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Full-Length Research Paper

Assessment of Rice Farmers' Participation in the Nigerian Agricultural Insurance Corporation (NAIC) Scheme in Bende Local Government Area of Abia State, Nigeria

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ABSTRACT: Farmers participate in insurance schemes as a result of high risks associated with agriculture and the occurrence of natural disasters like fire, pest and diseases, drought and floods that can lead to low farm yields and consequently lower incomes. The major objective of the study was to assess rice farmers' participation in the Nigerian agricultural insurance scheme in Bende Local Government Area of Abia State. Specifically, the study investigated the farmers' socio-economic characteristics and their awareness of the Nigerian agricultural insurance scheme. A multistage sampling procedure was used to survey a total of one hundred rice farmers. Descriptive statistics and logistic regression model were employed in data analysis. Results showed the mean age of the farmers was 41 years. About 75% of them were males and 25% females while 54% of the farmers had tertiary education. The logit regression showed that having access to loans significantly increased the likelihood of rice farmers' participation in the insurance scheme. It was also learnt that the major challenges encountered by the rice farmers were lack of finance and inability to understand the working technicalities of insurance policy scheme, as well as limited information about the NAIC scheme. It is recommended that government should enhance farmers' access to loans through policies that encourage the financial institutions to readily lend to smallholder farmers and to encourage their participation in the agricultural insurance scheme through public awareness campaign as it would help in the sustenance of farmers' production.

Keywords: Agriculture, challenges, farmers, insurance, rice

INTRODUCTION

Rice known as *Oriza sativa* (Asian rice) or *Oriza glaberima* (African rice) is the most widely consumed staple food for many of the world's human population. Nigeria is the largest producer of rice in West Africa (Nwaobiala, 2016). However, of the almost 7 million metric tons of rice consumed annually in Nigeria, only about 3.8 million metric tons is produced domestically (FAO, 2022). The bulk of rice producers in Nigeria are smallholders, farming on less than 2 hectares (Nwaobiala, 2016). Rice farmers like other agricultural businesses are faced with diverse risks such as yield, price and resource risks which make their production and incomes unstable. Repeated income shocks and asset losses can keep farming households trapped in poverty, thereby requiring that farmers protect their income and livelihood through some other means (Kuhn, 2016). Risk management entails measures/strategies by individuals and organizations that contribute to reducing, controlling and regulating risks. In this regard, the insurance industry offers opportunity for protection and mitigation of income loss.

Insurance protect against unexpected losses by pooling the resources of the many to compensate for the losses. Agricultural insurance is the protection of farmers against

the risk of natural disasters, pest and diseases in exchange for regular premium payments proportion to the likelihood and cost of risk involved. Agricultural insurance provides farm operators with stable income, improved economic security, peace of mind and hope in future through lowering the level of risk, thereby bringing higher levels of investments and flourishing economy. In an attempt to address the problem of food importation and conservation of foreign reserve, Nigerian government over the years has made various interventions in order to boost domestic food production such as the recent policy that placed a ban on the importation of rice (Usman and Aliyu, 2022). Specifically, to address agricultural production risks, the Federal Government of Nigeria established the Nigeria Insurance Corporation (NAIC), to provide protection to farmers on the effect of natural hazards.

The scheme was launched on December 15, 1987, as part of efforts to enhance and sustain food production in Nigeria (Onuk *et al.,* 2016). This was because most efforts to promote food production have not yielded much result, largely due to incidence of incremental weather conditions and effects of natural hazards like flood, drought, pests, disease, fire etc. Nigeria rice farmers are increasingly faced with risk factors such as the aforementioned and several other unplanned events whose occurrence cannot be readily predicted and therefore threatens the sustainability of the farming enterprise (Eleri *et al*., 2012). As it is, farmers are unable to predict the probability of occurrence of risks events and being faced with adversities that are too great to bear alone.

More so, as at when farmers are planting their crop or raising livestock, they are uncertain about the prices they will receive for their products in future by the time of harvest or sale (USDA, 2016). As such, they can choose to transfer or share the risks associated with their production with one or more individuals or firms.

Basically, agricultural insurance is a confidence-supporting tool that enables agricultural producers to make investments on risky but more profitable projects (Sadati *et al*., 2010; Nahvi *et al*., 2014). Despite the benefits of agricultural insurance, Abdulmalik *et al*. (2013) noted there exist a low level of participation in insurance activities in Nigeria. Reportedly, less than 1% of the total population of farmers in Nigeria are captured in insurance schemes (Eleri *et al*., 2012).

This underscores the need to educate farmers about the importance of insurance (Danso-Abbeam *et al*., 2014). The agricultural sector is known as the most important economic part and the axis of programs of national sustainable development yet the sector is characterized by a strong exposure to varied risk that may increase in the future. Due to the increased complexity and variation in agricultural risk, rice farmers find it very difficult in making rational decisions when faced with risks. On this background, it becomes important to examine the participation of rice farmers in the Nigerian agricultural insurance scheme. Therefore, the main objective of this study is to evaluate the participation of rice farmers in the Nigerian agricultural insurance scheme. The specific objectives include describing the socioeconomic characteristics of the rice farmers in the study area, examining farmers' awareness of Nigeria Agricultural Insurance Corporation, identifying determinants of farmers' participation in the insurance scheme and identifying the challenges faced by rice farmers. This study through the information it gathers would be useful to rice farmers and policy makers by providing information that will enhance policy formulation with regards to rice production and farmers' participation in the insurance industry.

METHODOLOGY

The study was carried out in Bende Local Government Area of Abia State. The State lies in the South Eastern part of Nigeria with Umuhia as its capital and Aba, its major commercial city. The State is made up of 17 Local Government Areas (LGAs) including Bende. Bende LGA is made up of thirteen (13) communities (Iheke and Chikezie, 2016). It is rich in natural resources such as crude oil, natural gas, lime stones, gold, salt, laterite gravel and phosphate. Agriculture is a major economic activity in Abia State. Commonly produced crops include rice, yams, maize, potatoes, cashews, plantains, taro, cassava, oil palm, etc. A multi-stage sampling technique was used in data collection. In the first stage, Bende LGA was purposively selected due to its high level of commercialization of rice production activity. In the second stage, four out of thirteen communities were purposively selected. The communities selected were Ugweueke, Item, Igbere and Alayi. Using a list of rice farmers provided by the rice farmers' associations across the selected communities as sampling frame, 25 farmers were randomly selected from each community to make a total sample size of 100 farmers. Data was collected with the administration of questionnaires alongside personal interview and analyzed using descriptive statistics and a logistic regression model with the help of the SPSS tool.

RESULTS AND DISCUSSION

Table 1 shows that majority of the farmers were males (69%), while 31% were females, this finding is inconsonance with the findings of Usman and Aliyu (2022) that males are more involved is different economic activities than their female counterparts. The respondents

Table 1: Socio-economic characteristics of the farmers.

Variables	Frequency (N =100)	Mean
Age (years)		41
29 – 39	55	
40 – 50	28	
51 and above	17	
Education level of farmers		
Non-formal	2	
Primary	2	
Secondary	42	
Tertiary	54	
Gender		
Male	69	
Female	31	
Marital status		
Single	32	
Married	68	
Agricultural association		
Member	17	
Non Member	83	
Agricultural extension services		
Contact	9	
No contact	91	
Access to loan		
Yes	36	
No	64	
Experienced hazard		
Yes	53	
No	47	
Considers premiums high		
Yes	92	
No	8	
Farming experience (in Years)		16
Farm size (ha.)		0.2
Quantity of rice produced last season in bags (50kg/bag)		7

were mostly married (68%) in contrast to 32% that were not; implying that married persons predominated in agricultural activities in the study area. The average age of the respondents was 41 years and more so, majority of them were in their youthful active years with an average of 16 years of experience in farming. According to Onyeneke (2017), highly experienced farmers are likely to have more information and knowledge on rice production management practices. It was also observed that the farmers averagely cultivated 0.22 hectares of land (3 plots) and the average rice output in the last production season was about 7 bags. The result showed that many of the farmers had attained either secondary (42%) or tertiary education (54%). Furthermore, the study showed that majority (83%) of the respondents do not belong to any agricultural association and 91% have not had any contact with extension officers. Also, 64% of the farmers have not had access to loans. More than half of the farmers (53%) have experienced one form of risk hazard and 92% thought the agricultural insurance premium were high. The descriptive breakdown of the farmers' awareness of Nigeria agricultural insurance corporation (NAIC) revealed that 23% of the farmers are aware and have knowledge of the NAIC but only 9% of them had taken part in the scheme (Table 2). This implies that their awareness of the scheme has not translated to their participation and which may be due to certain constraints. The logistic regression analysis on the determinants of the effects of farmers' participation in the insurance industry presented in (Table 3) showed that all the variables had positive coefficients but only access to loan was significant. The result implied that those who had access to loan had a higher likelihood of participating in the NAIC scheme than those who have had no access to loan. Also, as age and farming experience although not significant increases, the rice farmers' participation in the insurance scheme likely increases. On the other hand, the intercept (constant) has a negative but significant coefficient implying that on the average barring any changes in the socioeconomic characteristics, the

Table 2: Rice farmers' awareness of the Nigerian agricultural insurance corporation.

Statement	Yes	No
	Frequency	Frequency
Have you heard of the Nigerian agricultural insurance cooperation?	23	77
If yes, have you taken part in the NAIC scheme?	9	91

Table 3: Logit regression estimates on determinants of rice farmers' participation in the insurance scheme

Variable	Coefficients	P-value	Odds-ratio
Constant	-6.554	0.006***	0.001
Age	0.021	0.628	1.021
Farming experience	0.133	0.245	1.142
Awareness	0.668	0.387	1.950
Risk hazard experience	1.216	0.155	3.373
Access to loans	1.963	0.019**	7.121
Model Prediction Success (MPS)	91.0%	0.000	0.000
Log likelihood	51.624	0.000	0.000
Hosmer-Lemeshow's Model	8.011 (0.432)	0.000	0.000
Cox & Snell R^2	0.085	0.000	0.000
Nagelkerke R^2	0.187	0.000	0.000

***Significant at P ≤ 0.001; **Significant at P ≤ 0.05

Table 4: Challenges faced by rice farmers in participating in the NAIC scheme.

Statement	Strongly Disagree	Disagree	Agree	Strongly Agree	Mean Score	Decision
Limited information about operations of the Nigerian agricultural insurance cooperation.	6	76	8	10	2.22	DA
The premium price demanded for the insurance is high	6	8	19	67	3.47	A
Unfavourable terms and conditions of purchasing the insurance	70	13	6	11	1.58	DA
Inadequate finance to participate in NAIC	4	4	13	79	3.67	A
Forced to acquire the insurance policy so as to access other government benefits	7	6	75	12	2.92	A
Inability to understand the working or technicalities of insurance policy schemes	7	7	75	11	2.90	A

*A = Agree and DA = Disagree. Figures in parenthesis are percentages.

farmers had negative disposition (not inclined) to participate in the NAIC insurance scheme. More so, the association between the dependent and explanatory variables is measured by the odds-ratio. For example, the odds-ratio of age and farming experience variables are 1.02 and 1.14 respectively. This means for a unit change in these variables, the odds of participating in the insurance scheme will increase by 1.02 and 1.14 folds or increase by 2% and 14% respectively. While, the odds of those with access to loans participating in the scheme is 7.12 times greater or 612% higher than the odds for those without loan access. The Hosmer-Lemeshow test of goodness of fit with a chi square of 8.011 and p-value (0.432) indicate that there is not enough evidence to conclude that the model does not fit the data. The model is assumed to have adequate fit if the Hosmer and Lemeshow's goodness of fit test p-values are comfortably greater than 0.05. Also, the Cox Snell R^2 and the NagelkerkeR^2 are regarded as pseudo R^2 values indicate the range of the variation in the dependent variable and in this case, it is 8.5% to 18.7%.

The statistics of the challenges faced by rice farmers in participating in the Nigeria agricultural insurance scheme as presented (Table 4) showed that the farmers generally agreed that they were majorly affected by inadequate finance to participate in the NAIC (M=3.67) this implies that farmers were concerned with the premium price high as they also agreed on the item with a mean value of 3.47. Also, the farmers agreed that being left with no option than to buy the insurance policy in order to access other government sponsored benefits (2.92) was a challenge and the inability to understand the working or

technicalities of insurance policy schemes (M=2.90) was also a challenge. On the other hand, the farmers disagreed that limited information about operations of the Nigerian agricultural insurance cooperation (M=2.22) and unfavourable terms and conditions of purchasing the insurance (M=1.58) were challenges.

CONCLUSION

The study set out to assess the awareness and influencers of rice farmers' participation in the Nigerian agricultural insurance scheme in Bende Local Government Area of Abia State. Collected primary data was analysed using simple descriptive statistics and logit regression model. It is inferred from the study that the farmers were small-scale producing farmers, producing 7 bags of rice on the average and their ability to have access to loans increases their likelihood of participating in the NAIC scheme. It was also observed that the farmers faced various challenges like inability to understand the insurance policy scheme and being forced to acquire the insurance policy so as to access other government benefits among others. Therefore, on the basis of the study findings, it is recommended that government should enhance farmers' access to loans through policies that encourage financial institutions to readily lend to smallholder farmers and to encourage their participation in the agricultural insurance scheme through public awareness campaign as it would help in the sustenance of farmers' production.

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