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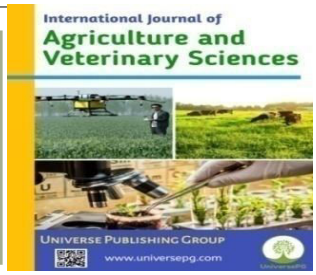

Socioeconomic Effects of Oyo State Government COVID-19 Palliatives on Tomato Smallholder Farmers

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ABSTRACT

This study interviewed 197 farmers that benefitted from the government palliative in the form of tomato farm inputs to help farmers contain the negative effects of COVID-19 of hunger, food insecurity, and poverty. Demographic features show that the average family size was 6, average age of the beneficiaries was 43, gender of the household heads shows that the beneficiaries have 67% males and 33% females. Production features show that 28% of the tomato farmers intercropped their tomato with other crops, 40% of them went through government training, and 25% of them accessed credit to take of their farms. Farmer to farmer was the main source of information (77%). Using the Likert Scale characterization shows that 74.6% of the farmers believed that the palliative increased their yield, 81.2% agreed that the palliatives just reduced hunger in their household, while 86.3% agreed that there was an increase in their farm income as a result of the intervention. Logit regression results reveal that Farmer's Age, Farm Income, Loan Access, and Tomato Yield are the factors that significantly increased perception of tomato farmers on hunger reduction. Farm Income and Loan Access factors have a positive coefficient which is significant at the 1% level, while Farmer's Age and Tomato Yield have positive coefficients but is significant at the 5% level. Association Membership negatively and significantly reduced farmers' perception of hunger reduction at the 5% level of probability while farmer-to-farmer information sources significantly reduced it at a 1% level of probability; meaning that only government extension agents and the media positively influenced information transfer on the government palliative efforts. The study recommends that government assistance should be extended to other resource-poor farmers and that getting access to loans should be made easier for farmers by the government.

Keywords: Likert scale, Logit regression, Palliatives, COVID-19 palliatives, and Hunger reduction.

INTRODUCTION:

Food security is when all people have physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs at all times (FAO, 2015; FAO, 2017). Food insecurity (FINS) is defined as the limited or uncertain availability of access to adequate and culturally appropriate food for lack of money or other resources (FAO, 2002; Peng and Berry, 2019; WFB, 2016). FINS in SSA is the outcome of multiple causal factors: the socio-economic, political & biophysical (Babatunde *et al.,* 2007; Allouche, 2011; Gregory *et al.,* 2005; and Apanovich and Mazur, 2018).

Agriculture plays a central role in food security, in SSA, where most of the population depends on subsistence farming. Agriculture's impact is depen-dent on good-quality soils and household socioeco-

nomic status; thus the need to incorporate natural and human resources in the analysis of food security (FAO, 2002; Hossain *et al*., 2019).

The Coronavirus (COVID-19) pandemic is a global health crisis caused by a newly discovered coronavirus (Di Gennaro 2020). COVID-19 is a pandemic calamity that has locked people in their own houses. The effect of the pandemic has caused a decrease in the economy as businesses, trans- portation, aviation, and industries have been halted the severe impact of the COVID-19 pandemic is clearly seen in the numbers: more than 3.1 million deaths and rising, 120 million people pushed into extreme poverty, and a massive global recession. The pandemic affects socioeconomic and food security (FS) worldwide as people were restricted from going for socioeconomic activities like farming or working place if they don't want to be contacted with Covid-19. Global access to food in developing countries like Nigeria, has become an alarming concern since the emergence of the Coronavirus that led to a great shortage of food supply chains and a significant loss of jobs (Petit *et al.,* 2021). The United Nation's Framework for the Immediate Socioeconomic response reported that the virus would most likely increase poverty, food insecurity (FINS), and inequalities on a global scale. Therefore, achieving Sustainable Development Goals (SDG) is perceived as a top priority (United Nations, 2020; Perez-Escamilla, 2017). Moreover, the FAO defines sustainable food systems "as the set of farms and enterprises and their successive coordinated value -adding activities that produce particular agricultural raw materials and process them into particular food products that are sold to final consumers and disposed of after use, in a way that is profitable across the board, has broad benefits for society and does not deplete natural resources permanently (Neven, 2014)". Poverty, poor health of household member(s), as well as suboptimal livelyhood and household management strategies, could lead to FINS. The severity and classification of FINS depend on the perception of the household member towards food and food-related budget (Ballard, 2013). Consequences and threats of FINS include a negative impact on mental, social, and psycho-emotional status (Perez-Escamilla, Chinnakali *et al.,* 2014; Egal, 2019; USDA, 2021). Food security and hunger may not always intersect, but they are related; if people are food insecure for months at a time, they may very well experience a substantial drop in food intake that leads to hunger. Food insecurity differs from hunger, the physiological process that occurs when an individual cannot afford to eat an adequate amount of food that would cater to their basic nutritional need for a prolonged period. Nigeria is no exception, with a population of over 190 million, and Gross Domestic Product (GDP) projected to be $500 billion, with an annual growth rate of around 3%. The revenue from crude oil and gas accounts for about 80% of the country's total earnings (Federal Ministry of Agriculture and Rural Development, FMARD, 2018) cited in (Fasanya and Odudu, 2020). Despite the monocultural characteristics of the oil sector in Nigeria, the agricultural sector dominates the major source of livelihood for most people in Nigeria, with about 70 % of the population engaged in agriculture at a subsistence level, and it recently contributed 22.35% of the total GDP between the January and March 2021 (FAO, 2021). Overall, inadequate access to finance, fertilizer with other inputs, storage facilities, violent conflicts, and markets have restrained the sector's full potential over the years (Nicholson *et al.,* 2019; FAO, 2021).

Nigeria will continue to depend on agriculture to meet its various socioeconomic needs, considering its role in providing food and employment for the nation's ever increasing population. Tomato (*Lycopersicom esculentum*) is among the major vegetables produced in the country, and is consumed in various forms (Aditi *et al*., 2011; Aremu *et al*., 2016). Nigeria is among the world's leading producers of tomato (ranked 16th), and the leading producer in sub-Saharan Africa (Ugonna *et al.*, 2015). As of 2010, the country's production was about 1.8 million metric tonnes, which represent about 68.4% of West African production (FAO, 2010). Despite this status in the global and regional ranking in tomato production, the country still imports tomato to meet its demands (Edeh, 2017; Okojie, 2018). According to Sunday *et al.* (2018), Nigeria's annual tomato imports are valued at US$170 million. This is because tomato is highly consumed across all the regions of the country, constituting about 18% of the daily vegetable consumption of households (Babalola *et al*., 2010). The plant is a rich source of vitamin A and C, contains minerals like iron and phosphorus, and is the richest source of nutrients, dietary fiber, antioxidants like lycopene and beta-carotene, com-

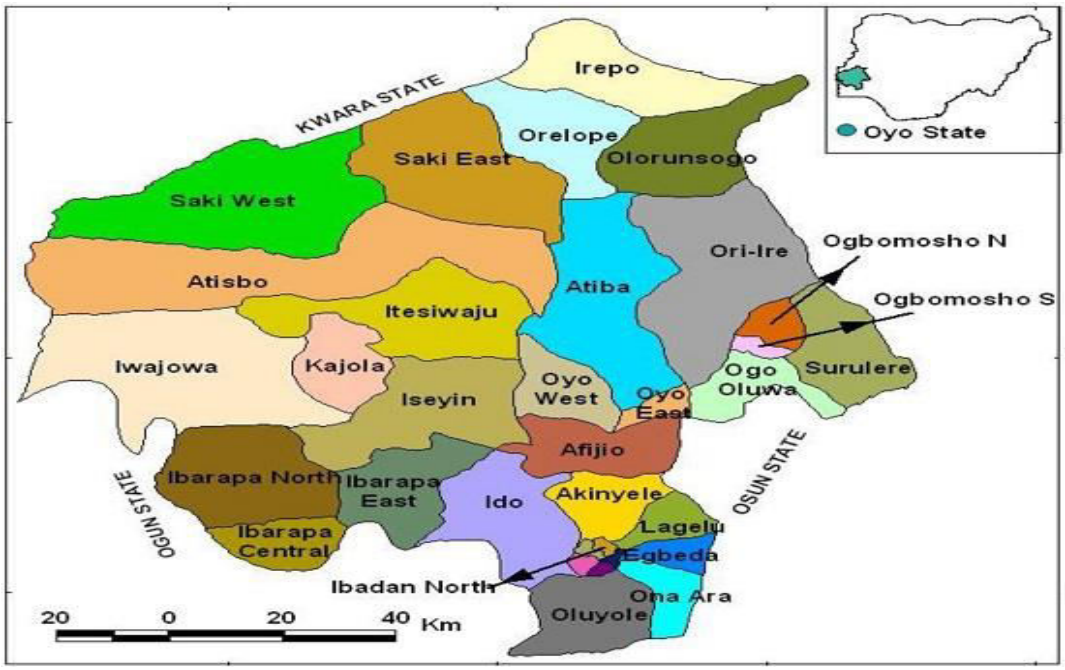
pounds that protect cells from cancer. Tomato's ability to be a nutritious food that meets Nigerian dietary needs and food preferences for an active and healthy life makes it a food-security food. The plant's life span ranges between three to four months and it adapts well to different cropping systems.

Summarily, the pandemic brought an overwhelming defect to the global economy. Smallholder farmers were severely affectedand as part of the palliative measures embarked upon by the various governments, the Oyo State government came up with the provision of agricultural inputs for tomato, including tomato seed, fertilizer, and herbicides with other agricultural inputs to the beneficiary smallholder farmers. The study investigates the effect of the palliative inputs given to tomato peasant-farmer beneficiaries in all LGAs in Oyo State. In this paper, Section 1 offers a general overview and the distri- bution of food insecurity globally and in Nigeria, respectively. The methodology of this study is discussed in Section 2. Empirical results of the study are presented and discussed in Section 3, and Section 4 provides the summary, conclusion, policy, and recommendations on the research, and References and Appendices.

METHODOLOGY:

The Study Area

Oyo State was created on 3 February 1976 out of the old Western Region by the then regime of General Murtala Mohammed. Located in Southwest Nigeria, Oyo State covers 28,454 square kilometers. The state is homogenous and comprises the Oyos, the Ibadans, and the Ibarapas, all belonging to the Yoruba family and speaking the same Yoruba language. People from within and outside the country trade and settle in the state mostly in the urban areas. The capital, Ibadan, is reputed to be the largest city in Africa, south of the Sahara.



The state economy remains largely agrarian, with the western city of Shaki being described as the state's breadbasket. Cassava, cocoa, and tobacco are among the most important crops to Oyo State's economy. Agriculture is the main occupation of the people of Oyo State. The climate in the state favors thecultivation of crops like maize, yam, cassava, millet, rice, plantains, cocoa, palm-produce cashew, horticultural crops etc. There are a number of government farm settlements in Iseyin/Ipapo, Ilora, Eruwa, Ogbomosho, Iresaadu, Ijaiye, Akufo, and Lalupon. There is an abundance of clay, kaolin, and aquamarine. There are also vast cattle ranches at Saki, Fasola, and Ibadan, a dairy farm at Monatan in the Ibadan. A number of inter- national and federal agricultural establishments are located in the state (https://en.wikipedia.org/wiki /Oyo_State).

Sampling Technique

The 33 local government areas (LGAs) have been divided into seven regions and beneficiaries were selected from three regions known for tomato production namely: Ibarapa, Ogbomoso, and Oyo as shown in **Table 1**. In order to assess the palliative

effect of tomato production on the beneficiaries, a sample of the beneficiaries was selected based on the percentage of the beneficiaries in each region; regions with higher percentages have more beneficiaries in the sample selected, as shown in **Table 1**. A structured electronic questionnaire was used as the research instrument using Kobo toolbox; and the enumerators that were staff from OYSADA were trained on how to use the research instrument for interviewing farmers through phone calls. Information on questions that ranged from socioeconomic data of beneficiary respondents to harvest of their produce was solicited by the use of trained and experienced enumerators. Out of the sample size of 300 farmers, only 197 were successfully reached with data on their tomato production collected for analysis.

Table 1: Distribution of Palliative' Beneficiaries by Regions.

Region	LGA	Sample Size	Farmers' Contacted
IBARAPA	IBARAPA NORTH	140	107
	IBARAPA EAST	76	29
OGBOMOSO	OGO OLUWA	10	10
	SURULERE	25	9
OYO	ATIBA	49	42
Total		300	197

Analytical Technique

Empirical Framework

A preliminary report was done using descriptive statistics to characterize the farmers, their farms, and their socioeconomic profiles where necessary. More information will be generated from the data with the use of relevant econometric models applicable to perceptions of farmers in regard to benefits of palliative intervention of the government in terms of improved yield, farm income, food security, and livelihood of farmers, among others.

Logit model

The Logit Model (LM) is for analyzing relationships whose dependent variables assume a discrete or dichotomous value; qualitative choice models are used. In such relationships, the probability of an event occurring is a function of a set of non-stochastic explanatory variables and a vector of unknown parameters. Following Amemiya (1981), the general form of the univariate dichotomous choice model can be expressed as:

$$Pi = Pi(Y = 1) = G(XiΦ)(i = 1,2 \cdots\cdots n) \ldots\ldots\ldots\ldots\ldots (1)$$

Where,

$P_i = P_i$ (Y_i =1) is the probability of an outcome. It is a function of the vector of explanatory variables X_i and unknown parameter Φ.Xi = Explanatory variables, Φ = Unknown parameters. Because the functional form of G is unknown, practical applications of the model are not feasible (Amemiya, 1981), so an explicit functional specification of G becomes necessary. Three functional relationships often specified are the linear probability, probit, and logit models. The dichotomous dependent variable model that will be used in this study is the logit model (LM) (the standard normal distribution function). A logistic regression model was selected to identify the significant variables that determined whether farmers were perceptive of reduced hunger or not.

LM is given in its estimable form as:

$$LM = Ln\ (P_i /1- P_i) = Z_i = \beta_i + \beta\sum kX_{ik} + \varepsilon \ldots\ldots\ldots\ldots\ldots (2)$$

Where,

Ln (P_i /1- P_i) = log odd ratio, P_i = farmer's perception that his/her household experienced hunger reduction or not; it ranges from 0 to 1, and is non-linearly related to Z_i ;β_i = constant term/intercept; β_k = coefficients of regressors; X_{ik} = K= 1, 2, ……n = independent variables (with ith observation); ε = error term with zero mean' as Z_i ranges from -∞ to ∞, P_i ranges from 0 to 1; thus the dependent variable 'P' is 1 if farmer perceives that he experienced hunger reduction and is '0' if the farmer does not perceive that he experienced hunger reduction, X is given as perception determinants. In binary regression models, the goodness of fit (R^2 values) is not important; the important feature is the expected signs of the regression coefficients and their statistical and/or practical significance. There- fore, the interpretation focuses on statistical signi- ficance, the direction of regression coefficients (either positive or negative), and the odds ratios (if estimated). The perception of farmers' decision to choose 'hunger reduction' or 'not' depends on house-hold demo-

graphic, socioeconomic, and insti- tutional factors assuming that for each household 'i'; each household characteristics are summarized in **Table 2** below. The Logit regression model for econometric analysis was used with the aid of STATA version13 in this paper. To estimate the logistic regression model, the explanatory variables were checked for the existence of multi-collinearity. For this purpose, co-linearity was checked for categorical variables using the contingency coefficient test. The independent variables of the study are those which are expected to have an association with farmers' perception on hunger reduction. More precisely, the findings of past studies on the farmers' perception, the existing theoretical explanations, and the researcher's knowledge of the farming systems of the study area were used to select explanatory variables. The definition and units of measurement of the dependent and explanatory variables used in the logistic regression model are presented in **Table 2**.

$$Hunger\ \mathrm{Re}\ duction = \beta_0 + \beta_1 FamilySize + \beta_2 AssociationMembership + \beta_3 Farmer'sAge + \beta_4 FarmIncome + \beta_5 Gender + \beta_6 LoanAccess + \beta_7 TomatoYield + \beta_8 Education + \beta_9 InformationSources + \mu$$

Table 2: Determinants of farmers' perceptions on hunger reduction due to government palliative project.

Variables	Descriptions	A priori
Dependent variable		
Hunger Reduction	Yes = 1; No = 0	
Explanatory variables		
Family Size	Household size of the farmer	±
Association Membership	Membership of an association (Membership = 1; Otherwise = 0)	+
Farmer's Age	Age of the farmers (Average)	±
Farm Income	Farm income of the farmer (Farm Income increased = 1; Farm Income	+
Gender	Male = 1; Female = 0	±
Loan Access	Access to loan = 1; Non-access to loan = 0 cycle	+
Tomato Yield	Increase yield of tomato = 1; Yield is the same as in the past = 0	+
Education(Years)	Years of education of family head	+
Information Sources	Farmer-to-farmer information flow = 1; Media/Government	±

RESULTS AND DISCUSSION:

Socioeconomic Characterization of Beneficiary Farmers

In 2020, during the COVID-19 pandemic, the Oyo State government registered some o-resource farmers with the aim of providing them with measures to be able to cope with hunger that characterized the period. For tomato, the following were given: 25 grams of improved seed variety of tomato, 200 milliliters of herbicide as a post-emergence herbicide, 250 milliliters of fungicide, and 50 kg of fertilizer. The farmers planted the tomato seed on 0.4 ha of farmland. This paper aims to investigate the effect of these palliatives on farmers' work and livelihoods. **Table 3** is on the demographic features of farmers.

Table 3: Demographic and socioeconomic characteristics of farmers.

Variables	% of Yes (N=197)	Averages
Age		43(11)
Family size		6(4)
Adult (>=18)		4(3)
Education (years)		11(4)
Gender		
Male	66.5	
Female	33.5	
Marital Status		
Married	88.0	
Single/Separated	12.0	

Note: Numbers in the brackets are SDs.

The data collected represented 33.5% of the beneficiaries, while males represented 66.5%. The Table shows that 88% of the sampled farmers were married. The average age of the farmers was 43 years and the Standard deviation (SD) shows that there was no abnormal variability among the farmers as it was smaller than the average year. The average family size was 6, an average of 4 people in the family were adults of 18 years and above.

Table 4: Production Characteristics.

Variables	% of Yes	Averages
Percentages		
Intercropping with other crops %	28	
Use of family labor	52	
Use of hired labor	63	
Association membership	50	
Training from Government	40.0	
Obtained Credit	25.0	
Staking of crop	81.0	
Pest/disease attack	30	
Pest/disease control	91	
Did you give out your seeds?	21	
Weeding frequency		
Zero	0.5	
One	37.6	
Twice	48.2	
Trice	9.6	
Quadrupled	4.1	
Sources of information		
Farmer to farmer	76.6	
Government Extension	19.3	
Media	3.6	
NGOs	0.5	
Number of times the farm was fertilized		
1	3	
2	42	
3	46	
4	10	
Number of times the farm was visited after cultivation		
1	1	
2	11	
3	32	
4	56	
Averages		
Number of farmers assisted with seed		4(3)
Farm size (Ha)		0.4(0.01)
Herbicide (ml)		170.3(47.6)
Insecticide/pesticide (ml)		230.1(171.1)
Fertilizer (Kg)		44(10.4)
Seed (g)		21.9(5.3)
Cost of production (Naira/Ha)		74658.7(52114.8)
Sales from tomato (Naira/Ha)		271016.1(230624.6)
Number of baskets harvested(basket/Ha)		70.2(55.6)

Note: Numbers in the brackets are SDs.

Farm practices by farmers in **Table 4** show that 28% of the farmers intercropped other crops with their tomato, 52% employed family labor, while 63% used hired labor. Fifty percent of the farmers are members of one association or the other, while 40% of them went through government training. Some of the farmers (25%) accessed credit for the tomato enterprises. As part of management for optimum yield, 25% of the farmers used stakes to stake their tomato stems, while 91% of them used pesticide to eliminate and control insect pests. Many farmers weeded their farms more than twice, the highest being four times. Sources of information to farmers on farming activities from the Table were majorly through neighboring farmers (76.6%) and Extension Agents (19.3%), while the media constituted 3.6% among other arenas of getting information. About 21% of tomato farmers gave out part of their tomato seeds freely to farmers for planting. **Table 3** shows that the average farm size was 0.4Ha, the average total tomato harvest was 70.2 baskets/Ha.

Likert Scale Characterization of the Effects of COVID-19 Palliatives on Farmers' Livelihoods

On the effect of the palliative on tomato yield, 74.6% (**Fig. 1**) of the farmers were of the opinion that the palliative increased their yields, while 22.8% believed that it strongly increased their yield; others were either inconclusive or believed that their yield decreased (2.5%).

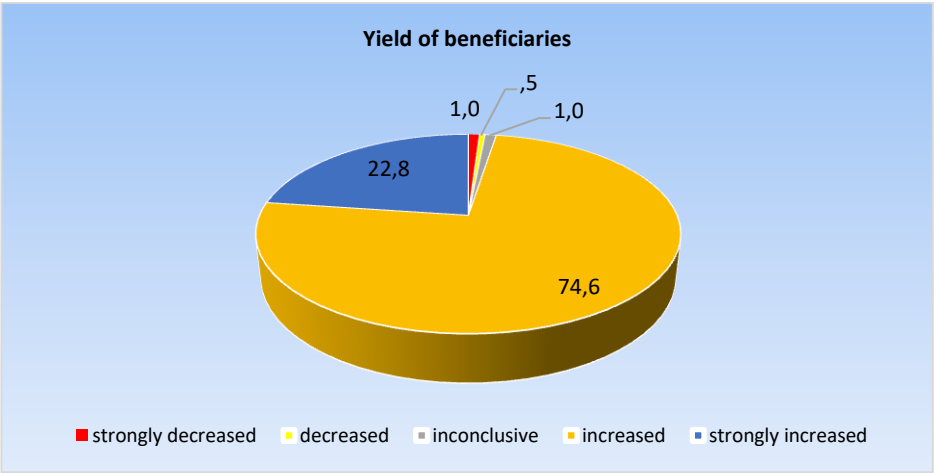


Fig. 1: Perception of farmers on the yield of tomatoes from COVID-19 Palliative (%).

On the effect of the palliative on food security and hunger reduction, 13.2% of the farmer stated that the palliatives reduced hunger dramatically after the harvest, 81.2% agreed that palliatives just reduced hunger, while 3.6% were inconclusive (**Fig. 2**). On farm income, 9.6% are of the opinion that their farm income strongly increased, while 86.3% agreed that there was an increase in their farm income (**Fig. 2**).

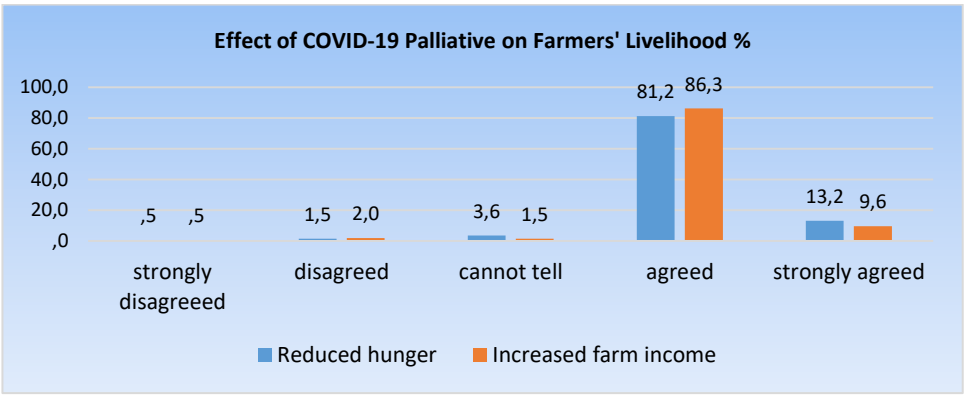


Fig. 2: Effect of COVID-19 Palliative on Farmers' Livelihood.

The farmers were asked to state a major benefit derived from COVID-19 palliative: 36% of them believed that they experienced an increase in farm income; 34% of them were of the opinion that the palliative reduced hunger in their families, while 27.9% had increased harvested tomato through the palliative intervention as seen in **Fig. 3**.

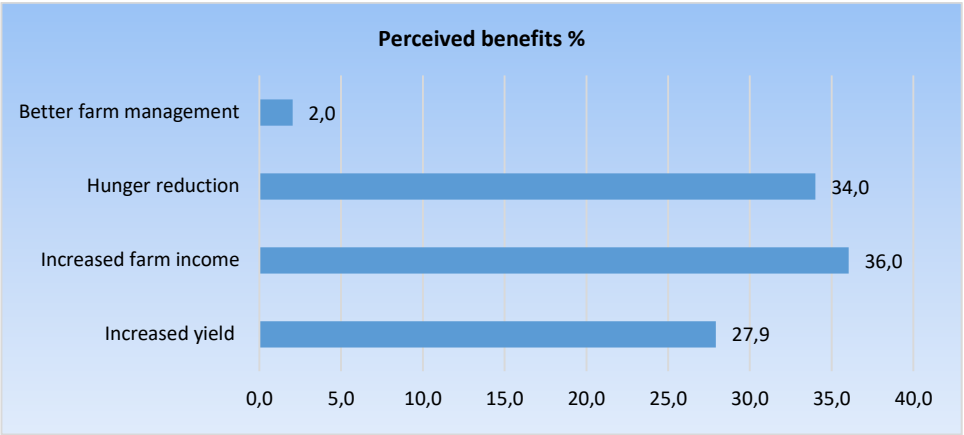


Fig. 3: Major benefits derived by farmers from COVID-19 palliatives.

Challenges to Farming Activities and Advice to Government

The farmers elicited some of the obstacles to their farming activities, as listed in **Table 5**. The major obstacle was inadequate capital (29.4%), followed by road and transportation problems (27.9%). Marketing is another challenge that needs attention as 19.8% of the farmers complained about it. The government may wish to proffer solutions to some of these challenges because that was why some of the farmers talked of a decrease in their yield under the Likert scale scoring. Some complained of their farm being eaten up by cattle and there are others in the table below.

Table 5: Challenges faced by farmers in their COVID-19 farming activities.

Challenges	% of Farmers
Poor marketing	19.8
Inadequate labor	7.1
Road and transportation problem	27.9
Capital challenge	29.4
Pest/cattle problem	13.7
Others	2.0

Table 5 contains some of the assets bought by the beneficiaries from income realized from the sales of tomato. About 30% of the beneficiaries indicated that they were able to acquire some assets from income generated from the sales of their harvested tomato; highest among these assets are knapsack sprayer, hoes, and cutlasses. **Table 6** highlights the mind of the beneficiary farmers in regard to their expectations or needs from the constituted authority of Oyo State government. Most (11.7%) want the palliative program to continue with additional inputs inculcated in the palliative. They also need financial assistance (11.7%) in the form of loans and credit facilities. Some want different improved varieties of tomato to give them better options.

Table 6: Advice from the beneficiary farmers to government on palliative issues.

Advice to Government	Frequency	%
No comment	96	49
Better marketing opportunity	1	0.5
Credit access opportunity	14	7.1
Erosion control	1	0.5
Financial assistance	23	11.7
Government to continue enhanced support	23	11.7
More improved variety	26	13.2
Pest control measures	5	2.5
Road/transportation assistance	8	4.1
Total	197	100

RESULTS:

COVID-19 ushered in death and hunger among the people, thus, to alleviate hunger, Oyo State gave palliative farming inputs to farmers to produce crops expected to contain hunger or reduce it among farm families. Data were collected from the beneficiary tomato farmers to elicit factors influ- encing farmer perception of the reduction in hunger due to use of the government palliative by using Logistic regression model. **Table 7** shows the distribution of the maximum likelihood estimate on perception of hunger reduction as related to their socioeconomic characteristics in Oyo State. The Table shows that Association Membership and Information Sources had negative coefficients that are the significant. Farmer's Age, Farm Income, Loan Access, and Tomato Yield had significant positive coefficients. A positive estimated coefficient in model implies an increase in the farmers' perception of huger reduction with an increase in the value of the explanatory variable. Whereas a negative estimated coefficient in the model implies decre- asing perception with an increase in the value of the explanatory variable. The logistic regression model was used to analyze determinants of farmers' perception of hunger reduction; the Wald test ($\chi 2$ (9) = *41.50*, p = 0.000)) is significant at the 1% level, which indicates that the coefficients of the model are significant and that the explanatory power of the factors included in the model is satisfactory; The *Log pseudolikelihood* (*-21.61*) indicates that there is no close relationship within the variables and the *Hosmer-Lemeshow* test of the model which gives the overall fit test indicates a chi-square value of 2.46 which is not significant (p<0.96) and implies that the model as a whole fits significantly better. The success of the overall prediction by the regr- ession model indicates that the variables sufficiently explained the perception of farmers on hunger reduction, and there is a strong association between the perception and the group of explanatory vari- ables. The result indicates that Farmer's Age, Farm Income, Loan Access, and Tomato Yield are the factors that influenced the perception of tomato farmers on the hunger reduction. Farm Income and Loan Access factors have positive coefficients, which are significant at the 1% level while Farmer's Age and Tomato Yield have positive coefficients but are significant at the 5% level. Association Membership negatively and significantly reduced farmers' perception of hunger reduction at a 5% level of probability, while Information Sources significantly reduced it at a 1% level of probability.

Table 7: Maximum likelihood estimate of tomato farmer's level of perception on hunger reduction as related to their socioeconomic characteristics in Oyo State.

Variables	Coef.	Robust Std. Err.	dy/dx	z	P>z
Family Siz	–	0.1827	–0.0010	–1.28	0.199
Association Membership	–1.8739	0.8870	–0.0091	–2.11	0.035
Farmer's Age	0.0892	0.0425	0.0004	2.10	0.036
Farm Income	3.3861	0.6644	0.0147	5.10	0.000
Gender	0.7127	0.8750	0.0035	0.81	0.415
Loan Access	5.0511	1.1070	0.0161	4.56	0.000
Tomato_Yield	3.0234	1.4504	0.0131	2.08	0.037
Education(Years)	0.0310	0.0923	0.0001	0.34	0.737
Information_Sources(Farmers=1)	–3.1680	1.2466	–0.0085	–2.54	0.011
Constant	–13.9759	4.2216		–3.31	0.001
Number of obs	187				
Wald chi2(9)	41.50				
Prob > chi2	0.00				
Log pseudolikelihood	–21.61				
Pseudo R2	0.48				
Hosmer-Lemeshow chi2(8)	2.46				
Prob > chi2	0.9636				

At the same time, every one unit increase in the Farmer's Age, increases the likelihood of farmer's perception of hunger reduction. The implication of this is that aged farmers have a positive perception of reduced hunger. The Table shows that a unit increase in Farmer's Age will increase the per-

ception of reduced hunger by 0.0004, this is in line with the results of Nnaemeka, (2022); and a unit increase in Tomato Yield will increase perception by 0.0131; this is supported by Apanovich and Mazur, (2018) who find that an increase in banana and bean yields is associated with a greater probability of food security. This agrees with Abafta and Kim (2013). Farm income has a positive effects on perception, an additional farmer who agreed that his Farm Income increased had increased hunger reduction perception by 0.0147, and it is in line with Waggins and Keats, (2009) and Nnaemeka, (2022). Lastly, for variables with a positive relationship, having access to a loan (Loan Access) will increase the perception of hunger reduction by 0.0161, which is the highest influential factor on the farmers' perception of hunger reduction based on government intervention; this is also in line with Jatto *et al.* (2012). Access to credit is key to adopting technologies and practices that require investment (Baffoe *et al.*, 2014) and could affect perception because farmers can use agricultural information. Being a member of an association (Association Membership) will decrease the perception of hunger reduction by 0.009; the implication of this was that the association was not doing anything pro-hunger but might be busy addressing other issues of interest. Finally, receiving information through farmers (Information Sources) will reduce the perception of the hunger reduction by 0.008, meaning that information flow from farmer to farmer was not the driver of hunger reduction, rather it was information through the media and Government institutions that were pro-hunger, spreading news about the government palliatives to beneficiary farmers. Therefore, the study recommends that such government palliatives be made to go round all resource poor farmers since it led to increased tomato yield and that government media institutions and agricultural institutions like OYSADA and the Ministry of Agriculture extension arms should be strengthen since they help in the hunger reduction through needed information and distribution of farm inputs among farmers and helped farmers to have a good perception about it.

CONCLUSION:

In 2020, during the COVID-19 pandemic, Oyo State government registered some resource-poor farmers to provide them with measures to cope with the hunger that characterized the period. This study interviewed 197 farmers that benefitted from the government's tomato farm inputs palliative to help farmers contain the negative effects of COVID-19; hunger and food insecurity and poverty. The tomato palliatives included 25 grams of improved seed of tomato, 200 milliliters of herbicide as a post-emergence herbicide, 250 milliliters of fungicide, and 50 kg of fertilizer. This paper investigated the effect of these palliatives on farmers' work and livelihoods. Demographic features show that the average family size was 6, average age of the beneficiaries was 43, and gender of the households' heads shows that the beneficiaries have 67% males and 33% females; 88% of them were married. Production features show that 28% of the tomato farmers intercropped their tomato with other crops, 52% utilized family labor, and 63% used hired labor, 50% of the farmers were members of associations, 40% of them went through government training, and 25% of them accessed credit to start their farms. Sources of information were mainly farmer to farmer (77%). Using the Likert Scale characterization shows that 74.6% of the farmers were of the opinion that the palliative increased their yield, 81.2% agreed that the palliatives just reduced hunger in their household, while 86.3% agreed that there was an increase in their farm income as a result of the intervention The farmers were asked to state a major benefit derived from the COVID-19 palliative: 36% of them believed that they experienced increased in farm income; 34% of them were of the opinion that the palliative reduced hunger in their families, while 27.9% had increased harvested tomatoes through the palliative intervention. Inadequate capital was the highest challenge facing the farmers (29%). Regression results reveal that the Farmer's Age, Farm Income, Loan Access, and Tomato Yield are the factors that increased significantly perception of tomato farmers on hunger reduction. Farm Income and Loan Access factors have a positive coefficient, which are significant at the 1% level while Farmer's Age and Tomato Yield have positive coefficients, but are significant at the 5 % level. Association Membership negatively and signi- ficantly reduced farmers' perception of hunger reduction at a 5% level of probability. In contrast, farmer-to farmer Information Sources significantly reduced it at a 1% level of probability; meaning that only government extension agents and the media positively influenced information transfer on the government palliative efforts. Farmers solicited government assistance in tackling their challenges.

Finally, farmers appreciated government's effort and asked for continued and improved farm-palliative packages.

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CONFLICTS OF INTEREST:

There are no potential conflicts of interest to publish the present research work

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