about 580 people per km<sup>2</sup>. Ebonyi State is located between latitudes 5°10' N and 6°35' north of the equator and longitudes 7°30' E and 8°30' east of the Greenwich Meridian. It shares boundaries with Cross River State to the east, Enugu State to the west, Benue State to the north, and Abia State to the south. The state is landlocked and situated about 200 kilometres from the Gulf of Guinea to the south and 70 kilometres from the Republic of Cameroon to the east. Annual rainfall in the state ranges from 1613.8 mm to 2136.27 mm, which is distributed from April to October (Ogbuene, 2010). The state has an annual temperature range of 23°C and 40°C. The relative humidity is highest at 09.00 hours (Nigeria time) and usually between 70% and 80% in most months of the year.

### ***Sampling technique***

A multistage random sampling technique was employed in selecting respondents for the study. In stage one, one local government area with predominantly rural characteristics was randomly selected from each of the three agricultural zones of the state. In stage two, two agrarian communities were randomly selected from each of the three LGAs to give six communities. In stage three, two villages were randomly selected from each of the six communities to give twelve villages. A list of rural farmers in each village was formulated with the help of the village secretaries. This list served as the sampling frame from which ten farmers from each village were selected at random. This gave a sample size of one hundred and twenty rural farmers.

### ***Method of data collection***

The study made use of primary data. Data for this study were collected from primary sources (the rural farmers). The data were collected using a pre-tested semi-structured questionnaire, which addressed issues on the socio-economic characteristics of the rural farmers such as their age, gender, education level, extension services contact, farm income, membership of association and access to remittance. In addition, data were also collected on the rural farmers' level of awareness of the COVID-19 pandemic, their perceived socio-economic consequences of the pandemic, coping strategies, and livelihood and household welfare indicators before and after phases 1 and 2 of the pandemic.

### ***Method of data analysis***

In order to realise the purpose of the study, a number of statistical tools were employed in analysing data. Objectives (i) and (iii) were analysed using descriptive statistics of mean, frequencies, and percentages. Objective (ii) was realised with the aid of mean scores that were obtained using a 4-point Likert scale.

**Model specification**

Assessment of farmers' perceived socio-economic consequences of the COVID-19 pandemic (Objective iii) was realised using a mean score which was obtained following the use of a 4-point Likert scale (where perception of the socio-economic consequences of the COVID-19 pandemic will be captured with a 4-point Likert scale graded thus: Strongly agree = 4, agree = 3, disagree = 2, strongly disagree = 1).

The values of the responses were added and further divided by 4 to obtain a mean score of 2.5, which was regarded as the mean level for the perception of the socio-economic consequences of COVID-19. Responses with a mean score of 2.5 and above were regarded as being perceived by the farmers, while responses with a mean score of less than 2.5 were regarded as not being perceived.

Thus, mean perception score =  $\bar{X}$

$$\bar{X} = \sum fx/N, \text{ (the mean score)} \dots \dots \dots (1)$$

The mean ( $\bar{X}$ ) of each item will be computed by multiplying the frequency of positive responses to each question with its appropriate Likert nominal value, and the sum will be divided by the sum of the number of respondents to the items. This is summarised with the equation below:

$$\bar{X} = \sum fn/N.$$

Where:

$\bar{X}$  = mean score;

$\sum$  = summation sign;

F = frequency or number of respondents who responded positively;

n = Likert nominal value;

N = number of respondents.

**Results and discussion**

**Age of the rural farmers**

The distribution of the respondents according to age is presented in Table 1. As shown in the table, 39.17% and 25.50% of the rural farmers were aged between 40 and 49 years and 50 to 59 years, respectively. The mean age of the farmers was 48.18 years. This indicates that the farmers were active and energetic enough to withstand the tedium associated with farming. According to Nwaru (2004), the risk-bearing abilities and innovations of a farmer, as well as his/her mental capacity to cope with the daily challenges and demands of farm production activities, decrease with advancing age. The low percentage (19.16%) of youth (20-39 years) among the farmers indicates low involvement of youths in farming in rural areas of the state. This finding agrees with Ajani et al. (2015) and Dankyang (2014), who assert that most youths in rural parts of Nigeria have left agriculture and migrated to urban centres in favour of employment in the non-agricultural sector. Although this could have negative implications on the supply of farm labour in the area, the remittances sent home by rural migrant youths could help the farmers cope with the impacts of the COVID-19 pandemic. The result compares favourably with Osondu et al. (2013), who found a mean age of 47 years among rural farmers in Abia State, Nigeria.

**Household size of the rural farmers**

The distribution of the respondents according to household size is presented in Table 1. The table shows that 52.50% of the rural farmers had household sizes within the range of 5-8 people, while 31.67% of them had a household size of between 1 and 4 people. The mean household size of the farmers was 7 people. This result compares favourably with Emerole et al. (2014) and Chukwuone et al. (2018) with findings of 7 people as the mean household size of farmers in Southeast Nigeria and suggests that more of the farm labour utilised in farm production in the study area is supplied by household members, since the majority of farmers in rural areas use more household labour compared to hired labour (Ojogho, 2010). In the absence of well-functioning labour markets, large households face fewer labour bottlenecks at critical points in the farming cycle, such as land preparation and harvest (Ezeh et al., 2012). Thus, it is expected that large farm households may likely not experience a shortage of farm labour supply as a result of phases one and two of the COVID-19 pandemic.

Table 1. Description of the respondents' socio-economic characteristics (n=120)

Variables	Frequency	Percentage
Age (Years)		
20 – 29	7	5.83
30 – 39	16	13.33
40 – 49	47	39.17
50 – 59	27	22.50
60 – 69	14	11.67
≥ 70	9	7.50
Mean (years)	48.18	-
Education Level		
No formal education	18	15.00
Primary education	33	27.50
Secondary education	64	53.33
Tertiary education	5	4.17
Household Size		
1 – 4	38	31.67
5 – 8	63	52.50
9 – 12	16	13.33
13 – 16	3	2.50
Mean	6.74	
Farming Experience (Years)		
1 – 10	37	30.83
11 – 20	51	42.50
21 – 30	19	15.83
31 – 40	11	9.17
41 – 50	2	1.67
Mean (years)	14.34	
Total	120	100.00

Source: Field survey, 2021.



### **Education level of the rural farmers**

The distribution of the respondents according to the level of formal education attained is presented in Table 1. The table shows that 53.33% of the rural farmers had attained secondary school education, while 27.50% and 4.17% of them had attained primary education and tertiary education, respectively. Cumulatively, 85.00% of the farmers had attained diverse levels of formal education. Education raises human capital and significantly increases the ability to make correct and meaningful farm management decisions. The ability to read and write enables the farmers to effectively and efficiently utilise whatever resources are at their disposal and be better able to cope with the impacts of the COVID-19 pandemic. Also, as noted by Ebewore and Okedo-Okojie (2016), widespread illiteracy among farmers hinders their understanding of information as well as their perception of changes occurring around them. Educated farmers are expected to have a higher level of perception of the pandemic.

### **Farming experience of the rural farmers**

The distribution of the respondents according to farming experience is presented in Table 1. The table shows that 42.50% and 30.83% of the rural farmers had farming experiences within the range of 1 to 10 years and 11 to 20 years, respectively. The mean farming experience of the rural farmers was 15.54 years. The result shows that many of the farmers were well-versed in farming as they had been in the business for many years. This is expected to have positive implications on their perception of the COVID-19 pandemic. Osondu and Nwaobiala (2013) asserted that from experience gained in farming over the years, farmers are likely to perceive changes that occur on their farms, especially with respect to farm output and income. The result supports Umeh and Ekwengene's (2017) finding of mean farming experience of 14 years among farmers in Enugu State, Nigeria.

### **Perceived socio-economic consequences of phases one and two of the COVID-19 pandemic by the rural farmers**

The distribution of the respondents according to the level of perceived socio-economic consequences of phases one and two of the COVID-19 pandemic is presented in Table 2. The table shows that some social and economic changes were perceived by the rural farmers as being aftermaths of phases one and two of the COVID-19 pandemic, which occurred in Nigeria. As shown in the table, disruption in children's education ( $\bar{X}=3.02$ ), loss of lives ( $\bar{X}=2.61$ ), reduced religious activities and gatherings ( $\bar{X}=2.57$ ), and reduced access to healthcare facilities due to increased strain on health workers ( $\bar{X}=2.57$ ) were perceived by the rural farmers as social consequences of the pandemic, while an increase in social tension ( $\bar{X}=2.53$ ) was the only psychological consequence of the pandemic.

Furthermore, with respect to the economic consequences of phases one and two of the COVID-19 pandemic, Table 2 shows that the aftermath of the pandemic was perceived by the rural farmers to include reduced purchasing power and increased rate of inflation across the country ( $\bar{X}=2.83$ ). This result lends credence to the assertion of the Global Alliance for Improved Nutrition (GAIN) (2021) that from the onset of the COVID-19 pandemic in Nigeria in February 2020, an inflationary trend has been on the rise and has continued into 2021. According to them, if left unchecked, this could have devastating negative economic



impacts on rural farmers. Other economic consequences of the pandemic perceived by the farmers were: a reduction in diversity and amount of food consumed ( $\bar{X}=2.77$ ), reduction in the standard of living ( $\bar{X}=2.68$ ), reduction of farm income ( $\bar{X}=2.63$ ), reduced off-farm employment and income ( $\bar{X}=2.61$ ), increase in prices of food items ( $\bar{X}=2.59$ ), reduced savings capacity ( $\bar{X}=2.56$ ), reduction of remittance ( $\bar{X}=2.54$ ), reduction in investment levels ( $\bar{X}=2.54$ ), high foreign exchange rates ( $\bar{X}=2.53$ ), reduced demand/sales of farm outputs ( $\bar{X}=2.53$ ), low access to agricultural inputs due to movement restrictions ( $\bar{X}=2.52$ ), and food scarcity/reduced access to food ( $\bar{X}=2.51$ ).

Table 2. Distribution of the rural farmers according to the level of perception of socio-economic consequences of the COVID-19 pandemic

Socio-economic consequences of the COVID-19 pandemic	Strongly agree (4)	Agree (3)	Disagree (2)	Strongly disagree (1)	Total	Mean score
<b>Social Consequences</b>						
Reduced access to healthcare facilities due to increased strain on health workers	29(116)	30(90)	41(82)	20(20)	308	2.57
Loss of lives	26(104)	43(129)	29(58)	22(22)	313	2.61
Disruption in children's education	44(176)	51(153)	18(36)	7(7)	372	3.10
Disruption in traditional ceremonies	24(96)	25(75)	43(86)	28(28)	285	2.38
Reduced religious activities and gatherings	30(120)	27(81)	44(88)	19(19)	308	2.57
Mistrust in government actions	19(76)	30(90)	34(68)	37(37)	271	2.26
<b>Psychological Consequences</b>						
Increase in social tension	26(104)	35(105)	36(72)	23(23)	304	2.53
I had a lot of anxiety and worry about getting COVID-19	30(120)	25(75)	28(56)	37(37)	288	2.40
Increase in depression and high blood pressure	22(88)	23(69)	31(62)	44(44)	263	2.19
COVID-19 caused farmers to be reluctant to make farm management plans	19(76)	24(72)	39(78)	38(38)	264	2.20
<b>Economic Consequences</b>						
Reduction of farm income	24(96)	42(126)	40(80)	14(14)	316	2.63
Reduction of remittance	21(84)	40(120)	42(84)	17(17)	305	2.54
Reduced savings capacity	26(104)	38(114)	33(66)	23(23)	307	2.56
High foreign exchange rates	28(112)	31(93)	38(76)	23(23)	304	2.53
Reduced access to banks	24(96)	27(81)	23(46)	46(46)	269	2.24
Reduction in the standard of living	33(132)	38(114)	27(54)	22(22)	322	2.68
Reduced purchasing power and increased rate of inflation across the country	37(148)	43(129)	23(46)	17(17)	340	2.83
Reduced off-farm employment and income	26(104)	40(120)	35(70)	19(19)	313	2.61
Low access to agricultural inputs due to movement restrictions	28(112)	34(102)	30(60)	28(28)	302	2.52
Food scarcity / reduced access to food	25(100)	34(102)	38(76)	23(23)	301	2.51
Reduction in diversity and amount of food consumed	38(152)	39(117)	20(40)	23(23)	332	2.77
Reduction in the quality of food consumed	27(108)	30(90)	31(62)	32(32)	292	2.43
Reduced demand/sales of farm outputs	27(108)	36(108)	30(60)	27(27)	303	2.53
Reduction in investment levels	31(124)	29(87)	34(68)	26(26)	305	2.54
Increase in prices of food items	36(144)	30(90)	23(46)	31(31)	311	2.59
Shortage of farm labour	21(84)	30(90)	21(42)	48(48)	264	2.20
Grand Mean						2.52

Decision Rule: Mean score values of  $\geq 2.5$  = Perceived;  $< 2.5$  = not perceived

Figures in parentheses are Likert scores; figures not in parentheses are response frequencies.

Source: Field Survey, 2021.

The International Fund for Agriculture Development (IFAD) (2020) noted that rural farming communities tend to have little or no savings, and many depend on daily-generated income for food access. Interruptions in daily wages and unexpected disruptions in income may force rural farmers into severe food insecurity. Confirming that reduced access to food is driven primarily by high prices and reduced income, Carreras et al. (2020) reported that more respondents from Ghana, Ethiopia, Kenya, Malawi, Nigeria, Tanzania and Zimbabwe were constrained from accessing food as a result of reduced income and a rise in food prices.

**Strategies used by rural farmers to cope with the effects of phases one and two of the COVID-19 pandemic**

The distribution of the respondents according to strategies used to cope with the effects of phases one and two of the COVID-19 pandemic is presented in Table 3. The table shows that 80.00% of the farmers reduced the quantity of meals eaten. This result supports the FAO (2021a) finding that 94% of sampled rural farm households in Liberia reduced food consumption as a strategy to cope with COVID-19-induced income losses. In a similar vein, Egger et al. (2021) found that changes in income due to COVID-19 are significantly associated with an increased probability of rural farmers consuming less food. Meanwhile, 76.67% and 75.00% of the farmers skipped meals and reduced purchases of non-food items, respectively. This finding lends credence to results obtained by Carreras et al. (2020) in Nigeria, in which 79% of sampled respondents reported skipping meals as a coping strategy. Evidence emanating from the FAO (2021b) study showed that in Yemen, 67% of sampled rural households reported a reduction in non-food expenditures, while 54% of the respondents reported selling productive inputs as COVID-19 coping mechanisms.

Table 3. Distribution of the rural farmers according to strategies used to cope with the effects of the COVID-19 pandemic

<b>Coping Strategies</b>	<b>*Frequency</b>	<b>Percentage</b>
Skipped meals	92	76.67
Borrowed money	60	50.00
Reduced quantity of meals eaten	96	80.00
Buying food on credit	55	45.83
Obtained remittance money from migrant household members	44	36.67
Accessed palliative care from social groups and the government	29	24.17
Sold personal belongings	38	31.67
Sold productive assets	60	50.00
Consumed plant materials stocked for the next planting season	66	55.00
Reduced the level of farm investments		
Reduced purchases of non-food items	90	75.00
Ate less expensive food	61	50.83
Spent savings	88	73.33
Prayed to God	85	70.83

\*Multiple responses recorded

Source: Field survey, 2021.

Furthermore, 70.83%, 67.50%, and 52.50% of the farmers prayed to God, spent savings, and sold productive assets, respectively, as coping strategies for the pandemic. The result highlights the religious belief of the farmers in a superior being. Also, the result with respect to reduced savings lends credence to Rahman and Matin's (2020) report that in Bangladesh, savings were the most prevalent strategy used by rural farm households to cope with the effects of the COVID-19 pandemic. These results support the Josephson et al. (2020) report that in Ethiopia, Nigeria, Malawi, and Uganda, rural households are more likely to liquidate assets as a COVID-19 coping strategy than urban ones. Also, the FAO (2021c) reported that 49% of sampled respondents in Afghanistan sold productive assets as a means of coping with the pandemic. Lastly, 55.00% and 50.00% of the farmers reported consuming plant materials stocked for the next planting season and borrowing money, respectively. Similar results were obtained in Liberia and Yemen by previous studies (FAO, 2021a; FAO, 2021b). In Liberia, 51% of the surveyed households reported borrowing money, while a very high 86% of households in Yemen reported incurring debt or purchasing food on credit.

## **Conclusions and recommendations**

### ***Conclusions***

The study showed that COVID-19 has negatively impacted the social, psychological, and economic status of rural farmers. The study has been able to make an important contribution to the discourse pertaining to the impacts of the COVID-19 pandemic, especially from the angle of rural farmers.

### ***Recommendations***

Based on the findings of this study, the following recommendations are made:

- i. Government assistance programmes must be modified and augmented in order to better reach rural populations, many of whom do not have access to formal, contributory social insurance systems. This will require both financial resources and investments in systems for identifying and targeting those in need. In the context of rural farmers, a combination of flexible cash transfers plus interventions to support and strengthen food and input markets can help reduce reliance on adverse short-term coping strategies, while also enabling productive investments in farm and non-farm activities that have been hindered by the pandemic.
- ii. There is a need for all levels of government and other development agencies to provide more support or grants to rural farmers (especially those with low economic status) so as to help minimise livelihood shock and aid recovery of rural households' economic capacity both during and after the COVID-19 pandemic.

## References

- Acharya, R., Porwal, A. (2020). A vulnerability index for the management of and response to the COVID-19 epidemic in India: an ecological study. *Lancet*, 8: 1142-1151. [https://doi.org/10.1016/S2214-109X\(20\)30300-4](https://doi.org/10.1016/S2214-109X(20)30300-4).
- Ajani, E.N, Mgbenka, R.N., Onah, O. (2015). Empowerment of Youths in Rural Areas through Agricultural Development Programmes: Implications for Poverty Reduction in Nigeria. *Journal of Research in Agriculture and Forestry*, 212, February 201536.
- Aminou, A., Rachidi, A., Nicholas, T. (2021). Short-term impact of the COVID-19 pandemic on the livelihood of smallholder rice farmers in developing countries. 94th Annual Conference, March 29-30, 2021, Warwick, UK (Hybrid) from Agricultural Economics Society - AES.
- Diagi B.E. (2018). Analysis of rainfall trend and variability in Ebonyi state, South Eastern Nigeria. *Environmental and Earth Sciences Research Journal* 5(3); 53-57.
- Brivery, S., Yunike, P. (2021). Coronavirus (COVID-19) Implications on the Livelihoods of the Farmers. *American Journal of Agricultural and Biological Sciences*, 16, 38-49.
- Carlo, K., Peter, H., Ottar, M. (2020). Household wellbeing and coping strategies in Africa during COVID-19 – Findings from high frequency phone surveys. Bergen: Chr. Michelsen Institute (CMI) Report 2020 (4), 32 p. <https://www.cmi.no/publications/7391-household-wellbeing-and-coping-strategies-in-africa-during-covid-19-findings-from-high-frequency>. Accessed 4th October, 2021
- Carreras, M., Saha, A., Thompson, J. (2020). Rapid Assessment of the impact of COVID-19 on food systems and rural livelihoods in sub-saharan Africa. APRA COVID-19 Synthesis Report 1. Brighton: Future Agriculture Consortium.
- Chukwuone, N.A., Chukwuone, C., Amaechina, E.C. (2018). Sustainable Land Management Practices Used by Farm Households for Climate Change Adaptation in South East Nigeria. *Journal of Agricultural Extension*, 22(3), 185-194.
- Bordi, D., Knowles, M., Sitko, N., Viberti, F. (2021). Assessing the Impacts of the COVID-19 pandemic on the livelihoods of rural people: A review of the evidence. <https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2021/07/sitko-paper.pdf>. Accessed 4th October, 2021.
- Dankyang, Y. (2014). Risk sources and management strategies of small scale farmers in Kaduna State, Nigeria. Unpublished M. Tech thesis. Department of Agricultural Economics, Federal University of Technology, Minna.10-37.
- Ebewore, S.O., Okedo-Okojie, D. (2016). Economics of cassava farmers' adoption of improved varieties in Isoko North LGA, Delta State. *Journal of Agriculture and Food Sciences*, 14 (1), 24-36.
- Egger, D., Miguel, E., Warren, S.S., Shenoy, A., Collins, E., Karlan, D., Parkerson, D., Mobarak, A.M., Fink, G., Udry, C., Walker, M., Haushofer, J., Larrebourg, M., Athey, S., Lopez-Pena, P., Benhachmi, S., Humphreys, M., Lowe, L., Meriggi, N.F., Wabwire, A., Vernot, C. (2021). Falling living standards during the COVID-19 crisis: Quantitative evidence from nine developing countries. *Science Advances*, 7(6), eabe0997. <https://doi.org/10.1126/sciadv.abe0997>.
- Emerole, C.O., Anyiro, C.O., Ibezim, G.M.C., Ijioma, J.C., Osondu, K.C. (2014) Assessment of household engagements and management of migrant farm workers in South-Eastern Nigeria. *Mycopath*, 12(2), 95-101.
- Ezeh, C.I, Anyiro, C.O., Chukwu, J.A. (2012). Technical Efficiency in Poultry Broiler Production in Umuahia Capital Territory of Abia State, Nigeria. *Greener Journal of Agricultural Sciences*, 2(1), 1-7.
- Food and Agriculture Organization (FAO) (2021a). Liberia | Agricultural livelihoods and food security in the context of COVID-19: Monitoring Report – January 2021. Rome.
- Food and Agriculture organization (FAO) (2021b). Yemen | Agricultural livelihoods and food security in the context of COVID-19: Monitoring Report – January 2021. Rome.
- Food and Agriculture organization (FAO) (2021c). Afghanistan | Agricultural livelihoods and food security in the context of COVID-19: Monitoring Report – March 2021. Rome.
- Global Alliance for Improved Nutrition (GAIN) (2021). Impact of COVID-19 on Nigeria's Food Systems. Situation Report (2nd edition). 24 March, 2021.
- Ibukun, C.O., Adebayo, A.A. (2020). Household Food Security and Covid-19 Pandemic in Nigeria. International Fund for Agricultural Development (IFAD) (2020). Mitigating the impact of COVID-19 on small-scale agriculture in The Gambia. IFAD (28 May 2020). <https://go.nature.com/32cm3dS>.
- International Monetary Fund (IMF) (2020). Policy responses to Covid-19. International Monetary Fund. Retrieved from <https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19>
- Josephson, A., Kilic, T., Michler, J.D. (2020). Socioeconomic Impacts of COVID-19 in Four African Countries. Policy Research Working Papers, 1-10. <https://doi.org/10.1596/1813-9450-9466>.

- National Population Commission (NPC) (2006). The Population Census of the Federal Republic of Nigeria Analytical report at the National Population Commission - Abuja.
- Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., Agha, M., Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International Journal of Surgery*, 78, 185-193. <https://doi.org/10.1016/j.ijssu.2020.04.018>.
- Niles, M.T., Bertmann, F., Belarmino, E.H., Wentworth, T., Biehl, E., Neff, R. (2020). The early food insecurity impacts of COVID-19. *Nutrients*, 12(7), 1-23. <https://doi.org/10.3390/nu12072096>.
- Nwaru, J.C. (2004). Rural Credit Markets and Resources Use in Arable Crop Production in Imo State, Nigeria. PhD Thesis, Micheal Okpara University of Agriculture, Umudike, Nigeria.
- Ojogho, O. (2010). Determinants of food insecurity among arable framers in Edo State, Nigeria. *Agricultural Journal*, 5(3), 151-156.
- Onwuka, I.O. (2021). Microcredit and Poverty Alleviation in Nigeria in COVID-19 Pandemic. *Asia-Pacific Journal of Rural Development*, 31(1), 7-36.
- Onyekwena, C., Amara Mma, E. (2020). Understanding the Impact of the COVID-19 Outbreak on the Nigerian Economy. Brookings Institution, Washington, DC. Downloaded on March 30th 2020 from <https://www.brookings.edu/blog/africa-infofocus/2020/04/08/understanding-the-impact-of-the-covid-19-outbreak-on-the-nigerian-economy/>.
- Oscar, O. (2021). Crisis impacts on rural lives and livelihoods in Kenya. OECD Publication. <https://IMPACT%20OF%20COVID%201PLD.html>.
- Osondu, C.K., Nwaobiala, C.U. (2013). Assessment of Farmers Perception of Climate Change Effect on Agricultural Production in Ohafia Agricultural Zone of Abia State, Nigeria. *Agricultural and Extension Research Studies*, 2(2), 1-9.
- Rahman, H.Z., Matin, I. (2020). Livelihoods, coping, and support during COVID-19 crisis. Dhaka: BRAC Institute of Governance and Development, Power and Participation Research Centre, 2020.
- Swinnen, J., McDermott, J. (2020). Covid-19 and Global Food Security; International Food Policy Research Institute (IFPRI): Washington, DC, USA, 2020; pp. 1-144.
- Udmale, P., Pal, I., Szabo, S., Pramanik, M., Large, A. (2020). Global food security in the context of COVID-19: A scenario-based exploratory analysis. *Progress in Disaster Science*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7374119/>. doi: 10.1016/j.pdisas.2020.100120. Accessed 4th October, 2021.
- Umeh, O., Ekwengene, H.N. (2017). Determinants of Utilization of Agricultural Extension Packages of Selected Arable Crops Among Farmers in Enugu State, Nigeria. *Agricultural Research and Technology Open Access Journal*, 3(3): 555611. <https://juniperpublishers.com/artoaj/ARTOAJ.MS.ID.555611.php>: Accessed 4th July, 2022.
- World Bank. (2020a). Food Security and Covid-19. Understanding Poverty. <https://www.worldbank.org/en/topic/agriculture/brief/food-security-and-covid-19>.
- World Food Programme (WFP) (2020). COVID-19 will double the number of people facing food crises unless swift action is taken | World Food Programme. WFP. <https://www.wfp.org/news/covid-19-will-double-number-people-facing-food-crises-unless-swift-action-taken>.
- World health Organization (WHO) (2020). Impact of COVID-19 on People's Livelihoods, their Health and Our Food Systems. 2020. Available online: <https://www.who.int/news/item/13-10-2020-impact-of-covid-19-on-people> (accessed on 20th March 2021).
- Yazdanpanah, M., Tajeri, M.M., Savari, M., Zobeidi, T., Sieber, S., Löhr, K. (2021). The Impact of Livelihood Assets on the Food Security of Farmers in Southern Iran during the COVID-19 Pandemic. *International Journal of Environmental Research and Public Health*, 18, 2-18. <https://doi.org/10.3390/ijerph18105310>.

#### For citation:

Nmerengwa J.K. (2023). Socio-Economic Consequences and Mitigation Strategies of the COVID-19 Pandemic (Phases One and Two) on Rural Farmers in Ebonyi State, Nigeria. *Problems of World Agriculture*, 23(4), 5-16; DOI: 10.22630/PRS.2023.23.4.13