Original Research Article

RICE PRODUCTION AND POVERTY REDUCTION IN AGATU LOCAL GOVERNMENT AREA OF BENUE STATE, NIGERIA.

ABSTRACT

The study was carried out to analysed rice production and poverty reduction in Agatu local government area of Benue state, Nigeria. To this end, a multi-stage sampling technique was used. The first stage involved the purposive selection of five wards noted for high production of rice. Secondly, a simple random sampling was used to select twenty five respondents each from the five wards to sum up to one hundred and twenty five respondents used for the study. The analytical tools employed included simple descriptive statistics like mean, frequency distribution, percentages and tables and inferential statistics like logit regression model. The data used were from primary source and this was collected by administering of structured questionnaires to illicit information from the farmers. The results of the analysis revealed farmers to be in their active age, mostly married, males' dominance, highly experienced and educated with large families. Annual income from rice production was significant in reducing poverty in the study area pseudo R^2 value of 0.886. The overall Chi-Square value was significant at 1% level of probability, also log likelihood value of 135.27. The study recommends the need for credit to be extended to poor farmers to help stimulate their investment in order to increase their income. Farmers are also encouraged to engage in non-farm activities to raise their level of income.

KEYWORDS: Poverty, Rice production, Annual income and Analysis.

INTRODUCTION

Rice (Oryza sativa) is one of the major staple food of the world, ranking third after wheat and maize on global level and second in terms of area under cultivation [1].

It is a major source of food for about half of the world's population supplying basic energy needs of the people.

In Nigeria, rice cultivation is an age long enterprise providing employment opportunities and source of food to vast and diverse population of the country. It has become a staple food for all household; both

the rich and poor consume a great quantity [2].

In terms of local production, rice is now one of the main cereals produced by Nigerian farmers; it is cultivated in virtually all the agro-ecological zones of Nigeria. It covers both the upland and the lowland swamps, depending on the variety.

Rice has changed from being a luxury to a necessity whose consumption will continue to increase with per capita GDP growth, thus implying that it is important in the Nigeria diet as a major food item for food security which increases as economic growth continues [3].

Production of paddy rice in Nigeria is mainly in the hands of small scale farmers who have adopted unimproved farming techniques. Actual yields of rice differ significantly from potential yields and this has been attributed to low productivity, [4].

Poverty is a global phenomenon, which affects continents, nations and peoples differently. It afflicts people in various depths and levels at different phases of existence. There is no nation that is absolutely free from poverty. The main difference is the intensity and prevalence of this malaise [5].

Nations in sub-Saharan Africa, South Asia and Latin America are currently with the highest level of poverty and consequently with the lowest level of socio-economic development. They also have the highest level of social insecurity, violence, unrest and generally unacceptable low standard of living phases of existence. [5].

The Central Bank of Nigeria [6] view poverty as "a state where an individual is not able to cater adequately for his or her basic needs of food, clothing and shelter; is unable to meet social and economic obligations, lacks gainful employment, skills, assets and self-esteem; and has limited access to social and economic infrastructure such as education, health, portable water, and sanitation; and consequently, has limited chance of advancing his or her welfare to the limit of his or her capabilities".

In view of the above, various past and present governments have put policies and programs in place to reduce the suffering of the people.

Some of these includes: operation feed the Nation (OFN), the Green Revolution, Peoples Bank of Nigeria (PBN), Community Banks, Directorate of Food Roads and Rural Infrastructure (DFFRI), Nigerian

Agricultural Land Development Authority (NALDA), Family Economic Advancement Program (FEAP), Better Life for Rural Women, Family Support Program (FSP) and National Poverty Eradication Program (NAPEP), Empowerment and Development Strategy (NEEDS) among others.

Despite all these efforts, the level of poverty has been on the increase. According to the MPI Report, as at 2010, 46% of Nigerians lived below the national poverty line with 28% of these in urban areas, and near 70% in the rural. Although a report by the World Bank, released in 2014, showed that only 33% of Nigerians could be considered poor.

The [7] has it that a staggering 112.519 million Nigerians live in relative poverty conditions. This represents 69 per cent of the country's total population estimated to be 173 million. More worrisome is the fact that the poverty rate is rising at a time the Gross Domestic Product (GDP) growth rate is put at 7.75 per cent.

Poverty amidst plenty is the world's greatest challenges and it is expected to be fought with passion.

Based on low per capita gross national product, Nigeria has since 1990 been classified as a poor country. Hence the need for various governments to look for measures to tackle poverty. Measures put forth by successive governments have failed thus the need for government to have a rethink of her approach towards reducing poverty [8].

Benue State whose appellation is the 'Food Basket of the Nation'-an agrarian state according to the global multidimensional poverty index by U.N has 59.2% poverty rate. Most of the indigenes rely on government to provide job opportunities. Since the civil public service cannot absorb the cream of citizens seeking employment, a lot of them tend to engage in small scale businesses.

One peculiar small scale industry that is of interest and is undertaken by a lot of people in the state is the rice production enterprise.

Rice cultivation in Benue state remains one of the largest industrial sites for the collection of paddy rice. The production is done in different local governments in the state in which Agatu Local Government is one of the vicinity that is also one backward in terms of poverty reduction in Benue state.

The crop can be seen as a veritable tool in poverty reduction.

Benue state as the food basket of the nation requires a targeted agricultural approach to poverty alleviation. This is because of the enormous agricultural resources the state is endowed with and the overwhelming proportion of the people that engage in it [9].

LITERTURE REVIEW

Poverty is a multi-faceted phenomenon that affects mankind in different ways and means different things to so many people under different situation. Poverty can mean a state of being poor, state of deprivation, state of disempowerment, etc.

[10] defines it as "a situation in which the individual household is unable to attain an acceptable minimum standard of living- giving rise to several material deprivations, absence of recreation opportunities, lack of access to economic as well as political power, inferiority complex, isolation and social degradation"

Poverty is a serious problem affecting most economies of the world. The effect of this problem is so great that it is now threatening the survival of mankind on earth. This is because poverty and growth of an economy go hand in hand. Any economy whose citizens are suffering from poverty cannot witness growth in her economic activity. [11] Described poverty as "a plague afflicting people all over the world. It is considered as one of the symptoms or manifestation of underdevelopment"

[12] Described poverty as "a living condition in which an entity is faced with economical, social, political, cultural, environmental deprivation."

According to [13] as cited by [9] "poverty consists of two interactive deprivations- psychological and social. Psychological deprivation describes the inability of an individual to meet or achieve basic material

and physiological need which can be measured either as a lack of income which limits access to food and education, health, housing, water and sanitation services. Social deprivation refers to absence of elements that are empowering such as autonomy, time, information, dignity, self esteem.

METHODOLOGY

Agatu Local Government is one of the 23 Local Government Areas of Benue State, Nigeria. It shares boundary with two local governments in the state namely: Gwer-West in the east, Apa in the South. In the North it shares boundary with Nassarawa State and Kogi state in the West. Agatu lies between latitude 7.9061^0 and longitude 7.8548^0. Agatu LGA is situated on 315km Southwest of Abuja and is divided into 10 council wards namely: Egba, Enungba, Obagaji, Odugbeho, Ogbaulu, Ogwule Kaduna, Ogwule Ogbaulu, Okokolo, Oshigbudu, and Usha.

A multi-stage sampling technique was used. Firstly, purposive random sampling technique was used in the selection of five wards noted for high production of rice out of the ten wards. From the five wards, twenty five respondents each were randomly selected to give a total of one hundred and twenty five respondents for the study. Primary data were collected with the use of structured questionnaires to elicit information from the respondents. Information was collected on the demographic characteristics of the respondents, constraints to rice production and on impact of rice production in poverty reduction.

Descriptive statistics like frequency distribution tables, percentages and mean were used to describe the socioeconomic characteristics of the farmers as well as the constraints to rice production, while logit regression analysis was used to analysed the impact of income of rice on poverty reduction.

Model Specification

In a logit model, the endogenous variable is a dummy variable which is dichotomous with 1 representing the household if not poor and 0 if poor [14]. The logit was used

to determine the impact of income from rice production on poverty reduction.

The parameters were estimated by maximum likelihood within the likelihood function assuming independence over the observations, then we have:

$P(Y) =$.................... (1)

Given that Y means poverty, then Y must be poor (0) or non poor (1).

the likelihood is simplified as

$\text{Ln } Y_i = \; = \beta_{o+k} \; +$................. (2)

where Y_i = natural log of Y (poverty status)

X_{ki} = A set of farmer socio-economic characteristics.

β_k = Parameters

U_i = random disturbance term or error term

This is explicitly stated to involve all dependent variables

$Dv = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7 ....X_n)$

Dv = dependent variable (poverty status) as stated by [15] is calculated as

Dv = Annual income from rice production/Total numbers of days in year.

if it is less than one it means the farmer is poor in which case we assign (0) and if it is one dollar and above it means the farmer is non- poor we assign (1)

Therefore, re-writing the dependent unction to form the specific model for this study, we have:

$DV = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \mu$

X_1 = annual income from rice production

X_2 = quality of house lived (1 if zinc roof and cemented walls or floors, 0 if otherwise)

X_3 = access to credit (1 if access and 0 if not)

X_4 = level of education (1 if formal and 0 if otherwise)

X_5 = access to medical service (1 if they visit general or specialist hospital and 0 if otherwise)

X_6 = value of asset

X_7 = farming experience

X_8 = access to clothing (1 if new clothing is bought in a year, 0 if otherwise)

X_9 = feeding habit (1 if three times and 0 if otherwise)

RESULTS AND DISCUSSION

Socio-Economic Characteristics of Rice Farmers

The socio-economic characteristics of rice farmers considered in the study included sex, age, marital status, farm size, farming experience, level of education and annual income. The result is as presented in table 1.

The result on sex shows that majority (80.80 percent) of the respondents were male, while 19.20 percent were female. This implies that rice farming is mostly done by the male folk due to the labor intensive nature of rice production; therefore, the female prefers to engage in the production of crops with lesser labor requirements. This result agrees with that of [16] who found out that rice farming is mostly dominated by male because they are capable of coping with the drudgery associated with rice farming.

As can been from the table,32.80 percent of the respondents were between the age of 21 and 31years, 24.80 percent were within the age of 32-42 years, 21.60 percent were within the age of 43-53 years, 14.40 percent were between the age of 54-64 years, while 6.40 percent were above 65 years, the average was 41 years. This implies that a greater number of the respondents were youths who are agile and stronger farmers in the area. This age range is seen as the prime age of productivity [17]. This result also conforms to the findings of [18] who noted that farm activities are carried out by farmers whose ages fell within the productive ages and have the strength to carry out the tedious operations involved in farming.

Results on marital status indicated that majority (79.29 percent) of the respondents was married, 17.60 percent were divorced, 2.40 percent were widowed, and 0.80

percent was single. This implies that married people were more into rice farming and this can be traced to the fact that they have more responsibilities like providing the household needs for their families. This finding agrees with the finding of [19] who found that married people are more into rice farming because they needed income to meet their financial obligation. Also the result shows that 48.00 percent of the farmers had family size of 10-16 people, 41.60 percent had more than 16 people while 10.40 percent had 2-8 people. The average household size is 10 persons. This implies that the farmers have large family size which could help in supply of labor. This is in line with the findings of [20] who found that the family size has a great role to play in family labour provision in the agricultural sector.

Result on farm size shows that majority (72.00 percent) of the respondents has farm size ranging from $1 - 3$ hectares while 28.0 percent has $4 - 6$ hectares. This implies that most of the respondents are small scale farmers with average hectare of 2.9 hectares. This agrees with the findings of [21] they noted that in African culture, parents' farmland is shared among members of the family which leads to fragmentation of the farmland into smaller pieces based on family portions, making mechanization of agricultural practices very difficult. Result on farming experience, shows that 35.20 percent of the respondents have farming experience of 6-16years, $27 - 40$ percent have $28 - 38$ years, 8.80 percent have 39 -49 years while 4.00 percent have more than 5 years of experience. The average year of farming experience is 21 years. The farmers are well experienced in rice production and this could translate to high output. This is in line with the findings of [22] who reported that high years of farming experience will result in less resistant to adoption of innovation.

The result on the level of education shows that 65.60 percent of the respondents have formal education while 34.40 percent do not. This show that a larger number of the respondents have education which can affect their ability to manage resources effectively, adopt new farming techniques or technologies and their ability to make changes generally. With this high level of education, there will be efficiency in the use of mechanized form of agriculture and there will be less resistant to innovation, also managerial ability will be high.

Result on annual income show that 48.80 percent of the respondents earn 50001 –

150000 Naira, 26.4 percent earn 150001 – 250000 naira, 16.00 percent earn 250001 – 350000 naira, 5.60 percent earn 3500011 – 450000 naira, while 3.20 earn more than 450,000 Naira, with an average income of 172,200naira per hectare annually. This implies that the respondents earn a relatively low income annually as they are small scale farmers.

Table 1: Distribution of Respondents According to Socio-Economic Characteristics

Variable	Frequency	percentage	Mean
Sex			
Male	101	80.80	
Female	24	19.20	
Age (years)			
21-31	41	32.80	
32-42	31	24.80	41.608
43-53	27	21.60	
54-64	18	14.40	
>65	8	6.40	
Marital status	10	8.00	
Single	90	72.00	
Married	18	14.40	
Divorced	7	5.60	
Widowed	13	10.40	
Family size	60	48.60	10.576
	52	41.60	
2-8			
10-16			
>16	90	72.00	2.936
	35	28.00	
Farm size			
<1-3	44	35.20	
4-6	37	29.20	
Farming experience	28	22.40	21.376
	11	8.80	
6-16	5	4.00	
17-27			
28-38			
39-49			

>50			
Education			
Formal	82	65.60	
No formal	43	34.40	
Annual income	61	48.80	
	33	26.40	172,200.00
50001-150000	20	16.00	
150001-250000	7	5.60	
250001-350000	4	3.20	
350001-450000			
>450000			

Source: field survey, 2017

Impact of Rice Production on Poverty Reduction

Table 2 shows the result of logistic regression analysis of the factors affecting poverty reduction in the study area. The log likelihood value is - 8.2825 and the associated Chi-square value of 135.27 is statistically significant at 1% level of probability. This implies that the model can be relied upon to explain probability of poverty reduction in the study area. From the result, the pseudo R^2 value is 0.89. From the results, annual income from rice production is the significant and important variable that will help in poverty reduction in the study area. The coefficient of annual income from rice production is negative and significant at 1% level of probability, this is correctly signed; this implies that average annual income has influence on the probability of the sampled respondents being poor. That is, as annual income increases the level of poverty reduces and vice versa. This is in agreement with the findings of [9] and [15] they noted that annual income could reasonably help in changing poverty status of farmers.

Other variables such as access to clothing, access to medical services and feeding are also negatively signed and are not important as factors affecting or reducing poverty in the study area.

Chi- square is significant at 1% meaning that the significant variable is important in affecting poverty status in the study area.

Table 2: Logic Regression Results of Impact of Rice Production on Poverty Reduction

Variables	Coefficient	Standard error	p>(z)
Annual income	-.000094	.0000321	0.003*
Access to credit	8.180	4.756E3	0.999
Value of asset	-49.521	.022	0.993
Access to clothing	-49.521	5.285E3	0.999
Access to medical service	-3.019	2.542E3	0.991
Feeding	-24.607	2.166E3	0.991
Constant	32.49192	2993.241	0.991

Linear Regression Chi^2 135.29

Pseudo R^2 0.8909

Log likelihood =8.2825222

CONCLUSION AND RECOMMENDATIONS

In view of the increasing poverty in Nigeria, a concerted effort is needed to help reduce the level of poverty among the populace. Annual income from rice production is an important factor to help in reducing poverty in the study area and Nigeria at large. The study has established this. The need for credit to be extended to poor farmers to help stimulate their investment in order to increase their income is a necessity. Any policy by government that will lead to increase income of farmers will help in reducing poverty. Farmers are also encouraged to engage in non-farm activities to raise their level of income.

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