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Deradicalisation of Agriculture and Stifling of Hunger in Nigeria: A Sustainable Economic Development and Agricultural Marketing Approach

Iyaji Eleojo Inekwe, PhD

Department of Marketing, The Federal Polytechnic Idah, Kogi State, Nigeria

Peter Umar Danjuma, PhD

Department of Marketing, School of Business Studies, Federal Polytechnic Orogun, Delta State, Nigeria

Abstract

The agricultural sector played a role towards the nation's economic and social development globally considering the fact that the sector serves as the reliable avenue through which food security is attained. This research examines the deradicalization of agriculture towards shifting hunger in Nigeria. The study adopts a descriptive research survey design with an infinite population who are those directly or indirectly involved in agricultural practices in Kogi State but a out of a sample of 384 determined using the Godden sample size statistical formular only 298 completed and returned the questionnaire giving a retrieval rate of 78%. The study elicited data using a twenty-four (24) items structured questionnaire designed in a five points Likert scale. The two (2) formulated hypotheses were tested using simple linear regression. The findings revealed that there is significant positive relationship between food supply and agricultural productivity (r =.769, p-value <0.05) and that there is a significant positive relationship between cost of food and economic factors (r =.866, p-value <0.05. Premised on the findings, this research therefore concluded that there is a significant positive relationship between food supply and agricultural productivity and there is a significant positive relationship between cost of food and economic factors. Finally, the study recommends that there should be development of climate resilient farming practices through the drought tolerant crops as well as the integration of a sustainable irrigation practice. There should also be an improvement in provision of basic infrastructure so that such could facilitate agricultural activities in the area.

Keywords: *Agriculture, agricultural marketing, economy, sustainable development.*

Introduction

Food insecurity is a pressing issue in Nigeria, affecting millions of households due to a combination of economic, environmental, and security challenges. The severity of the crisis is underscored by the 2024 Cadre Harmonise report, which indicates that 31.8 million Nigerians are currently facing acute food insecurity, with projections of an increase to 33.1 million during the June–August lean season (Akinola et al, 2021). The situation is particularly dire in the Northeast, where conflict and displacement have exacerbated hunger, with 4.8 million people in Borno, Adamawa, and Yobe states experiencing acute hunger (Akinola et al, 2021). Beyond mere shortages, a significant number of children and pregnant women are at risk of acute malnutrition, underscoring the long-term human capital costs of this crisis.

The drivers of this crisis are multi-faceted. The removal of fuel subsidies has led to a sharp increase in food inflation, reaching 40.7% in 2024, the highest in 25 years (National Bureau of Statistics, 2024). This economic hardship, coupled with an overall inflation rate of 34.2%, has significantly eroded household purchasing power. In addition to economic factors, insecurity in the Northeast and climate change induced events like droughts and floods have severely disrupted farming and livestock production. Structural weaknesses in the food system, including poor supply chains, limited storage facilities, and inadequate access to quality agricultural inputs, further compound the problem (World Food Programme, 2023).

Addressing this issue is crucial for Nigeria's development as persistent hunger and malnutrition undermine public health, reduce workforce productivity, and fuel social instability. This research aims to provide a multi-sectoral, evidence-based framework to address these challenges. It proposes interventions in agriculture, infrastructure, and peace-building, aligning with Nigeria's national development priorities, such as the National Policy on Food and Nutrition and the Agricultural Promotion Policy (Federal Republic of Nigeria, 2016; Federal Ministry of Agriculture and Rural Development, 2021). By focusing on improving agricultural inputs, strengthening food value chains, and generating policy recommendations, the research contributes to achieving Sustainable Development Goals (SDGs) 1 (No Poverty), 2 (Zero Hunger), and 13 (Climate Action) (United Nations, 2015). The ultimate goal is to provide decision-makers with practical strategies to secure livelihoods and ensure stable food systems for Nigeria’s long-term economic resilience.

Statement of the Problem

The statement of the problem is: Ineffective agricultural infrastructure and technology are hindering food production. Despite a growing population, there is a lack of enhanced international cooperation in developing rural infrastructure, agricultural research, and technology, which limits Nigeria's ability to boost its productive capacity (United Nations, 2015; Ogunleye, 2012).

Trade restrictions and market distortions in global agricultural markets are contributing to food price instability and making food less accessible. These issues, including export subsidies and other trade-distorting measures, negatively impact the domestic market and prevent it from functioning efficiently (World Food Programme, 2023).

Lack of access to timely market information prevents the proper functioning of food commodity markets. This information gap contributes to extreme food price volatility, making it difficult for consumers and producers to plan and leading to food crises (FAO, 2023). Ultimately, these systemic failures make it impossible for Nigeria to meet its goal of ending hunger and ensuring that all people, especially e poor and vulnerable, have access to safe, nutritious, and sufficient food by 2030 (United Nations, 2015).

Objectives of the Research

The main objective of this study is to contribute to achieving food security in Nigeria. This is defined as ensuring that all people have consistent access to food that is nutritionally adequate in terms of quantity, quality, and variety, and is culturally acceptable (Clover, 2003) with the following specific objectives:

1. Analyze the availability of food, focusing on factors such as agricultural productivity and the impact of frequent extreme weather events and agricultural product diseases.
2. Examine the challenges to food access by assessing the influence of internal and external challenges on food supply chains.
3. Investigate the affordability of food by evaluating the impact of economic factors like transportation costs and marketing strategies.
4. Explore the inter-related nature of food security challenges, including the connections between agricultural productivity, economic viability, and market dynamics.
5. Propose solutions for enhancing agricultural productivity and strengthening agricultural policy.
6. Assess the role of infrastructure, particularly storage facilities, in reducing post-harvest losses and ensuring a stable food supply.
7. Recommend sustainable solutions to mitigate challenges like high transportation costs and improve the overall efficiency of the food marketing system.

Research Questions

The research questions for this project are:

1. To what extent do existing agricultural policies and technologies address the challenges of food availability and productivity in Nigeria?
2. How do transportation costs, market distortions, and storage facilities impact the accessibility and affordability of food for different socio-economic groups?
3. What are the inter-related effects of climate change, agricultural product diseases, and internal conflicts on food security and supply chain stability in Nigeria?
4. How can the adoption of innovative, technology-driven agricultural practices and improved infrastructure enhance the economic viability of farming for youth and small-scale farmers?
5. What are the key recommendations for developing a comprehensive and sustainable food security framework that integrates agricultural policy, market regulation, and climate-resilient farming practices ?

Statement of Hypotheses

H_1**:** There is no significant relationship between food supply and agricultural productivity.

H_2**:** There is no significant relationship between cost of food and economic factors.

Study Significance

The innovation of this study is its holistic approach, which uses agriculture as a tool to solve multiple problems at once. The core concept is "Deradicalisation of Agriculture," which involves providing sustainable livelihoods to at-risk youth and former combatants. This project's key innovation is its focus on creating a complete agribusiness ecosystem that

includes both farming and efficient marketing, thereby benefiting everyone from producers to consumers.

Literature Review

Recent research highlights a strong link between security, agriculture, and economic resilience in Nigeria. Studies by Akinola et al. (2021) and Adeoti, et al (2012) submitted that persistent insecurity in the Northeast has cut farming activities by over 30%, worsening food insecurity. Olayemi and Ojo (2020) found that improving rural marketing systems through cooperatives and digital platforms can significantly boost farmer incomes and reduce post-harvest losses by up to 20%. Similarly, the FAO (2019) stresses the importance of integrating climatesmart agriculture with functional markets to build household resilience.

Furthermore, Akintola et al (2021) and Akinwumi and Adeoti (2018 demonstrated that linking ex-combatants to agricultural livelihoods through reintegration programs can reduce unemployment and foster community stability. However, these programs often lack strong market integration, which limits their long-term effectiveness. While existing literature addresses these issues separately, there is a clear gap. Few studies holistically combine deradicalization strategies with sustainable agricultural development and structured marketing systems. This research aims to fill this void by proposing a Sustainable Economic Development and Agricultural Marketing Approach to use agriculture not just as a sector for food production but as a strategic tool for hunger eradication and national stability.

Theoretical Framework

This study is grounded in the Resource-Based View (RBV), a prominent strategic management theory. The RBV posits that an organization's sustained competitive advantage is derived from its unique, valuable, rare, inimitable, and non-substitutable (VRIN) resources (Barney, 1991). In the context of Nigerian agriculture, these resources are not just physical assets but also include intangible elements.

This framework provides a lens through which to understand how the strategic management of these resources can be a powerful tool for achieving food security and economic stability. By effectively mobilizing these resources through deradicalization of agricultural practices, the adoption of climate resilient cultivation methods, and the establishment of structured marketing systems, this project argues that Nigeria can transform its agricultural sector from a source of vulnerability into a sustainable driver of growth. The RBV helps to conceptualize how the integration of human capacity, institutional support, and efficient market systems can lead to a long-term, inimitable advantage in agricultural productivity and national development (Ojo & Ojo, 2014).

Research Methodology

Research Design

The research adopted a descriptive research survey design. This technique is a research survey which involves surveying carefully selected respondents with the view to collecting empirical data for data analysis. Again, this study involved collecting data through primary sources. The primary

data obtained was through a twenty-four (24) items structured questionnaire and the data were subjected to descriptive and inferential statistical analysis.

The population of this study comprised the entire persons who are either involve in farming or agro-allied business in Kogi state North-Central, Nigeria. The population is considered an infinite population considering the fact that most of the respondents fall within the informal section without a reliable data bank while in some instances some respondents are immobile thereby justifying the criteria to categorized such a population as an infinite population. The questionnaire contained research questions bordering on both independent variable and dependent variable. The questionnaire was designed in a five- point Likert-scale of strongly agree (5), Agree (4), Undecided (3), Disagree (2) and strongly disagree (1). The Researchers utilizes the services of twelve (12) trained Research Assistants who assisted in the distribution and retrieval of the research questionnaire. Again, the research questions were analyzed using a five - point's Likert-scale with the decision rule of accepting any mean value with 3.00 or above. In addition, the inferential statistics adopted in testing the formulated hypotheses is the simple linear regression analysis which is an inferential technique of examining the extent of relationship between the independent variable and dependent variable. This process was aided with the statistical package for social sciences (SPSS).

The Godden (2004) formula denoted as.:

$$SS = \frac{Z^2 (P)(1-P)}{C^2} \quad \text{-- equ (1)}$$

$$\text{New SS} = \frac{SS}{1 + (SS - 1)/\text{Population}} \quad \text{equ (2)}$$

Where SS = Sample size

Z = Confidence level 95 %

P = Percentage of population (50%)

C= Confidence interval = 5 % (0.05)

$$SS = \frac{1.96^2 (0.5)(1-0.5)}{0.05^2}$$

$$SS = \frac{3.8416 (0.5)(1-0.5)}{0.0025}$$

$$SS = \frac{0.9604}{0.0025}$$

$$SS = 384$$

However, out of the total three hundred and eighty-four (384 distributed) questionnaires only two hundred and ninety-eight (298) were duly completed and returned giving a retrieval rate of 78%.

Reliability of the Instrument

Reliability of the research instrument adopted for this research was carried out to determine the internal consistency of the research items. The submission of Uchenna et al (2022) and Edna et al (2021) that coefficient of reliability that is up to 0.70 and above is considered reliable. Therefore, in testing the reliability of the research instrument, the Researchers conducted a pilot study by distributing questionnaires numbering thirty (30) to the target respondents through the help of the trained Research Assistants; the Cronbach Alpha coefficient measure of internal consistency was adopted. The reliability of the research instrument using Cronbach alpha reliability test with the Statistical Package for Social Sciences (SPSS) yielded the result of 0.77 for items on independent variable, 0.84 for items on dependent variable thus giving the average reliability result of 0.81. The reliability result is showed in table 1.

Table 1. Reliability Statistics

Proxies/ Variables	Number of items	Cronbach Alpha
Independent variable	12	0.77
Dependent Variable	12	0.84

Source: SPSS statistical analysis

The table 1 showed that all the variables have Alpha Values above 0.70. Therefore, in line with the submission of Acho et al (2021) and Uchenna et al (2021), the instrument is deemed reliable.

Technique for Data Analysis

This study adopted both descriptive and parametric statistics in analyzing the data. The inferential statistics was utilized in testing the formulated hypotheses while the simple linear regression analysis which according to Audu (2015) is an inferential technique of examining the strength of relationship between the independent and dependent variables was used.

Data Analysis and Results

The research tests hypotheses using the linear regression statistical analysis with the aid of Statistical Packages for Social Sciences (SPSS). The specific analytical techniques adopted were model summary, analysis of variance (ANOVA) and coefficients. The decision rule is to accept P. value if the alpha value is ≥ 0.05 otherwise the null hypotheses be rejected.

Table 2. Descriptive Statistics

Indices	Mean	Std. D.	N
FS	3.36	1.15	298
CF	3.27	1.19	298
AP	3.13	0.18	298
EF	3.43	1.11	298

The table shows the selected scale mean lies within the accepted range, therefore they are of and reliable. Again, in order to ascertain the variability of the data the mean and standard deviations of both variables were examined. The mean for food security (FS) is 3.36 and the standard deviation is 1.15, the mean for cost of food (CF) is 3.27 and the standard deviation is 1.19, the mean for agricultural productivity (AP) is 3.13 and the standard deviation is 0.18 and the mean for economic factor (EF) is 3.43 and the standard deviation is 1.11, to this end, all variables lies within the value of high extent as indicated by their corresponding means and standard deviations which are closely related.

Test of Hypotheses

Hypothesis 1

H_1: There is no significant relationship between food supply and agricultural productivity.

Table 3

Model Summary[b]

model	R	R Square	djusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.769[a]	.591	.590	.314521	2.4121

a. Predictors: (Constant), food supply

b. Dependent Variable: agricultural productivity

The model summary table reports the strength of relationship between the independent and dependent variables. The result of R stood at 0.769 indicating a strong relationship between the dependent variable agricultural productivity and the explanatory variable food supply. The coefficient of multiple determinations R^2 measures the percentage of the total change in the dependent variable that can be explained by the independent or explanatory variable. The result indicates a R^2 of .591 showing that 59% of the variances in agricultural productivity is explained by food supply while the remaining 41% (i.e. 100 – 59) of the variations could be explained by other variables not considered in this model.

The adjusted R-square compensates for the model complexity to provide a fairer comparison of model performance. The result is supported by the value of the adjusted R which is to the tune of 59% showing that if the entire population is used, the result will deviate by 17.8% (i.e. 76.9 – 59.1), with the linear regression model, the error of the estimate is considerably low at 0.314521. The result of Durbin Watson test shows 2.2141 therefore it shows that there is no auto correlation.

Table 4 ANOVA[a]

model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	281.211	1	281.211	2387.214	.000[b]
Residual	22.314	297	.118		
Total	303.525	298			

a. Dependent Variable: agricultural productivity
b. predictors: (constant), food supply

The ANOVA table confirms the results of model summary, analysis of the result revealed that F = 2387.214 which is significant at (0.000) < 0.05. Hence, since the P-value < 0.05 (critical value), the null hypothesis that there is no relationship between food supply and agricultural productivity is rejected.

Table 5 Coefficients[a]

model		nstandardized Coefficients		tandardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(constant)	.343	.034		13.132	.000
	Food supply	.232	.016	.522	22.241	.000

a. Dependent Variable: agricultural productivity

The coefficient provides information on how the explanatory variable (the estimated coefficient or beta) influences the dependent variable. The result shows that the regression constant is 0.343 giving a predictive value of the dependent variable when all other variables are zero. The coefficient for food security is 0.232 with p-value of 0.000 less than (0.05%) critical value. Therefore, it can be concluded that the null hypothesis that there is no relationship between food supply and agricultural productivity is rejected.

Hypothesis 2

H_2**:** There is no significant relationship between cost of food and economic factors.

Table 6 Model Summary[b]

model	R	R Square	justed R Square	td. Error of the Estimate	Durbin-Watson
1	.866[a]	.749	.748	.252821	2.6424

a. predictors: (constant), cost of food
b. Dependent variable: economic factors

The model summary table reports the strength of relationship between the independent and dependent variable. The result of R stood at 0.866 indicating a strong relationship between the dependent variable economic factors and the explanatory variable cost of food. The coefficient of multiple determinations R^2 measures the percentage of the total change in the dependent variable that can be explained by the independent or explanatory variable. The result indicates a R^2 of .749 showing that 75% of the variances in economic factors is explained by cost of food while the remaining 25% (i.e. 100 – 75) of the variations could be explained by other variables not considered in this model. The adjusted R-square compensates for the model complexity to provide a fairer comparison of model performance. The result is supported by the value of the adjusted R which is to the tune of 75% showing that if the entire population is used, the result will deviate by 11.7% (i.e. 86.6 – 74.9). With the linear regression model, the error of the estimate is considerably low at .252821. The result of Durbin Watson test shows 2.6424 therefore it shows that there is no auto correlation.

Table7 ANOVA[a]

model	Sum of Squares	Df	Mean Square	F	Sig.
regression	363.422	1	342.443	2318.231	.000[b]
residual	61.518	297	.617		
total	424.94	298			

a. dependent variable: economic factors

b. predictors: (constant), cost of food

The ANOVA table confirms the results of model summary, analysis of the result revealed that F = 231821.231 which is significant at (0.000) < 0.05. Hence, since the P-value < 0.05 (critical value), the null hypothesis that there is no relationship between cost of food and economic factors is rejected.

Table 8 Coefficients[a]

model	nstandardized Coefficients		andardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(constant)	.239	.034		2.316	.000
Cost of food	1.243	.028	.283	22.256	.000

a. Dependent Variable: economic factor

The coefficient provides information on how the explanatory variable (the estimated coefficient or beta) influences the dependent variable. The result shows that the regression constant is 0.239 giving a predictive value of the dependent variable when all other variables are zero. The coefficient for cost of food is 1.234 with p-value of 0.000 less than (0.05%) critical value. Therefore, it can be concluded that the null hypothesis that there is no relationship between cost of food and economic factor is rejected.

Conclusions

Premised on the data and analysis and findings from this research, it can be concluded that there is a significant positive relationship between food supply and agricultural productivity

and there is a significant positive relationship between cost of food and economic factors. The study also concluded that deradicalizing agriculture and shifting hunger requires a multifaceted technique that would priotize economic and social development. This approach would be able to enhance a climate resilient farming practices as well as enhancement of market linkages and value chain.

Recommendations

Based on the findings and conclusion of the study recommends that there should be development of climate resilient farming practices through the drought tolerant crops as well as the integration of a sustainable irrigation practice. There should also be an improvement in provision of basic infrastructure so that such could facilitate agricultural activities in the area. More so, there should be a consistent advocacy for a private sector partnership as this measure would enhance agricultural activities significantly. Finally, there should be improvement in the support towards a value chain development as this measure would not only encourage existing farmers but it would also attract would-be agricultural practitioners.

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