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# THE IMPACT OF RICE FARMING ON EMPLOYMENT GENERATION AND POVERTY REDUCTION IN LAFIA LOCAL GOVERNMENT AREA OF NASARAWA STATE, NIGERIA

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## Abstract

This study was carried out to examine the impact of rice farming on poverty reduction and employment generation in Lafia Local Government, Nasarawa State, Nigeria. The primary source of data (questionnaire) was used to collect information from rice farmers, rice milling machine owners, rice milling machine operators and agro-chemical dealers. A sample size of 385 was drawn using Cochran W.G. (1977) because the population of the people involved in the Rice farming business in Lafia local government is not known or infinite. All the data collected was organised, presented and analyzed using both descriptive and inferential statistical tools. The study employed the Chi-square ( $X^2$ ) distribution as an analytical statistical method to assess the hypotheses' validity with a 95% confidence level. The aim was to establish the impact of rice farming on poverty reduction and employment generation within the local government area. The study found that, rice farming has a positive correlation with employment generation in the Lafia Local Government area of Nasarawa State. Other findings include; seasonal unemployment due to a lack of constant water supply for farming, lack of finance, and high cost of farm inputs followed by climate change price fluctuation. The researcher therefore recommended that to reduce the poverty level of respondents to a minimum level, the government should provide irrigation facilities, ensure all-year-round rice farming, provide agricultural loans, and subsidy for inputs, improve farm mechanization, and improve technology. Additionally, the land tenure system should be reviewed to make land available for increased rice farming participation.

**Key Words:** Poverty, Poverty Reduction, Rice Farming, Employment Generation, Human Safety

## 1. Introduction

Poverty is a global prodigy; no nation in the world is free from poverty. However, poverty is more severe in the developing nations like Nigeria (UNDP, 2018).

Poverty has over the years been a major concern to the government of Nigeria because poverty makes it difficult for individuals to meet their basic needs. A high rate of poverty grossly affects the individual productive capabilities. This in turn leads to low investment which affects the

nation's economic growth negatively.

Poverty in Nigeria is paradoxical; it is poverty amid abundance. In Nasarawa state in general and Lafia local government area in particular, poverty has been a major feature of the lives of the majority of the people approximately, 50.6 percent of the people live below the poverty line of \$1.9 per day (National Human Development Report [NHD], 2018). According to National Human Development (NHD), (2018), approximately, 50.6 percent of the people of Nasarawa state live below the poverty line of \$1.9 per day. This situation has led to many social challenges like high levels of illiteracy, hunger, homelessness, high levels of ill-health, untimely death, and deprivation. As a result, many youths have resorted to criminal activities to obtain their basic needs and achieve self-actualization. Abraham Maslow in 1940 proposed that motivation is the result of a person's attempt at fulfilling five basic needs: physiological, safety, social, esteem, and self-actualization. However, due to the high rate of poverty in Lafia Local Government area, self-actualization remains a mirage or invisible. The quest for self-actualization now compels the people of Nasarawa State and Lafia local government area to resort to all forms of social vices to obtain self-actualization.

Again, Lafia local government and Nasarawa state at large are engulfed with adverse poverty and backwardness in terms of human capital development. This could be because of inappropriate investment decisions or policies, or lack of access to agro-credit (loans) and land.

Rice farming is a chain of production that can create more employment, improve the living standard of Nasarawa people, and generate more revenue for the economy of Lafia local government, Nasarawa state, and Nigeria as a nation. Through rice farming Nigeria can achieve full employment, favourable balance of trade, price stability, economic growth, and sustainable development. Nasarawa state and Lafia local government have high prospects for growth and development considering its strategic location and proximity to Abuja, the Federal Capital Territory of Nigeria.

Lastly, not much research exists on the impact of rice farming on poverty reduction among rice farmers in Lafia local government area of Nasarawa State. As a result, rice farmers in Lafia local government lack the requisite information about rice farming and its effects on poverty reduction and employment generation.

It is because of the above that the researcher validates the relationship that exists between rice farming and employment generation in Lafia local government area, assesses the impact of rice farming on poverty reduction among rice farmers in Lafia local government area of Nasarawa State, and assesses the basic problems militating against rice farming in Lafia local government area of Nasarawa State.

## **2.0 Statement of the Problem**

The failure of government programs aimed at poverty reduction has left Nigerians with a huge poverty deficit. In Nasarawa state in general and Lafia local government area in particular, poverty has been a major feature of the lives of the majority of the people as it is reflected in the nature of water, accommodation, feeding, number of out-of-school children, criminality in the area among other social vices.

Rice farming has a whole lot of significance to the economy of Lafia local government area, Nasarawa state and Nigeria as a nation looking at its proximity to Abuja, the Federal Capital Territory, diverse human resources, rich agricultural potentials, vast land resources and large

water bodies suitable for rice farming. Rice farming is a supply chain of production which has the potential to create more employment, improve the living standard of the people of Lafia local government area of Nasarawa state and generate more revenue for the economy of the state.

This chain needs effective and efficient allocation and distribution of resources to its various sections for optimal production. Yet most studies have not attempted to identify individual rice farmer's capacity for the effective allocation of manpower to the supply chain for effective and efficient utilization of labour to achieve optimal labour output.

In view of the above, the researcher seeks to: examine the impact of rice farming on poverty reduction, and examine the impact of rice farming on employment generation among rice farmers. determine the relationship between rice farming and employment generation, investigate the basic problems militating against rice farming, and investigate measures through which rice farming could be made attractive in the local government area.

### **3.0 Conceptual Review**

#### **3.1 Poverty**

Although poverty is a phenomenon as old as human history, its significance has changed over time. Under traditional (i.e., non-industrialized) modes of economic production, widespread poverty had been accepted as inevitable. The total output of goods and services, even if equally distributed, would still have been insufficient to give the entire population a comfortable standard of living by prevailing standards.

According to The Central Bank of Nigeria [CBN], (1999) poverty is a state where an individual is not able to cater adequately for his or her basic needs, is unable to meet social and economic obligations, and lacks gainful employment, skills, assets, and self-esteem. Also, he or she has limited access to social and economic infrastructure. The individual, consequently, has a limited chance of advancing his or her welfare to the limit of his or her capabilities thereby making him or her backwards.

Further, Sen (1983), relates poverty to entitlements which are taken to be the various bundles of goods and services over which one has command, taking into cognizance the means by which such goods are acquired (for example, Money and Coupons etc) and the availability of the needed goods. Yet, other experts see poverty in very broad terms, such as being unable to meet “basic needs” – (physical; (food, health care, education, shelter etc. and non – physical; participation, identity, etc) requirements for a meaningful life (World Bank, 1996).

#### **3.2 Poverty Reduction**

Poverty reduction is a set of measures both and humanitarian that are intended to permanently lift people out of poverty without jeopardizing the welfare of the future generation. Thus, poverty reduction can be considered as the improvement of an individual's or group's monetary expenditure to an amount above the poverty line while improving access to education, healthcare, information, economic opportunities security of land tenure, and all the other deprivations associated with it.

Poverty alleviation is intended to permanently lift the poor out of poverty by enhancing their economic and humanitarian capacity. Poverty alleviation also helps to raise the standard of living of people who are already poor. It has been identified as a key mechanism to reduce world poverty in the recent past while in the 20th century indicated successful progress in attacking poverty and improving well-being. Providing access to credit for the poor is a major strategy that is employed

to uplift the living standard of the poor. (Barder (2009).

"Poverty reduction" is often used as a short-hand for promoting economic growth that will permanently lift as many people as possible over the poverty line (Owen 2009). As a poverty reduction measure, there is a need to create a working environment that encourages skilled personnel in engineering and technology to stay with their respective organizations.

The challenge of poverty and the process to decrease it remains critical in global development deliberations. Poverty reduction worldwide comes in diverse shapes such as state-driven development strategies of industrialisation, neoliberal, market-driven strategy, Structural Adjustment Programmes [SAPs], Poverty Reduction Strategies, conditional or unconditional cash transfers, MDGs and currently via the Sustainable Development Goals (SDGs). These previous strategies excluding the latter (SDGs) albeit made moderate gains in poverty reduction, yet there are still patches of poverty that require mitigation. This calls for alteration in existing approaches to arresting poverty. No wonder, Sowa raises questions about whether the strategies for poverty reduction have had the desired bearing. The implication is that the poor possibly do not engage in the appropriate livelihood ventures that can aid their leapfrog out of poverty.

However, the incidence of poverty remains very high, and the existence of the various poverty alleviation programmes notwithstanding requires examination because to ensure growth that takes care of poverty, the share of human capital as a source of output growth has to be accorded the rightful place. (Roseline, 2022).

### 3.3 Rice Farming

Rice is the seed of the grass species *Oryza sativa* or *Oryza Glaberrima*. The unprocessed seeds are called paddy rice. Rice farming therefore is the process of making the paddy rice available for processing into white consumable rice. The paddy rice is then processed into white consumable rice which serves as a staple food to the human race across Nasarawa state and Lafia local government area in particular. Rice is grown in all the lowland water areas of Lafia local government area.

### 4.0 Literature Review

Abebaw, Endeshaw, Seichi and Dawit. (2022). studies the **Impact assessment of adopting improved rice varieties on farm household welfare in Ethiopia and found out that the** adoption of improved rice varieties has a robust and positive impact on rice yield and commercialization. The study recommended that the government should work with development partners and NGOs to ease the accessibility and expansion of improved rice varieties in rice-producing areas of the country.

Monica, Kwasi, Patricia & Camillus. (2022) examined the impact of agricultural technologies on rural income inequality in Ghana and discovered that the uptake of improved rice seed and fertilizer increases rice farmers' net revenue significantly. The study recommended that the findings of the research have implications for the National Development Planning Commission's (NDPC) agenda of redistribution of wealth in Ghana.

Aida, Mdoe, Boniface and Saha. (2022) studied agricultural commercialisation sufficient for poverty reduction. Lessons from rice commercialisation in Kilombero, Tanzania Isinika. The findings show that rice commercialisation was driven by intensification and extensification through sustainable rice intensification technologies and animal-drawn technologies, respectively and concluded that commercialisation increased cash income but was not sufficient to ensure poverty reduction. The study recommended that the government needs to do more to improve livelihood and poverty reduction.

Ogah, Eyah, and Iorlamen, (2019), researched Rice Production and Poverty Reduction in the Agatu Local Government Area of Benue State, Nigeria. They found out that Annual income from rice production was significant in reducing poverty. They recommended the need for credit to be extended to poor farmers to help stimulate their investment to increase their income. And that, government should also encourage farmers to engage in non-farm activities to raise their level of income.

Ajewole, Ojehomon, Ayinde, Agboh-Noameshie, and Diagne, (2019) studied gender analysis of poverty among rice farming households in Nigeria's rice hub. They found out that the size of the rice farm, age, household size, availability and access to credit and education level are the determining factors of the poverty level.

They recommended that gender consideration should be made a priority in poverty reduction strategies among rice farming households, innovation should be encouraged, and education should be prioritized.

Mamman and Musa, (2019) studied Poverty and The Millennium Development Goals (MDGs): The Experience of Selected Crop Farmers in Lafia Local Government, Nasarawa State, Nigeria. Their findings were that there was higher poverty incidence before the MDGs intervention than after the intervention and concluded that MDGs intervention projects have improved the poverty status of the beneficiaries. They recommended that the farmers should be encouraged to engage in value chain activities through the establishment of agricultural processing industries such as Rice Mills, maize processing factories, and the like.

Babatunde, Opeyemi and Zubair (2019), researched Determinants of Vulnerability to Poverty among Rice Farmers: A Case Study of Nasarawa Rice Hub, Nigeria. The study found that access to information, the number of shocks exposed to by households, and years of farming significantly affect household vulnerability to poverty and therefore, concluded that the majority of the households are moderately vulnerable to poverty. They recommended that the government and NGOs should initiate intervention programmes to help liberate the people from poverty conditions.

## **4.1 Theoretical Framework**

### **4.1.1 The Basic Needs Theory by Maslow:**

According to Maslow (1943, 1954), human needs were arranged in a hierarchy, with physiological (survival) needs at the top, and the more creative and intellectually oriented 'self-actualization' needs at the bottom.

Physiological needs are biological requirements for human survival, e.g., air, food, drink, shelter, clothing, warmth, sex, and sleep. Our most basic need is for physical survival, and this will be the first thing that motivates our behavior. Once that level is fulfilled, the next level up is what motivates us, and so on. The human body cannot function optimally if physiological needs are not satisfied. Maslow considered physiological needs the most important as all the other needs become secondary until these needs are met.

**Safety needs** – people want to experience order, predictability, and control in their lives. Safety needs can be fulfilled by the family and society (e.g., police, schools, business, and medical care). For example, emotional security, financial security (e.g., employment, social welfare), law and order, freedom from fear, social stability, property, health, and well-being (e.g., safety against accidents and injury).



After physiological and safety needs have been fulfilled, the third level of human needs is social and involves feelings of belongingness. Love and belongingness needs refer to a human emotional need for interpersonal relationships, affiliating, connectedness, and being part of a group. Examples of belongingness needs include friendship, intimacy, trust, acceptance, receiving and giving affection, and love. This need is especially strong in childhood and can override the need for safety, as witnessed in children who cling to abusive parents.

Self-Esteem needs are the fourth level in Maslow's hierarchy and include self-worth, accomplishment, and respect. Maslow classified self-esteem needs into two categories: (i) esteem for oneself (dignity, achievement, mastery, independence) and (ii) the desire for reputation or respect from others (e.g., status, prestige). Esteem presents the typical human desire to be accepted and valued by others. People often engage in a profession or hobby to gain recognition. These activities give the person a sense of contribution or value.

Low self-esteem or an inferiority complex may result from imbalances during this level in the hierarchy. Maslow indicated that the need for respect or reputation is most important for children and adolescents and precedes real self-esteem or dignity.

Self-actualization needs are the highest level in Maslow's hierarchy and refer to the realization of a person's potential, self-fulfillment, seeking personal growth, and peak experiences. This level of need refers to what a person's full potential is and the realization of that potential. Maslow describes this level as the desire to accomplish everything that one can, and "to become everything one is capable of becoming".

Although Maslow did not believe that many of us could achieve true self-actualization, he did believe that all of us experience transitory moments (known as 'peak experiences') of self-actualization. Such moments, associated with personally significant events such as childbirth, sporting achievement and examination success), are difficult to achieve and maintain consistently.

#### **4.1.2 Sen's Capability Approach.**

Sen's capabilities approach (1990s) goes directly to the quality of life that people can actually achieve. This quality of life is analyzed in terms of the central concepts of "functioning" and "capability". Sen argues that the correct approach to assessing how well, people are doing is their ability to live a life that we have reason to value, not their wealth of resources or subjective well-being. But to begin to assess how people perform in terms of capacity, we first need to determine which functions are important to the good life and how much, or at least we need to specify an assessment procedure to determine this.

Assessing capability is more information-demanding than other accounts of advantage because it not only has a much broader view of what constitutes the achievement of well-being, but also attempts to assess the freedom people actually have to make high-quality choices. Because the value of a set of capabilities represents an individual's effective freedom to live a life that is valuable in terms of the value of the functioning available to that individual when available



functioning is enhanced, so is the individual's effective freedom.

## 5.0 Methodology

The study is aimed at examining the impact of rice farming on poverty reduction and employment generation in Lafia local government of Nasarawa State, Nigeria. The data for the research was gathered through questionnaires administered in the fieldwork. The questionnaire was administered through the employment of research assistants and the researcher to the respondents.

In determining the same size, the Cochran W.G. (1977) sampling technique was used. This is because the total population of rice farmers, rice milling machine owners, rice milling machine operators and agrochemicals sellers is infinite or unknown. Also, a Random Sampling (SRS) was employed in the selection of the sample size of the study. This comprised of rice farmers, rice miller owners, rice milling machine operators and agro-chemicals sellers.

The Cochran W.G. (1977) formula is thus:

$$= \frac{z^2 \cdot p \cdot (1 - p)}{e^2}$$

Where,

e = the desired level of precision, the margin error

p = the fraction of the population (as percentage) that displays the attribute

z = z-value, extracted from the z-table

Given the lack of information about the population of rice farmers, rice miller owners, rice milling machine operator and agro-chemicals sellers in Lafia local government area of Nasarawa State. The study considered 50% of the total population which provides the largest variability. Then we consider a 95% confidence level (leading to an  $\alpha=0.05$ ) and a  $\pm 5\%$  precision. From the z-tables, the value for z is 1.96. Therefore, the theoretical sample would be:

$$= \frac{1.96^2 \cdot 0.5 \cdot (1-0.5)}{0.05^2} = 384.16 \quad 385$$

We therefore take 385 as the sample size of the study. We selected 280 rice farmers, 25 rice milling machine owners, 60 operators and 20 agro-chemicals sellers.

All the data collected was organized, presented and analyzed using both descriptive and inferential statistical tools. Percentages and averages were used as descriptive statistical tools while Chi-square ( $\chi^2$ ) distribution is used as a statistical analysis tool to test the hypotheses at 95% level of confidence to determine the impact of rice farming on poverty reduction and employment generation in the local government.

## 6.0 Findings and Discussion

This study is intended to examine the impact of rice farming on poverty reduction and employment generation in Lafia local government area of Nasarawa State, Nigeria. The Null and the alternative hypotheses formulated are tested by Chi-square to verify the validity of the hypotheses. The decision rule is to accept the alternative hypothesis if the computed Chi-square value is greater than the tabulated Chi-square value and reject the null hypothesis.

## 6.1 Socio-economic Characteristics of the Respondents

**Table 1: Distribution of Respondents Bio-data.**

<b>Variables</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Gender</b>		
Male	275	91.67
Female	25	8.33
<b>Age</b>		
10 – 19	12	4
20 – 29	35	11.66
30 – 39	120	40
40 – 49	65	21.67
50 and above	68	22.67
<b>Marital status</b>		
Married	170	56.66
Single	90	30
Widow	20	6.67
Divorced	20	6.67
<b>Number of children</b>		
1 – 4	180	60
5 – 9	95	31.66
10 – 14	20	6.67
14 and Above	5	1.67
<b>Educational level</b>		
No Formal Education	60	20
Primary Education	70	23.33

O' Level Certificate	80	26.67
NCE/OND	65	21.67
Degree and Above	25	8.33
<b>Occupation</b>		
Rice Farmer	180	60
Rice Milling Machine Owner	30	10
Rice Milling Machine Operator	65	21.67
Agro-Chemical Seller	25	8.33
<b>Number of Years in Practice</b>		
1 – 14	125	41.67
15 – 29	100	33.33
30 – 44	45	15
45 and Above	30	10

**Source: Field Survey 2023**

The table above shows that males with 91.67%, people at age 30-39 with 40%, married people (56.66%) and those with O'Level certificates (26.67) constitute the larger portion of the rice farming activities in the Local Government.

**Question 1:** Rice farming has impacted greatly on poverty reduction in Lafia local government area.

**Table 1: Rice farming and poverty reduction in Lafia local government area.**

	Responses	Frequency
A	Strongly agree	90
B	Agree	75
C	Disagree	60
D	Strongly disagree	40
E	Undecided	35
<b>Total</b>		<b>300</b>

Source: Author's Computation

$$\chi^2 = \frac{(O - E)^2}{E} \text{-----(2)}$$

Where:

$\chi^2$  = chi-square

O = Observed value

E = Expected value

D.F = Degree of freedom

Here:

$$O = 300$$

$$E = \frac{300}{5} = 60$$

$$\text{Degree of freedom (D.F)} = 5 - 1 = 4$$

**Table 2: Chi-square Computation**

O	E	O - E	(O - E) <sup>2</sup>	(O - E) <sup>2</sup> /E
90	60	30	900	15.00
75	60	15	125	3.75
60	60	0	0	0
40	60	20	400	6.667
35	60	25	625	10.417
Total				35.834

Source: Author's Computation

From the table  $\chi^2$  tabulated 0.5,4 = 9.49

Calculated  $\chi^2 = 35.834$

### Decision

Since calculated  $\chi^2$  (35.834) is greater than  $\chi^2$  tabulated (9.49) and it falls into the critical region, we, therefore, reject the null hypothesis and accept the alternative hypothesis that "rice farming has contributed positively to poverty reduction in Lafia local government of Nasarawa State.

Question 2: Do you agree that rice farming has contributed to employment generation in Lafia local government area?

**Table 3: Rice farming and employment generation in Lafia local government area.**

	Responses	Frequency
A	Strongly agree	85
B	Agree	78
C	Disagree	52
D	Strongly disagree	40
E	Undecided	45
Total		300

Source: Author's Computation

From equation 2:

$$\chi^2 = \frac{(O - E)^2}{E}$$

Where:

$\chi^2$  = chi-square

O = Observed value

E = Expected value

D.F = Degree of freedom

Here:

$$O = 300$$

$$E = \frac{300}{5} = 60$$

$$\text{Degree of freedom (D.F)} = 5 - 1 = 4$$

**Table 4: Chi-square Computation**

O	E	O - E	(O - E) <sup>2</sup>	$\frac{(O - E)^2}{E}$
85	60	25	625	10.416
78	60	18	324	5.4
52	60	8	16	0.267
40	60	20	400	6.667
45	60	15	125	2.083
<b>Total</b>				<b>24.833</b>

Source: Author's Computation

From the table  $\chi^2$  tabulated 0.5,4 = 9.49

Calculated  $\chi^2 = 24.833$

## **Decision**

Since calculated  $X^2$  (24.833) is greater than  $X^2$  tabulated (9.49) and it falls into the critical region, we, therefore, reject the null hypothesis and accept the alternative hypothesis that “rice farming has contributed greatly to employment generation in Lafia local government of Nasarawa State.

## **7.0 Discussion of Findings**

The purpose of this study is to examine the impact of rice farming on poverty reduction and employment generation in Lafia local government of Nasarawa State, Nigeria. The study found that the major challenges militating against rice farming in the Lafia local government area as indicated by the respondents include seasonal unemployment due to lack of constant water supply for farming, lack of finance, and high cost of farm inputs followed by climate change. Others are price fluctuation, low patronages, the non-readily market for the produce and difficulty of getting land for rice farming by those who do not own land.

Rice farming in the Lafia local government area and Nasarawa state at large remains one of the largest industrial sites for employment generation and poverty reduction. This study therefore validates the positive relationship between rice farming and poverty reduction, and employment generation in the Lafia local government area.

Descriptive statistics show that males, people aged 30-39, married people and those with O'Level certificates constitute the larger portion of the rice farming activities in the Local Government.

## **8.0 Conclusion and Recommendations**

The results of the analysis show that; rice farming has a positive impact on poverty reduction and employment generation in the Lafia local government area of Nasarawa state as indicated by the Chi-square analysis. This means that by getting involved in rice farming activities the poverty status of the respondents has improved and that rice farming significantly generates employment for the respondents.

The government should embark on consistent, integrated, and planned poverty reduction programs based on the empowerment of micro and small enterprises in the local government area. Synchronize policies to reference poverty alleviation carried out by the central and regional governments, the business community, non-governmental organizations, and other social components. The government should also build roads and bridges linking the rural communities of the local government area with Lafia town for timely evacuation and transportation of rice products to and out of the market.

The government should encourage rice farmers in the Lafia local government area by providing rice farmers with irrigational facilities, agricultural soft loans, agricultural inputs subsidy, farm mechanization, and improved technology to ensure quality products for effective market bargaining power.

The government should also encourage export promotion, regulate rice market activities by fixing the commodity price as against price fluctuation, remove rice market unionism, and review the land tenure system in Lafia local government to make land available even to those that do not have land for massive participation in rice farming.

The government should build synergies among rice farmers, build innovative pro-community poverty reduction programs, and build a commitment to regional development based on regional growth; economic growth, and investment growth that has an impact on employment growth through increasing the capacity for the development of education and health facilities.

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