EFFECT OF COVID-19 PANDEMIC ON FOOD SECURITY STATUS OF RURAL CROP FARMERS IN IMO STATE NIGERIA

Nwozuzu, S. O [1], Nnadi, F.N[1], Ukpongson M. T [1], Chijioke C.A[2] , Chikaire J.U[1] .

1. Department of Agricultural Extension, Federal University of Technology, Owerri, Imo State, Nigeria

2 Department of Environment Biology, Federal Polytechnic Nekedi Owerri, Imo State, Nigeria

Corresponding author: *nwozuzu001@gmail.com, Tel: 08037782348*

DOI No. 10.528 / zenodo 10558777

ABSTRACT:

The study analyzed the effect of Covid-19 Pandemic on food security status of rural crop farmers in Imo State, Nigeria. The specific objectives were to: describe the socio economic characteristics of rural crop farmers in the study area, identify rural crop farmers' covid-19 information sources and determine the food security status of rural crop farmers during Covid-19 in the study area. Data were generated, with the aid of structured questionnaire, from a survey conducted on a sample of 270 rural crop farmers obtained from a multistage sampling technique. Descriptive statistics such as mean, frequency, percentages were used for data analysis. From the findings, the study area was dominated by farmers with a mean age of 51 years, mean monthly income (₦ 32,426), majority completed secondary education (34.4%) and married (77.0%) food crop farmers who were quite experience with average of 23 years of experience and mean household size of 6 persons. The results revealed that the major source of information among rural crop farmers were through ministries of Agriculture (62.9%), federal ministry of health (52.2%), television (45.1%) and through social organization (44.8%). The assessment of the food security status of rural crop farming households revealed that majority response of food crop farmers were negative showing that farmers were food insecure. The study concludes that there is need for increased productivity among rural crop farmers in the study area if productivity policies and strategies implemented by government in other to ease Covid-19 challenges faced by farmers. The study recommended that rural crop farmers should be encouraged by the government through enacting favorable policies which will encourage crop farmers resilience in agriculture via awareness creation geared toward profit maximization, income generating activities that can make them to be food secured in the study area.

Keywords: Coronavirus Disease, Food security, Crop farmers

INTRODUCTION

The coronavirus disease code-name COVID-19, a mild-to-severe respiratory illness that is caused by coronavirus (genus: *Betacoronavirus*), is transmitted chiefly by contact with infected materials. (such as respiratory droplets), and it is characterized, especially, by fever, cough, and shortness of breath and may progress to pneumonia and respiratory failure (Zhu., Su., Wang., Liu., Wu., and Li, 2020). The Coronavirus pandemic is the latest threat to health today. The disease

emanated from the Wuhan Province of China in December 2019 when it was revealed that those affected showed symptoms of Acute Respiratory Distress Syndrome among other complications, (Chen., Zhou., Dong., Qu., Gong., Han, and White R. 2020). Covid-19 is classified as another zoonotic pathogen human coronavirus (United Nations, 2020a; WHO, 2020). As of May 9, 2023, globally, 81,848,830 cases were confirmed and 1,022,895 deaths had been recorded globally. (Gavi, 2023; WHO, 2023). Nigeria became the first sub Saharan African country to record a case of COVID-19, the onset of COVID-19 sent waves of panic across Nigeria, like in every other country. The first case of COVID-19 was confirmed by the Infectious Disease Centre, Yaba, Lagos State, Nigeria on the 27th February, 2020. An Italian citizen who arrived at the Murtala Muhammed International Airport, Lagos at 10:00 p.m. on 24th February, 2020 on-board with the Turkish airline from Milan, Italy (Oyeranti and Sokeye, 2020).

The emergence of Covid-19 disrupted Agricultural activities, livelihood/employment, food security, nutrition safety, and economic activity, as crop farmers affected could not access their farms, market, limited labor gathering causing disruption in food supply chain thus, playing roles in major economic shocks particularly on the resilience of crop farmers and the agricultural food sector during the pandemic period (Hossain, 2020).

According to Ulayi (2019), he noted that the emergence of COVID-19 is exacerbating already existing production challenges faced by farmers considering COVID-19 induced alteration in agricultural operation, associated challenges to food production and supply chain and its global impact has increased the vulnerability of agricultural production.

With the emergence of COVID-19, the state of food security and nutrition status of crop farmers was already alarming before the outbreak of COVID-19 and can worsen (FAO, 2020). The challenge of achieving the Zero Hunger target by 2030 (Sustainable Development Goal 2 (SDG2) is enormous with the estimated 820 million people being hungry in the world today (FAO, IFAD, UNICEF, WFP 2020). The outbreak of the disease has further revealed the link between poverty and hunger. Achieving the Sustainable Development Goal 1 (SDG1) of ending poverty in all its forms everywhere also means contributing to the Goal 2 of zero hunger. The emergence of the coronavirus pandemic and efforts to control its spread around the world have increased concerns about food security, especially because food security is not achievable in the face of trauma and poverty. The pandemic has health, social, economic, environmental, and even spiritual implications for humanity.

Food security is met when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and heady life. Food security has four major dimensions namely, availability, accessibility, utilization and stability.

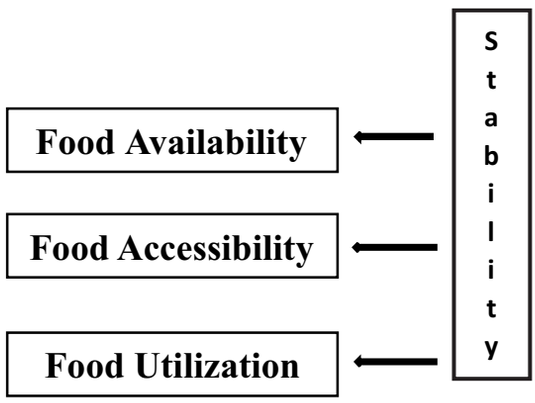

Figure 1: Four Pillar of Food Security

The effects of COVID-19 on food security must be discussed in the context of these dimensions to guide the process of identifying appropriate policies and interventions required to curb the situation.

EFFECT OF COVID-19 ON FOOD SECURITY

First pillar of food security is food avaliability: It represent the existence and supply of sufficient amount of food ready for consumption for all individuals in the households, country and region, through production, distribution, exchange and/or aid. (FAO, 2016). According to Sonnino *et al.,* (2014) argued that food availability is the amount, type and quality of food that a certain unit has at its disposal. At the household level, food availability refers to the abundance of adequate amounts of food for all household members, either through own production or by purchase. COVID-19 can have effects on production, processing and trade. The COVID-19 crisis is leading to instability in both local and global food markets, causing a disruption to food supply and availability (FAO, 2020). A statement by the leaders of FAO, WHO, and WTO said countries should ensure that any trade-related measures do not disrupt the food supply chain (WHO *et al.,* 2020).

The second pillar of food security is food access: This refers to the capabilities of region, locality,
households and/or individuals within a household, to have access to resources, and rights to acquire sufficient amounts and quality of food (Gross *et al.,* 2000; Rivera and Qamar, 2003). Having adequate supply of foods from production, stocks and imports is not enough. Households must have physical and economic access to the food. Either they are able to produce enough for household consumption or have the ability to purchase enough food for the household. With Covid-19 in place, crop farmers have experienced reduced incomes, coupled with increased expenditure on items such as hand sanitizers and face masks which did not exist before, putting pressure on food budgets and access. Also increase in transportation cost due to Covid-19 led to increase consumer's food prices, which affect access of food. Crop farmers also experience hike in local food items before, during and after the Covid-19 pandemic lockdown resulting to food not reaching farming families sufficiently as combined effect of economic slowdown and increase in Covid-19 spread further limited

food supply and access.

The third pillar of food security is food utilization: This refers to the ability of an individual to use food in a way that all physiological requirements are satisfied. Considering the food quality, it involves the importance of non-food aspects, such as availability of clean water and clean cooking fuel, hygiene and sanitation. The three underpinning elements of this pillar are diet diversity, proper preparation and handling, and absorption efficiency (Weingärtner, 2004; FAO, 2008; Pieters *et al.,* 2013; Pangaribowo *et al.,* 2013).

i) Diet diversity: This refers to the content of an optimum number of calories and nutrients in the food required by each member of the household. A household's staple crops may offer sufficient energy, but not contain optimum amounts of essential macro- and micronutrients, making the household members prone to malnutrition. Currently, this is the situation for more than 2 billion people around the world (FAO *et al.,* 2012). Alternatives at household level, the economic, educational, cultural and behavioral measures to promote the inclusion of animal products, fruits and vegetables in home diets, as it has been proven that wealthier and better-educated people have more diversified diets (Hatløy *et al.,* 2000; Ruel, 2002).

(ii) Proper preparation: The presence of nutritious food does not guarantee *Food and Nutrition Service*. Non-food inputs like clean water and energy are needed to appropriately prepare, consume and assimilate food. At the household level, the access to sufficient clean water and energy as well as their proper usage and handling are crucial factors to guarantee a safer, more palatable and more energy-efficient consumption of food.

(iii) Absorption efficiency: this is also known as nutrient utilization, this centers on an individual's physiological efficiency in absorbing the consumed food, and therefore well-correlated with the health status of the individual that, in case deficient, can impair the person's ability to benefit from the food (Weingärtner, 2004). At the household's level, absorption efficiency depends on the economic, educational and physical characteristics of a household in caring for the health of the family members. Food utilization is associated with the following challenges in times of food shortage, when income levels go down, and in times of reduced human interaction. Crop farmers may shift to the consumption of inferior foods, which may be more affordable. The pandemic may alter the eating patterns of people.

The fourth pillar of food security is stability: refers to the duration of the three other dimensions to remain stable over a long period of time (FAO, 2009). If food intake is adequate today but an individual or household has inadequate access to food on a periodic basis at other times, they are still considered to be food insecure (FAO, 2008). Crop farmers are considered food secured if food is available and accessible and properly utilized at all times. With rapid slowdown of major economic activities due to Covid-19 is also affecting farmers' food stability, causing food inadequacy, instability in food supply and intake among farming families. (FAO, 2008), further noted that periodic inadequacy in food intake risks a deterioration of nutritional status, and this can be affected by adverse weather conditions, political instability, unemployment, and rising food prices.

The precautionary control protocols, measures and lockdown instituted by governments to

control people movement around the world limited crop farmer's access to their farms, market and food supply chain thus affecting food production and farmers food security. In all these efforts to control the spread of COVID-19, one primary concern, which is a fundamental human need, is food security. According to Amenyah (2021), COVID-19 is a health crisis that need not become a food crisis. The spread of the virus resulted in the enforcement of restrictions on movement of people within and across countries with several countries closing their borders. Limited movement of people implies limited movement of goods and this affects food availability, accessibility and stability in food deprived areas that depend largely on food imports. The distribution and movement of food from points of production to the consumer have been affected.

The focus on crop farmers is very important for various reasons, as rural crop farmers play active role at the center of agricultural operations working on the land to produce high quality and high yielding fruits, nuts, cotton, grains, vegetables, sod, sugarcane, yam, cocoyam, cassava, potatoes, oranges, oil palm, rubber, banana, soybean, bean, tomatoes, pineapple, rice and other food crops (Ulayi, 2019), also contributing positively towards agricultural success, taking part in providing labor during crop farming activities i.e planting, weeding and harvesting.

It is evident today Covid-19 is far from being over and in the face of present day pandemic, consideration on Covid-19 induced impact on food and nutritional shortages of crop farmers is important, there is need to ensure that efforts tailored towards ensuring food safety of rural crop farmers should be channeled towards developing agricultural practice and system that will be environmentally friendly and also ensuring farmers safety and stable food supply because food is a necessity of life.

However, despite rural crop farmers' greater role in agriculture, most researchers have not given special emphasis on the challenges faced by farmers during Covid-19, example high cost of farm inputs, poor extension contact during Covid-19, inability of sell farm produce due to Covid-19 lockdown, increased post-harvest loses etc. Rural Crop farmers' offers tangible opportunity of breaking the bondage of food insecurity, poverty, hunger, while improving the levels of productivity and productive efficiency for the major food crops, and the levels are far from the optimum. This indicates therefore that ample opportunities exist for the farmers to increase their productivity and productive efficiency and food secured.

Recent research has focused on the Impact of COVID-19 on food security (Chamberlin *et al.,* 2020), more needs to be done to ascertain the effect of Covid-19 on food security status of rural crop farmers. Consequently, this research intent to investigate the perceived effect of Covid-19 pandemic on food security status of crop farmers in Imo State Nigeria.

OBJECTIVES OF THE STUDY

The broad Objective of the study was to ascertain the perceived effect of Covid-19 pandemic on food security status of rural crop farmers in Imo State Nigeria. The specific objectives were:

1. describe the socio economic characteristics of rural crop farmers in the study area
2. identify rural crop farmers covid-19 information sources.
3. determine the food security status of rural crop farmers during Covid-19 in the study area.

METHODOLOGY

The study area

The study was carried out in Imo State of Nigeria. Imo State is located in the Southeastern zone of Nigeria and lies between latitude 4^0 45° N and 7^0 15 N and longitude 6° 35^0E and 8°3^0E. The State covers a land area of 7,480km2 with a population of 3,939,899 people (NPC, 2016). Five distinct soil types have been identified in the state and these include lithosols, alluvial soil, ferralithic soils, medium fine alfisols and clayey hydromorphic soils. The state is characterized by tropical climate with high humidity and temperatures that range between 1500mm to 2300mm and 34°C to 37°C respectively (ISMANR, 1986). Imo state has a total number of 27 local government areas, with a high population density which exceeds that of the annual average of 166 persons per kilometer square (www.imostate.gov.ng). The state is divided into three main agricultural zones, namely Owerri, Okigwe and Orlu. The indigenes are predominantly Igbos and Christianity is the major religion, and their major economic activity includes the following: farming, trading, agro processing and other non-agricultural practices. The major crops grown by the people are banana, yam, cocoyam, maize, rice, leafy vegetables, melon, palm oil, etc. The state is also endowed with mineral resources like crude oil, natural gas, lead, zinc, aluminum (www.imostate.gov.ng).

Sampling Procedure and Data Collection

The multistage sampling techniques was employed in selecting respondent for study. Proportionate random sampling technique was used in selecting the sample communities. In the first stage, this method was considered appropriate based on the fact that the 3 agricultural zones in the state do not have equal number of local government areas (LGA's). Five local government areas were randomly selected from the Owerri agricultural zone. These LGA's are Owerri west and Aboh Mbaise, Ikeduru, Mbaitolu, Ngor Okpala. From each of these LGA's, 3 rural communities were randomly selected, thus giving a total of 15 rural communities. Furthermore, 3 villages were randomly selected from each of these rural communities. Finally 135 crop farmer was randomly selected from the rural villages. This gave a total of 135 crop farmers from the Owerri agricultural zone.

In the second stage, the same procedure was repeated in selecting the sample farmers from the Orlu agricultural zone. Four (LGA's) local government areas were randomly selected from Orlu agricultural zone. These LGA's are Isu, Njaba, Ideato South and Nkwerre. From each of these 4 LGA's, 3 rural communities were randomly chosen. Thereafter, 3 villages were randomly selected from each of the 12 rural communities, thus giving a total of 36 rural villages. Then, from each of these 36 rural villages, 90 crop farmer was randomly selected from the rural villages, thus giving a sample of 90 crop farmers from the Orlu agricultural zone.

In the third stage, the same procedure was repeated in selecting the sample farmers from the Okigwe agricultural zone. Similarly, 3 (LGA's) local government areas were selected from the Okigwe agricultural zone. These LGA's are Isiala Mbano, Onuimo and Ihitte Uboma. From each of these LGA's, 3 rural communities were randomly chosen, thus giving a total of 9 rural communities. Then, 2 rural villages were randomly selected from each of these communities. 45 crop farmer was randomly selected from the rural villages, thus giving a sample of 45 crop farmers from the Okigwe agricultural zone. These gave a total of 270 respondents. The sampling frame comprised the list of all registered arable crop farmers obtained from the Imo State Agricultural Development Programme (ADP) and Extension officers of the circle.

RESULT AND DISCUSSIONS

Socio-Economic Characteristics of Farmers

Table 1. Frequency distribution of farmers according to age and levels of education

Socioeconomic characteristics	Frequency (f)	Percentages (%)
Age (years)		
21-30	13	4.8
31-40	22	8.1
41-50	100	37.0
51 and above	135	50.0
Total	**270**	**100**
Mean age = 51 years		
Levels of educational attainment		
No formal education	18	6.6
Primary school attempted	33	12.5
Primary school completed	42	15.5
Secondary school attempted	24	8.8
Secondary school completed	93	34.4
Tertiary school attempted	27	10.0
Tertiary school completed	33	12.2
Total	**270**	**100**

Table 1 shows that majority (50.0 percent) of the rural women were aged 50 years and above with a mean age 51 years. This implies that the rural women engaged in agroforestry in the area were still in their active and productive age, and as such are expected to show greater zeal and enthusiasm in crop production practices in agreement with Onwumere (2008). These features could be valuable and predisposing to farming. More so, the crop farmers may have gained so many years of experience which could also be inspirational to farming activity, thus they may have known what they want and thus go out for it since they are still at their prime or active age. With respect to their levels of educational attainment the table also showed that 34.4% percent of the crop farmers in Imo state completed their secondary education been the highest educational attainment, 15.5 percent had primary education. Also 6.6 percent heard no formal education, 10.0 percent had access to adult education, while 12.2 percent had tertiary education. The result implied that 93.4 percent of the crop farmers had one level of formal

education or the other. Education is a priceless asset. It sharpens reasoning and improve the farmers wisdom in the use of farm resources. This portrays the rural women as literate farmers which is expected to stimulate their involvement in agroforestry practices in conformity with the assertion of Ani (2007) that literacy promotes farmers 'involvement and productivity in agriculture.

Table 2 Frequency distribution of farmers according to years of Farming experience and household size

Socioeconomic characteristics	Frequency	Percentage	mean
Farming Experience			
1-10	54	20.0	
11-12	88	32.6	
22-23	66	24.5	23
33-43	40	14.8	
44- above	22	8.1	
Total	**270**	**100**	
Household Size			
1-4	67	24.8	
5-8	168	62.2	**6**
9-12	31	11.5	
13- above	4	1.5	
Total	**270**	**100**	

Table 2 shows the frequency distribution of farmers according to years of farming experience, and household size. From the table majority; (32.6 percent) of the crop farmers had farming experience of 11-21 years in crop farming with a mean average experience of 23 years. This was enormous and priceless for farm decision making. By this, it is therefore pertinent to state that crop farmers had garnered extensive knowledge and skills needed to excel in agricultural practices according to Ariwaodo and Duru (2009). Participation on agriculture based on years of experience could open windows of opportunities and expose them to innovations that would improve their productivity. With respect to farmers' household size, the table also showed that majority (62.2 percent) of crop farmers had household size of 5-8 persons with a mean household of 6 persons, and this revealed that the farmers maintained a relatively moderate household. This is in consonance with the household population policy of Nigeria, 4 children to household of man and woman. The moderate Household size could be reflective of the economic reality of the present, where couples try to bear the number of children, they could carter for with less stress. Household members could serve as potential source of labour for agricultural and crop farming operations. This suggests that the crop farmers maintain moderate household size in corroboration of Owese *et al.,* (2009) that unlike pastoral farmers most crop farmers have small household size.

Table 3 Frequency distribution of farmers' monthly income and farm size

Socioeconomic characteristics	Frequency	Percentages	Mean
Monthly Income (₦)			
Less than 10,000	12	4.4	
11000 to 20000	32	11.9	
21000 to 30000	53	19.6	**₦ 32,426**
31000 to 40000	49	18.1	
41000 and above	124	45.9	
Total	**270**	100	
Farm Size (Ha)			
0-1	131	48.5	
2-3	104	38.5	**1.8**
4-5	32	11.9	
6-above	3	1.1	
Total	**270**	**100**	

Table 3 shows the frequency distribution of farmers according monthly income, and farm size. The result reveals that the monthly income of 45.9 percent of the crop farmers representing majority was ₦41,000 and above with a mean monthly income of ₦34,426. By this result, the crop farmers are earning above the national minimum wage of ₦18,000 and thus confirmed the finding of Ojo *et al.* (2009) that farmers engaged in crop farming are gainfully employed as they earn like their counterparts in civil service. The income could favor their capacity to gainfully involve in agricultural practices which will likely help them to improve their productivity.

The table also showed that the majority (48.5 percent) of crop farmers had 0-1 hectare of farm land committed to crop farming, while on the average farm size of crop farmers stands at 1.8 hectares. This result portrays the crop farmers as small-scale farmers who operate at subsistence level as earlier noted by Kareem *et al.* (2009) that crop farming is yet to receive the attention of large-scale farmers with large farm lands, and as a result has remained the enterprise largely undertaken by small holder farmers.

Table 4 Frequency distribution of farmers' based on Marital Status, Membership of Social Organization and primary Occupation.

Socioeconomic characteristics	Frequency	Percentages
Marital Status		
Single	15	5.6
Married	208	77.0
Separated	8	3.0
Widowed	39	14.4
Total	**270**	**100**
Membership of Social Organization		
Yes	99	36.7
No	171	63.3
Total	**270**	**100**
Primary Occupation		
Farming	93	34.4
Civil service	39	14.4
Teaching	20	7.4
Artisan	29	10.7
Food processing	19	7.2
Trading	63	23.3
Menial job	7	2.6
Total	**270**	**100**

The table shows that majority (77 percent) of the crop farmers indicated that they were married, 5.6 percent were single, 3.0 percent were separated while 14.4 percent were widowed. This implies that most crop farmers in Imo state were married, which goes to suggest in line with Ani (2004) that agricultural production especially at rural areas is dominated by active farmers. Thus, Marriage could positively influence the crop farmers' participation in agriculture as security of couples and progenies requires increased financial inflow to alleviate hardship and ensure meeting up with social and economic needs, with the sole aim of promoting their productivity, meeting up with social and economic needs and bettering their living standard. With respect to farmers' membership of social organization, majority (63.3 percent) of crop farmers in Imo state were not members of any social organization, while 36.7 percent were members of social organization. The membership of social organization by the crop farmers is imperative for progress in agricultural production. This is in corroboration

of Mbaya (2009) that many farmers are not improving productivity in agroforestry due to their disconnect with forums and platforms such as farms co-operatives, market association, commodity associations for information sharing. This result underlines the importance of encouraging crop farmers to enlist with rural social organization to explore and exploit the opportunities therein. The result also validated the crop farmers as occupational farmers with majority (34.4 percent) of them were found to be occupational farmers, and 23.3 percent of the farmers were traders. Also 14.4 percent of the farmers for civil service while 10.7 percent, 7.4 percent, 7.2 percent and 2.6 percent of the rural women farmers were artisans, teaching, food processing and menial jobs respectively.

However, the result implies majority of the crop farmers engaged in agricultural activities more than they did in other occupations. This result is at variance with the pessimism expressed in Nwachukwu (2008) that farmers are increasingly making agriculture their minor occupation as they massively abandon farming for other job sector.

identify rural crop farmers' covid-19 information sources.

Table 5: Frequency distribution of farmers sources of information

Sources of Information	Percentages	Ranking
Social Media	29.2	6th
Television	45.1	3rd
Newspapers/posters	11.1	9th
Religious Organizations	7.7	10th
Ministry of Agriculture	62.9	1st
Federal Ministry of Health	52.2	2nd
Medical website	18.5	7th
Family/ friends	16.6	8th
Social Organization	44.8	4th
Health care providers	29.6	5th

Multiple Response

N=270

Table 5 shows the frequency distribution of farmers source of information's about the Covid-19 pandemic period, the table revealed that primary source of information available to the farmer were the Ministry of Agriculture 62.9%, Federal Ministry of Health 52.2 such as WHO, FAO, NMA, NNMA, Television 45.1, Social Organizations 44.8 and Health care providers such as doctors, nurses and health workers dwelling with the study area. Other available sources of information available to crop farmers which ranked low were Social media 29.2, Medical websites 18.5, Family and friends 16.6, Newspaper and posters 11.1 and Religious Organizations 7.7. The result above suggest that, crop farmers believed that sources such as Ministry of Agriculture, Ministry of Health, Television and Social Organizations etc are channels which are considered active sources of information through which crop farmers are better informed of Covid-19 existence, its symptom and possible preventive measure put in place in other to stay safe. In sourcing information of social organization, from the result, the findings is in collaboration with (Mbaya, 2009), who noted that through effect connect with forums and platforms such as farms co-operatives, market association, commodity associations for information sharing. This result underlines the importance of encouraging crop farmers to enlist with rural social organization to explore and exploit the opportunities therein.

3.3: Food Security Status of Crop Farmers

Table 6: Frequency distribution of crop farmers' food security status during Covid-19.

Food security indicators	Percentages	Ranking	Decision
I am worried that household food will run out	2.3*	1.2	Agree
Food bought never last during Covid-19	2.7*	0.8	Agree
Could not readily afford to eat a balanced food	2.7*	0.8	Agree
Adult do not cut meal'	3.0*	0.7	Agree
Adult sometimes skipped meal	2.6*	1.5	Agree
Worried of starvation	2.5*	1.1	Agree
You ate enough always	2.1	0.4	Disagree
You were hungry, but had enough to eat	2.3	1.1	Disagree
You gained weight because family food was enough	2.4	0.5	Disagree
Adult never starved for a whole day	2.3	1.3	Disagree
Adult starved for a whole day for or more times in a month	2.3	1.2	Disagree
Different kinds of high-cost food were available for children	2.3*	1.2	Disagree
Fed children balanced meal always	2.5*	1.4	Agree
Children ate enough food	2.3	1.2	Disagree
Never cut size of children's meal	2.4	0.5	Disagree
Children never skipped meal up to three times or more in one month	2.5*	0.3	Agree
Children were never hungry	2.1	0.4	Disagree
Children never skipped meal	2.4	0.5	Disagree
Children always ate for whole day	2.6*	1.3	Agree
Grand Mean 2.4			

Source: Field survey data, 2020
No above the discriminating index 2.5 (food secured) and No below the discriminating index 2.5 (not food secured)

Table 5 shows the food security status of crop farmers. Crop farmers were found to indicate food insecure and less food secured in 10 food security indicators during the Covid-19 pandemic. A breakdown of their negative responses to the food security indicators used for the study include that farmers were worried that household food will run out (X = 2.3), they could eat enough always ($\overline{X}$= 2.1), You were hungry, but had enough to eat ($\overline{X}$ = 2.3), You gained weight because family food was enough ($\overline{X}$ = 2.4), Adult never starved for a whole day ($\overline{X}$ = 2.3), Adult starved for a whole day for or more times in a month ($\overline{X}$ = 2.3), Different kinds of high-cost food were available for children ($\overline{X}$ = 2.3), Children ate enough food (X =2.3), Never cut size of children's meal ($\overline{X}$ = 2.4), children were never hungry ($\overline{X}$ = 2.1), children never skipped meal ($\overline{X}$ = 2.4) From their majority responses which was below the grand mean of 2.4 obtained from the mean score of the table which was below the discriminating index on 2.5. This implies that based on this work that crop farmers were found foods insecured during the Covid-19 pandemic period.

Corroborating this result, (IMF, 2020) posited that Covid-19 is exacerbating rural crop farmers household food insecurity and also crippling on the global economy. IMF further noted that Covid-19 is tagged a global phenomenal threat, ranging from ill-health, food insecurity, economic shocks and setbacks, economic stagnation, human depression, poor social interaction, stagnant agricultural production, limited housing, limited education service delivery, and threat to well-being of rural crop farmers in Southeast Nigeria (Devereux *et al.,* 2020; Laborde *et al.,* 2020; Vanapalli *et al.,* 2020; Waltenburg *et al.,* 2020). This finding also conflicts with Ibok *et al.,* (2014) who reported that food crop farmers in rural area were food secured.

CONCLUSION AND RECOMMENDATIONS

The focus on crop farmers is very important for various reasons, as rural crop farmers play active role at the center of agricultural operations, also contributing positively towards agricultural success, taking part in providing labor during crop farming activities i.e planting, weeding and harvesting. They offers tangible opportunity in breaking the bondage of food insecurity, poverty, hunger, while improving the levels of productivity and productive efficiency for the major food crops, and the levels are far from the optimum. Food insecurity situation in Nigeria is worsening with the passage of time due to the wide-gap between the national supply and demand for food. Despite the increase in agricultural and food policies in Nigeria, it has being strongly hard to reduce the number of food insecure rural crop farming households, therefore, making it a priority in Nigeria's government agenda. Therefore, this study examined the food security status among rural crop farming households during Covid-19 pandemic. They result showed majority of rural crop farming households in the study area were found to be food insecure during Covid-19 with majority responding negatively to food security indicators used for the study. The study made a case for the enhancement of food security through increase in productivity of food crops. The study concludes that there is need for increased productivity among rural crop farmers in the study area if productivity policies and strategies implemented by government in other to ease Covid-19 challenges faced by farmers. The sooner the better if efforts channeled toward enhancing the production capacity of crop farmers and the following policy recommendations are adhered to.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. The government should be encouraged

to enact policies that will improve on the socioeconomic wellbeing of rural crop farmers which will encourage crop farmers' resilience in agriculture via awareness creation geared toward profit maximization, income generating activities that can make them to be food secured in the study area.

2. There should be advocacies by intervention agencies (including extension services) towards designing palliative measures which they could use in cushioning Covid-19 associated challenges and effect and improve on the food status.

3. The Government should further design viable, accessible and cost effective sources of information as these will enable farmers receive trending information's relating to their field and further utilize the provided information to achieve a specific purpose or goal

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