



SUSTAINABLE PALLIATIVE PROGRAMMES FOR REDUCING THE IMPACT OF CORONA VIRUS PANDEMIC ON FOOD INSECURITY OF CROP FARMERS IN TARABA STATE, NIGERIA

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ABSTRACT

The research was conducted to determine sustainable palliative programmes for reducing the impact of corona virus pandemic on food insecurity of crop farmers in Taraba State, Nigeria. The specific objectives were to; describe socio-economic characteristics of the crop farmers, determine impactful effects of corona Virus on production efficiencies of the crop farmers and to describe constraints facing the crop farmers before and during the corona virus pandemic. Data for this research were collected using a structured questionnaire administered to 3,000 maize and rice farmers selected via a multi-stage random sampling procedure. Both descriptive and inferential statistics were used to analyse the data collected. The results revealed that majority (64%) of the crop farmers in the study area were males while 54.00% of the respondents were married. The result revealed also revealed that before COVID-19 pandemic, 75% of maize farmers operated on full time basis but during the COVID-19, only 26% operated on full time basis. However, similar trend occurred among the rice farmers where 85% of the farmers were into full time operation before the COVID-19, but only 47% operated during the COVID-19 period. Similarly, maize farmers had an average farm size of 2.30 ha while rice farmers had 2.91ha before the pandemic, but due to lockdown and difficulty in engaging labourers, the average farm size was reduced to 1.03ha and 1.24ha respectively during the outbreak of the pandemic. The major constraints posed by Covid-19 on maize and rice production farmers were; reduction in farm income due to the lockdown (3.72*), inadequate transport facilities to move rice output to the market (3.61*) and fewer hours used in the farm (3.58*). The study concludes that Covid 19 had negative effects on both maize and rice farmers in the study area during the lockdown. The study recommends that Covid-19 protocols should be educated to the maize and rice farmers in the study area in order for them to carry out their maize and rice farming without hindrances.

Keywords: Covid 19, Farmers, Food, Pandemic

INTRODUCTION

The Corona Virus (Covid-19) outbreak has ravaged nations across the globe, and as such, it is essential to address its existing and potential impacts on the agriculture, from the perspective of both food supply and food demand. Ensuring the continued functioning of global and national food supply chains will be crucial in securing food supply, preventing a food crisis in countries that are already experiencing food and nutrition security challenges, and reducing the overall negative impact of the pandemic on global economy (Esiobu, 2020). However, sustainable agribusiness systems mean successful management of natural resources for agribusiness to satisfy changing human needs while maintaining or enhancing the quality of and conserving natural resources. Most of the prevalent land use systems in tropics are characterized by a rapid decline in productivity and high rates of soil and environmental degradation. Sustainable agriculture refers to economic, ecological and social sustainability.



Any farming system that is going to be sustainable must be so in all these farmers cannot continue the farming business, if the farming operation is not economically viable, regardless of how fine it may be ecologically. While there is considerable debate about exactly what constitutes sustainability, in general, it is defined in terms of practices that not only allow for quality of life and agricultural production for this generation but also for future generations (Udemezue, 2014). Despite its declining share in global employment, agricultural output has continued to grow. Coupled with urbanization, increasing per capita incomes, and export opportunities, the transformation of the food system has been translating into new jobs in the larger agricultural sector, which includes agriculture and related non-farm sectors, such as processing, manufacturing, food marketing, transportation, and food preparation. The agricultural sector already employs the majority of those in self- and wage employment in developing countries. However, at present, many of these jobs are characterized by decent work deficits resulting from inter alia: weak labour market institutions, including ineffective law enforcement, labour inspection and compliance; inadequate environments for enterprise development; low productivity; climate change; prevalent informality; poor infrastructure; and limited access to social protection and other services, including education and health-care.

Food and Agricultural Organisation (FAO, 2020) reported that corona virus pandemic popularly called Covid-19 has seriously decimated farmers' hopes overnight which became the latest problem to disproportionately affect farmer's population. With stay-at-home orders in place, demand for nearly every agricultural product has collapsed, Restaurants have stopped buying food, purchases of cotton for consumer goods have slowed, and low oil prices have reduced demand for ethanol, hurting corn planters. Some farmers have dumped their product, and others have held off on harvesting it in the first place. Farmer advocacy groups, meanwhile, are warning that American family farms maybe teetering on the brink of collapse (FAO, 2020). Poverty is all about the people's socio-economic welfare and food security. In 2020, Sokoto, Taraba, Jigawa records highest poverty rate as Nigeria's poor hit 82.9 million. The number of persons living below the line of -\$1.9 a day- in Nigeria stood 82.9 in 2019 (State-funded Agency, National Bureau of Statistics [NBS], 2019). According to the NBS (2019), in a poverty and inequality data released, Africa's largest economy which also holds the mantle of being the most populous nation in the continent, recorded a poverty rate of 40.09%, with the area accounting for the larger chunk of the figure of 52.18%. Recently, states of Sokoto (87.73%), Taraba (87-72%) and Jigawa (87.02%), reported the highest poverty incidence, however, various agricultural programmes and policies, both public and private were put in place to change the agriculture and rural development sector into the desired sustainable conditions. Most of these programmes and policies have failed to the rural areas and or increase farmer productivity and livelihood in a more sustainable way. They die of the innovating regimes or at the exit of the donor agencies. In Nigeria and the world in general, since the agricultural environment keep deteriorating, the sustainability of the key technological paradigms of agribusiness or food production process since colonial or independence of 1960 must be maintained. There are now over 6.5 billion people on the for latest population estimates. The Food and Agriculture Organization (FAO) listed Nigeria among countries that are technically unable to meet their food needs from rain fed production. Thus, there is a need to increase the productivity of the abundant irrigable land in the and that of the few fanners engaged in farming system. Economic sustainability requires selecting profitable enterprises and doing comprehensive financial planning. Social sustainability involves keeping money circulating in the local economy, and maintaining or enhancing the quality of life of the farm family. Environmental sustainability involves keeping the above four ecosystem processes in good



condition. A clear goal setting is needed to manage environment, economics, and society simultaneously.

The problem of sustainability in the present form of input intensive agriculture is a major concern for all stakeholders. The key challenge is how to make agricultural systems more sustainable in a world where food supply chains are increasingly globalized and complex; and pressures on farmers' livelihoods are strong. This survey title "sustainable palliative programmes for reducing the impact of corona virus pandemic on food insecurity of crop farmers in Taraba State, Nigeria is one of the core factors considered in determining the level of inequality and poverty especially in developing countries; is also a core strategy to alleviate poverty in recent times by the World Bank that has shown to be an effective tool against poverty and food security. The study is significant to the government and policy makers to furnish them with relevant data and insight to formulate sustainable policies that will increase agricultural sectors to optimum level by increasing the budgetary allocated to the sectors and enhancing farmers' welfare to increasing agricultural productivity to meet increasing demand on food security and accelerated economic growth demand. The study also serves as an advisory service to the crop farmers to focus on more productive income-generating activities such as improving their practice and utilizing the farm efficiently so that more output will be realized from the farm and improve their living standards. This survey results also contribute to the body of knowledge which proffer solutions to the problem of low accessibility, low marketable surplus, low repayment capacity upsetting crop farmers in Nigeria agricultural sector and contribute positively towards the achievement of self-sufficiency. There seems to be a gap in knowledge existing in the area of this subject matter in relation to the study area. Therefore, the study also fills the gap by understanding crop farmers' expectation regarding role of sustainable palliative programmes in increasing their income and also their path-way out of chronic poverty and food insecurity. Finally, it is hoped that this survey work will be useful to researcher who wish to identify other areas for further study on crop farmer's productivity sustainability in the study area. The broad objective of the study is to conduct a research on sustainable palliative programmes for reducing the impact of corona virus pandemic on food insecurity of crop farmers in Taraba State, Nigeria. The while specifically the study seeks to;

- i. Describe socio-economic characteristics of the crop farmers;
- ii. determine impactful effects of corona Virus on production efficiencies of the crop farmers and;
- iii. Describe constraints facing the crop farmers before and during the corona virus pandemic.

METHODOLOGY

Study Area

Taraba state was created out of the former Gongola State on 27 August 1991, by the military government of General Ibrahim Babangida. The State is bounded in the west by Plateau and Benue States and on the east by the Cameroon. Taraba State lies largely within the middle of Nigeria and consists of undulating landscape dotted with a few mountainous features. These includes the scenic and prominent Mambilla Plateau. The state lies largely within the tropical zone and has a vegetation of low forest in the southern part and grassland in the northern part. The Mambilla Plateau with an altitude of 1,800 meters (6000 ft) above sea level has a temperate climate all year round. Rivers Benue, Donga, Taraba and Ibi are the main rivers in the state. They rise from the Cameroonian mountains, straining almost the entire length of the state in the North and South direction to link up with the River Niger.



Taraba State consists of sixteen (16) Local Government Areas (or LGAs). They are governed by elected chairmen. They are as follows: Ardo Kola, Bali, Donga, Gashaka, Gassol, Ibi, Jalingo, Karim Lamido, Kurmi, Lau, Sardauna, Takum, Ussa, Wukari, Yororo, Zing. The major occupation of the people of Taraba State is agriculture. Cash crops produced in the state include coffee, tea, groundnuts and cotton. Crops such as maize, rice, sorghum, millet, cassava, and yam are also produced in commercial quantity. In addition, cattle, sheep and goats are reared in large numbers, especially on the Mambilla Plateau, and along the Benue and Taraba valleys. Similarly, the people undertake other livestock production activities like poultry production, rabbit breeding and pig farming in fairly large scale. Communities living on the banks of River Benue, River Taraba, River Donga and Ibi engage in fishing all year round. Other occupational activities such as pottery, cloth-weaving, dyeing, mat-making, carving, embroidery and blacksmithing are also carried out in various parts of the State. Taraba is called "Nature's gift to the nation" as the state is rich and have many ethnic groups, including Jenjo, Kuteb Chamba, Mumuyes, Mambila, Wurkums, Fulanis, Jukun, Ichen, Tiv, Kaka, Hausa and Ndoro.

Sampling Technique and Sample Size

Multi-stage sampling procedure was used in selecting the respondents. In the first stage, two LGAs were randomly selected from the three agricultural zones namely; Northern Taraba (Ardo-kola and Jalingo Local Government Area), Central Taraba (Gashaka and Sardauna) and Southern Taraba (Ibi and Wukari) in the State giving a total of six LGAs. In the second stage, from the selected LGAs 6 districts were randomly selected making a total of 36 districts. In the final stage, proportionate sampling technique was used to select 3,000 households as the sample size of the study.

Data Collection

Data for this study were collected through the administration of structured questionnaires which were distributed to respondents drawn from the study area. The survey also used participatory and complementary approach (focus group discussion and survey) in collecting qualitative and quantitative data.

Data Analysis

Data were analyzed using both descriptive and inferential statistics. The descriptive statistical tools (frequency distribution, mean and percentages,) and inferential statistics like Food Security Index (FSI) and regression model were used.

RESULT AND DISCUSSIONS

Effects of Covid 19 on the Socio-economic Characteristics of Crop Farmers in Taraba State

The results from Table 1 depicts the socioeconomic variables of the respondent. The results revealed that majority (4%) of the crop farmers in the study area were males, while females constituted 36.8% of the crop farmers. This result indicates that cropping activities were undertaken by both males and females alike, even though the proportion of male are greater in the study area. It implies that cropping is not a gender selective activity as both sexes are actively involved in cropping activities in the study area. This result agrees with that of Afolami *et al.* (2012) in their study of rice production in Ekiti and Ogun States, who found out that male farmers, dominated rice production.

The results also revealed that more than half (54.00%) of the respondents were married, while 32.00% were single. This implies that more married persons are involved in crop farming production in the study area. The higher proportion of married crop farmers in the study area could be attributed to the social status that is attainable by married persons. This result is in



agreement with that of FAOSTAT (2012) who reported that a greater proportion of rice farmers are married due to the fact that men and women seek assistance to meet their family labour demands in farming.

The result further revealed that 38.00% fell within the age range of between 31-40 years, while 22%, 20%, 14.% and 6% of the crop farmers fell within the age of 41-50, 21-30, 51 and above and less than 20 years, respectively. The result also indicates that most farmers (60%) are within the age bracket of 31-50 years. This result is similar to the Ohen and Ajah (2015) who reported a mean age of rice farmers in Cross River state at 35 years.

The results also revealed that (38.00% of each of the respondents had crop farming experience of more than 10 between 6-10 years, respectively while 24.00% had between 1-5 years. This result indicates that the farmers has wealth of experience in crop farming, the farmers would have several COVID-19 pandemic strategies to increase their farm output as well as well as their farm income.

The study revealed that less than half (48.00%) of crop farmers had farm income of more than N200,001.00 which is less than the result obtained by Ohen and Ajah (2015) who found that the average farm income of rice farmers in Cross River state was N385,204.00/annum. Also, Udemezue (2014) in his study of Faro-44 of rice production in Nigeria found that the average annual farm income of rice farmers was N468,803.00. The reduction in the average farm income of the crop farmers in the study area may be as a result of the lockdown during the Covid 19 and it was found that majority (70.00%) of the respondents had no access to credit facilities for use in their crop production while 30.00% responded that they had access to farm credit. This suggests that crop farmers in the study could not adequately access and acquire credit facilities to enable them improve on their scale of farming. Also, the COVID-19 pandemic restrictions must have made it difficult for the maize and rice farmers to get farm inputs like seeds, fertilizers and other agro-chemicals to improve on their rice farm production during the lockdown.



Table 1: Socio-economic characteristics of small-scale crop farmers

Variable	Frequency	Percentage (%)
Gender		
Male	1,920	64.00
Female	1,080	36.00
Total	3,000	100
Marital status		
Single	960	32.00
Married	1,620	54.00
Divorced	270	9.00
Widow	60	2.00
Widower	90	3.00
Total	3,000	100
Age (years)		
< 20	180	6.0
21 – 30	600	20.00
31 – 40	1,140	38.00
41 – 50	660	22.00
>51	420	14.00
Total	3,000	100
Family size		
2 – 5	690	23.00
6 – 10	1,590	53.00
>10	720	24.00
Total	3,000	100
Educational level (years)		
Never attended school	240	8.00
Primary school	360	12.0
Secondary school	1,800	60.00
Tertiary institution	600	20.00
Total	3,000	100
Farming experience (Yrs)		
1 – 5	720	24.00
6 – 10	1,140	38.00
>10	1,140	38.00
Total	3,000	100
Annual farm income		
<N100,000	690	23.00
N100,001 – N200, 000	870	29.00
>N200,001	1,440	48.00
Total	3,000	100
Access to credit		
No	2,100	70.00
Yes	900	30.00
Total	3,000	100

Source: Field Survey, 2024



The Impact of COVID-19 Pandemic on Cropping Activities

Table 2 shows the various cropping activities engaged by the farmers and the impact of COVID-19 on such activities. The result clearly revealed that various cropping activities of the farmers were affected during the covid-19 period. Before COVID-19 pandemic, 75% of maize farmers operated on full time basis but during the COVID-19, only 26% operated on full time basis. Similar trend occurred among the rice farmers where 85% of the farmers were into full time operation before but 47% during the COVID-19 period. This shift in mode of operation can be attributed to the fact that there was need for farmers to engage in other activities to earn a living. Esiobu, 2020 and Obayelu *et al.* 2021 had earlier reported that there were many negative impacts due to the outbreak of the pandemic. Maize farmers had an average farm size of 2.30 ha while rice farmers had 2.91ha before the pandemic, but due to lockdown and difficulty in engaging labourers, the average farm size was reduced to 1.03ha and 1.24ha respectively during the outbreak of the pandemic. Another possible cause of this reduction in farm size is unavailability of farm inputs and the fact that many people who were not farmers before decided to engage in one farming activity or the other due to high cost of food items. The average yield of maize before the pandemic was 3234.20kg but this reduced to 3032.07kg during the pandemic. Rice average yield of 2308.22kg before the pandemic fell to 1814.15kg during the pandemic. Again, this can be linked to a reduction in farm size, inadequate source of farm inputs and lack of adequate post planting activities. This finding supports the assertion that the pandemic led to post-harvest losses and poor farm management (Obayori, 2020).

The average total cost of production increased by N71,539.02 and N40,989.51 respectively, in maize and rice enterprises during the COVID-19 period. The high cost of labour, high cost of inputs and high cost of transportation must have contributed to this increase. Looking at the average total costs of both enterprises, it can be seen that the impact was more on maize farmers as their average total cost of production has increased more than that of rice farmers during COVID-19 pandemic. Table 2 further reveals an average total revenue of N285,602.12 for maize farmers and N418,511.22 for rice farmers, as well as an average total revenue of N315,208.11 for maize farmers and N407,304.51 for rice farmers before and during the pandemic, respectively. The average profits made by maize farmers were N57,019.93 and N15,086.90, before and during the pandemic respectively, while those of rice farmers were N93,360.50 and N41,164.28, before and during the pandemic, respectively. A drop in average profit is clearly seen in both enterprises. The impact of COVID-19 shocks must have contributed to this drastic drop. Generally, 30% of the farmers diversified into agricultural enterprises while 62% did not diversify at all before the pandemic, but during the pandemic, about 60% diversified into agricultural enterprises, 33% into non - agricultural enterprises and 7% did not diversify at all. Diversification into agricultural enterprises during the pandemic was more pronounced among maize farmers than among rice farmers. In both enterprises, many farmers who earlier did not diversify into any enterprise shifted to agricultural and non - agricultural enterprises to support their means of livelihood. In both enterprises more farmers had no easy access to farm inputs during the pandemic. They had to source their inputs in many ways. This could be attributed to lockdown effects and social distancing. The rice farmers were more affected as up to 65% of them had no easy access to input during the pandemic. The farmers explained that input support was given, though in an unorganized way, and some farmers were cautious of going out to avoid contracting the deadly disease (FAO, 2020).

The fear of uncertainty and unavailability of fund must have contributed to the finding on access to credit. Before the pandemic, as many as 85% of maize farmers and 55% of rice farmers had access to credit, but a drastic drop was noticed during the pandemic as only 35% of the maize farmers and 34% of the rice farmers had access to credit facilities. This shows that



more than 65% of the farmers had no access to credit during the pandemic. The lockdown effect, restrictions on movement and fear of contagion forced people to stay indoors most time and this heavily impacted on the ease of marketing of produce. The result in Table 2 also revealed that while 90% of the maize farmers marketed their produce with ease before the pandemic, only 15% marketed with ease during the pandemic. This shows that over 70% of the farmers struggled to sell off their farm produce. Movement restrictions and high cost of production which led to high cost price of produce all contributed to this and source of labour was more of hired labour before the pandemic but more of combined and family labour during the pandemic. This is due to the fact that offices and schools were closed, hence family members were available to be used as an alternative source of labour. As expected, transportation was a challenge during the pandemic due to movement restrictions and fear of contagion. The visits of extension agents were also affected as 74% of the farmers affirmed that extension agents visited before the pandemic, but only 40% of the farmers responded such visits during the pandemic. Again, the lockdown effect, and fear of contagion played glaring roles in this.

Table 2: Impact of COVID-19 on Cropping Activities in Taraba State

	Maize farmers		Rice farmers	
	Before COVID	During COVID	Before COVID	During COVID
Mode of operation				
Full time	2,250(75)	780(26)	2,550(85)	1,410(47)
Part time	750(25)	2,220(74)	450(15)	1,590(53)
Av. Farm size (Ha)	2.30	1.03	2.91	1.24
Av. Yield/Ha (Kg)	3234.20	3032.07	2308.22	1814.15
Av Total cost (N)	228,582.19	300,121.21	325150.72	366,140.23
Av Total Revenue (N)	285,602.12	315,208.11	418,511.22	407,304.51
Av Profit (N)	57,019.93	15,086.90	93,360.50	41,164.28
Diversification				
None	1,860(62)	210(07)	2,400(80)	180(06)
Non agric enterprise	240(8)	990(33)	150(05)	930(31)
Agric enterprise	900(30)	1,800(60)	450(15)	1,890(63)
Agro-input availability				
No access	1,200(40)	1,620(54)	960(32)	1,950(65)
Access	1,800(60)	1,380(46)	2,040(68)	1,050(35)
Credit facilities				
No Access	450(15)	1,950(65)	1,350(45)	1,980(66)
Access	2,550(85)	1,050(35)	1,650(55)	1,020(34)
Ease of marketing				
Not easy	300(10)	2,550(85)	450(15)	1,950(65)
Easy	2,700(90)	450(15)	2,550(85)	1,050(35)
Source of labour				
Family	270(09)	1,080(36)	600(20)	1,320(44)
Hired	1,710(57)	360(12)	1,290(43)	720(24)
Family and hired	1,020(34)	1,560(52)	1,110(37)	960(32)
Market Price of produce				
Low	900(30)	300(10)	780(26)	480(16)
Moderate	1,350(45)	840(28)	1,560(52)	660(22)
High	750(25)	1,860(62)	660(22)	1,860(62)
Ease of transportation				
Not easy (difficult)	1,140(38)	2,250(85)	1,110(37)	2,400(80)
Easy (not difficult)	1,860(62)	450(15)	1,890(63)	600(20)
Extension contact				
None	780(26)	1,800(60)	150(05)	1,920(64)
Yes	2,220(74)	1,200(40)	2,850(95)	1,080(36)

Source: Field Survey, 2024

Constraints of Covid 19 on Maize and Rice Farmers in the Study Area

The major constraints posed by Covid-19 on maize and rice production farmers in the study area were presented in Table 3. It showed that reduction in farm income due to the lockdown (3.72*), inadequate transport facilities to move rice output to the market (3.61*), fewer hours used in the farm (3.58*), no access to credits (3.52*), no extension agents



supervision (3.52*), inadequate supply of farm tools (3.43*), irregular open markets outlets (3.32*), high cost of seeds for planting (3.24*), lack of improved maize and rice varieties seen during the period (3.17*) and farm sizes were reduced because of the lockdown (3.06*) were considered as critical problematic factors posed by Covid 19 during and after the lockdown in the study area.

Table 3: Constraints of Covid 19 on maize and rice farmers in the study area

S/no	Constraints	Mean (M)	Remarks
1.	Reduction in farm income due to lockdown	3.72*	Critical
2.	Inadequate transport facilities	3.61*	Critical
3.	Reduction in the man-days used	3.58*	Critical
4.	No access to farm credits	3.52*	Critical
5.	No Extension agents information	3.52*	Critical
6.	Inadequate supplies of farm tools	3.43*	Critical
7.	Irregular open markets outlets	3.32*	Critical
8.	High costs of seeds for planting	3.24*	Critical
9.	Lack of improved maize and rice varieties	3.17*	Critical
10.	Reduction in farm sizes	3.06*	Critical

Source: Field Survey, 2024

CONCLUSSION AND RECOMMENDATION

The study conclude that Covid 19 had negative effects on both maize and rice farmers in the study area during the lockdown as the farmers had reduction in their average annual farm income, farm sizes were reduced as well as the numbers of hours used in their fields. The study recommends that:

- i. Covid-19 protocols should be educated to the rice farmers in the study area so that they can adhere strictly to carry out their maize and rice farming without hindrances.
- ii. There is need to encourage the farmers to diversify to other agricultural enterprises. Diversification will be a way out in a situation such as this, so that if one enterprise fails, the farmer will have another to lean on.
- iii. Government should make policy aimed at supporting rural farmers to mitigate the impact of a pandemic such as COVID -19.
- iv. The Government at all levels, Non-Governmental organisations and individuals should target the rural farmers while giving interventions to improve agricultural input supply and other support services to ease the pandemic impact. Such acts should be properly monitored to meet the target population.
- v. Credit and financial assistance should always be made available and accessible to the rural farmers.

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