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Analysis of Rural Cassava Farmers' Participation in the Nigeria Agricultural Insurance Scheme in Imo State, Nigeria

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I. Introduction

In spite of the impressive effort and conceited persuasion to invest in agriculture by the government, the reluctance expressed by credit institutions has been worrisome. This stems from the low confidence in the agricultural sector following unprecedented risks and uncertainties in the practice. Agriculture is bedeviled by price fluctuation, instability in input and production supplies, poor yield and post harvest losses, pests and diseases attack, inclement weather and vagaries of environmental conditions. These have individually and collectively enmeshed the rural farmers in the web of poverty. Ijere (1981) observed that large volume of investible fund is imperative to disentangle the rural farmers from the vicious cycle of poverty. However, the nostalgia about credit disbursement to farmers is based on the skepticism on their repayment ability. Njoku and Nzenwa (1990) attributed high loan default rate to the occurrence of natural hazards. Insurance is considered as one of the most effective means of reducing the vulnerability of the poor from the impacts of disease, theft, violence, disability, fire and other hazard. Insurance protects against unexpected losses by pooling the resources of the many to compensate for the losses of the few, the more uncertain the event the more insurance becomes the most economical form of protection (Brown and Churchill 1999). Policyholders only pay the average loss suffered by the group rather than the actual costs of an individual event: insurance replaces the uncertain prospect of large losses with the certainty of making small regular affordable premium payments (Brown and Churchill, 1999). The primary function of insurance is to act as a risk transfer mechanism to provide peace of mind and protect against losses. Risk can be handled by: assumption, combination, transfer or loss prevention activities. Insurance schemes utilize the combination method by persuading a large number of individual to pool their risks into a large group to minimize overall risk (Aliero and Mukhtar, 2012). In the developed world insurance is part of society, such that some forms of cover are required by law. In developing countries the need for such a safety net is much greater particular at the poorest level where vulnerability to risk is much greater and there are fewer opportunities available to recover from a large loss (Aliero and Mukhtar, 2012).

In the light of the above, the Government of Federal Republic of Nigeria identified Agricultural insurance as a panacea to the doubt and attendant disenchantment expressed by credit institutions following the multifarious risks and uncertainties in agriculture. In 1987, the government of Nigeria formerly launched the Nigerian Agricultural Insurance Scheme (NAIS) and in 1988 incorporated the Nigeria Agricultural Insurance Company (Nnadi, *et al*, 2013). Agricultural insurance is the stabilization of income employment prices and supplies of agricultural products by means of regular and deliberate savings and accumulation of funds in small installments by many in favorable time periods to defend the participants in bad times (Mordi

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1995). Farmer's losses, indisposition and fear are allayed following the cushioning effects from the accumulated saving. Thus farmers are put back to business irrespective of misfortune suffered provided the peril is covered.

The Nigerian agricultural insurance scheme was institutionalized in 1987 to obviate problems of knowledge imperfection, risks and Uncertainties in agricultural enterprises. The scheme inter alia offers protection to the farmers from the effects of natural disaster and ensures payment of appropriate compensation, sufficient enough to keep farmers in business after suffering losses. The government on the other hand is provided with back-up and information on agricultural development in the county. The scheme covers arable crops, crops and livestock. The Nigeria agricultural insurance company (NAIC) succinctly put the objectives of the scheme as follows:

(a) To promote agricultural production by enhancing greater confidence in adopting new and improved farming practices greater confidence in adopting new and improved farming practices and making for greater investment in the agricultural sector thereby increasing the total production.
(b) To provide financial support to farmers in the event of losses arising from natural disasters.
(c) To increase the flow of agricultural credit from lending institutions to the farmers.
(d) To minimize or eliminate the need for emergency assistance provide by government during periods of agricultural disasters.

Agricultural insurance holds wonderful prospects for the transformation of the agricultural sector. By indemnifying farmers from the perils covered in the scheme (Mordi, 1995), they are put in the same closer financial pedestal to operate after suffering losses. Following the numerous advantages of the scheme, it is expected that farmers involved in the production of crops prone to high risk and uncertainties but distinguished for mitigating food insecurity, and have wide spread uses should avail themselves of the scheme. Cassava (*Manihot esculentus*) is marked with such potentials. Cassava provides about 40 percent of calories consumed in Nigeria (Nwajiuba, 1995) and about 70 percent of the daily calorie intake of more than 50million Nigerians (Ugwu et al, 1989). Whereas, Adekanya (1985) posited that cassava is the most important root crop in the tropics. Odigbo (1983) observed that the demand for cassava especially for export has increased appreciably following the Federal Government of Nigeria's cassava initiative. Cassava production is bedeviled by pests and diseases attack, fire outbreak, flooding, poor storage etc (Youdeowei et 1985; Theberge 1985).

It is however unfortunate that despite the status of cassava little or nothing is known about the farmers' participation in Nigeria agricultural insurance scheme to boost production by forestalling risks and uncertainties. There are on empirical data on this. Information available are based on guesses and suppositions. These have given rise to a wide gap in knowledge the ensuing gap has been inhibiting the formulation of holistic policy measures. A study of cassava farmer's participation in the scheme has become as timely as it is important, not only to position the farmers strategically but to equip them with the necessary thrust essential for meeting the food security needs of the nation ensuring persistence in farming and overcoming the challenges of the present especially in the light of the global clima te change.

a) Objective of the study

The broad objective of the study is to analyze the participation of cassava farmers in the Nigeria Agricultural Insurance Scheme with a view to making policy recommendations. The specific objectives include;

1. to analyze the socio–economic differentials of participants and non participants in the scheme.
2. to investigate reasons for the participation and non participation of the farmers in the scheme.
3. to analyze the socio-economic and farm enterprise factors that determines participation in the scheme.

II. Methodology

The study was carried out in Imo state, Nigeria with specific focus on Ohaji-Egbema Local Government area (LGA). The local Government area is one of the 27 local government areas that make up the state. Located in owerri agricultural zone of the state, the headquarters is in Egbema. It shares boundaries with Oguta L.G.A in the East, Owerri west in the West and North and Rivers State in the South. Ten communities make up the Local Government Area: Egbema, Awara Umuapu, Umuagwo Mgbirichi/ Abakuru, Ohuba Assah/ Obitti, Umuokanne, Mmahu and Abuchara. The population by 2013 census is 209,593 projected from 2009 official (FGN 2009) the people are Igbos. The area is located in the rainforest region two distinct seasons abound- rainy and dry. The mean rain fall is 200-25cm (FDLAR1985), with temperature of 26-28c and relative humidity of 80-90 percent (Ugwu and Lekwa, 1988). Agriculture features prominently in the economy. This is rain-fed. Soil fertility maintenance is mostly by natural means, bush fallow system. Crop production encompasses the cultivation of cassava, yam, maize, pineapple, banana, plantain, oil palm and various forms of vegetables. The animals reared include goat, sheep, pig, poultry and most recently grass-cutter. There are also pockets of farmers engaged in aquaculture and apiculture. Data were collected from primary and secondary sources. These

included the use of semi-structured questionnaire supplemented by interview schedule and records from Nigeria agricultural insurance company (NAIC) and agricultural development programme (ADP). The semi-structured questionnaire was validated by experts in agricultural extension and rural sociology. These were tested for reliability using test-re-test method on a group of cassava farmers in Oguta local government area of Imo state to yield a coefficient of 0.68, significant at 5 percent level. The questionnaire and interview schedule were administered between February and June, 2008 by the researchers with the assistance of the extension agents working in the ADP circles covered in the study. The cassava farmers in the L.G.A. composed the study population. They were purposively dichotomized into participants and non participants in the Nigeria agricultural insurance scheme. From the NAIC list of cassava farmers who participated in the scheme in 2007, a total of 45 participants was randomly sampled without recourse to their communities as they were few (<50). Also from the ADP list of cassava farmers, 45 non participants in the scheme were also randomly selected. Thus, a total of 90 cassava farmers; participants and non participants in the scheme made up the sample size. Percentage count and frequency tables were used to describe objectives 1 and 2. while z-test and Logit regression technique were used to analyze objectives 3 and 4 respectively. The z-test statistic expressed as:

$$z = \frac{X_1 - X_2}{\sqrt{\frac{S_1^2 + S_z^2}{n_1 \; n_2}}}$$

where ;

x_1-mean values of the socio-economic variables of participants in NAIS.

X_2- mean values of the socio-economic variables of non participants in the scheme.

S_1^2-variance of participants in the scheme

S_2^2- variance of non participants in the scheme

n_1- number of participants

n_2- number of non participants

X_1-x_6- variables whose differentials were determined

X_1- age (years)

X_2-eductation (years of formal education)

X_3- household size (number of people that feed from the same pot)

X_4- farm size (hectares)

X_5- farming experience (number of years of farming)

X_6- social organization membership status none member =0, ordinary member= 1,regular attendant to meeting =2, financial member=3, committee member =4, executive member=5)

The logit regression technique wasexpressed as follows (pindyck and Rabinfeld, 1981):

$$P1=c/(1+e^{-2}i)$$

Where

P1- probability that an individual farmer I (i=1,2….n) will make a particular choice)

c-constant

z-choice index

$$zi- \beta_0+\beta 1x1j+\beta 2x2j+\ldots\beta_k xkj$$

where ;

x_j,j=2…k are the factors influencing the farmers' decision to participate or not in NAIS.

III. Results and Discussion

a) Socio–economic differentials and non participants in Nigeria agricultural insurance scheme

The z-test results of the socio-economic differentials of participants and non- participants in the Nigerian agricultural insurance scheme (table1) shows that 66.67 percent of the explanatory variables investigated differed significantly between the two groups. Specifically, the variables age education farming experience and social organization membership status differed significantly between the participants and non participants. The mean age of the participants was 46.56 years while that of the non-participants was 50.24. The variance for participants was 5.39 while that of non-participants was 8.03. The z-value was -2438. This implies that the higher the age the lower the participant. Thus the participants were younger than the non-participants, and were more disposed to participating in Nigerian agricultural insurance scheme. This could be explained by their higher venturesomeness, innovativeness and more risk proneness, and insurance is a pool of risk. The result corroborates Nnadi and Akwiwu (2006 a) in which young women farmers utilized proved soil management practices more than the old.

The mean number of years of formal education by participants and non participants were 10.85and respectively. Whereas the variance for the participants was 4.07, that of non–participants was 1.46. The z-value was 6.226. The positively significant difference implies that higher years of formal education predisposed participation in the scheme. This could be explained by better understanding of the scheme, adequate knowledge of the gain and potentialities for greater investment. of course highly educated farmers could access diverse information sources on the scheme, and better clarification for participation. These affirm the excellence of educated farmers in improved technologies adoption (Nnadi and Akwiwu, 2005a; Onu, 2005; Polson and Spencer, 1981)

Farming experience by participants in the scheme had a mean value of 17.41 while that of the non- participants was 21.03 years. With variance of 6.79 and 9.03 for participants and non participants respectively, the z-value was -2.033. The significant but inverse difference shows that non participants had more of experience but this was not an asset for participation in the scheme. Long years of farming experience presuppose increased chronological age of the farmers. The older the more risk averse and the more conservative the farmers become.

The mean value for social organization membership status; of participants in the scheme was 3.72. The variance was 1.28. The non participants had a mean of 0.39 and variance of 0.11. The z- value was 16.165. It implies that the participants had higher commitments to their social organizations and this positively impacted on their embrace of the scheme. Social organization membership besides meeting up with the farmers' social needs exposed farmers to settings where their misconcoceptions and distortions are clarified. The result is in consonance with Mgbada (2002) that the more active the farmers are in their social organizations, the more they are exposed to useful information about innovation and the farm size were not significantly different. These are not important variables for consideration in targeting cassava farmers for participation in the scheme.

b) Reasons for participating in Nigeria agricultural insurance scheme

Diverse reasons were given for participating in the Nigeria agricultural insurance scheme (Table 2). The whole farmer (100%) indicated that their participation was to enable them have access to loan. Agricultural credits were described as an imperative for rural transformation (Ijere, 1981). As a condition for accessing agricultural credit from Nigeria Agriculture Credit and Rural Development Bank (NACRDB), farmers must undertake insurance cover. By compulsion most prospective loan beneficiaries indemnify their farms to increase the confidence of the lending institution. On questioning the farmers for their reasons for settling for the rigors for obtaining loan from Nigeria Agriculture, Co-Operatives and Rural Development Bank (NACRDB), three-quarters of the farmers indicated that the bank render better and friendly services.

Another reason for participating in the scheme by the farmers was to continue to be in business after suffering losses (79%). The third reason on the rank was to protect the farmers from the effect of natural disaster (69.2%). The various underscore adequate understanding of the objectives of the scheme and thus laid credence to the perception of insurance as a social device to provide financial compensation for the effect of misfortune. The fourth reason for participate in the scheme was to expand investment in agriculture (59.0%). The farmers were further interview on why they though insurance could help them expand their agricultural investment. Two thirds of the farmers noted that unindemnified losses could either push farmers to the basic or our business but indemnity portends rays for continuity and opens farmers' eyes to vistas of opportunities hitherto unexplored. To get along with other farmers rank 5th with 25.6 percent. The response does not reflect adequate understanding of the importance of the scheme. This calls concerted extension awareness campaign.

c) Reasons for non participation in the Nigeria agricultural insurance scheme

The reasons for not participating in the Nigeria agricultural insurance scheme ranged from logistics in the scheme (70.7%), 1st in the rank. The inadequate knowledge could be attributing to poor extension campaign or poor geographical spread of NAIS offices for easy access by the farmers. Logistics in the scheme could be explained by the bureaucracy in registration, subsequently verification and processing of document at the event of loss. The cost of premium ranked 2nd with 90.2 percent. The third in the rank, lack of confidence in institution had 85.4 percent. This could be attributed to unsavoury past experience. Fear of the unknown ranked 4th with 78.1 percent. This could be adduced to poor understanding of the scheme and the methods operation. Generally, the reasons for not participating in the scheme are based on ignorance and hence unfounded. Participation could be improved through education campaign.

d) Socio–economic and farm enterprise determinants of cassava farmers' participation in NAIS

The logic regression result of the socio economic and farm enterprise determinant of cassava farmers participation in NAIS (table 4) shows that seven independent explanatory variables (70%) were significant at 0.05 level. The variable included age (X_1) education (X_3) marital status (X_4) farming status (X_6) farming experience (X_7) farm size (X_9) and credit opportunity (X_{10}).

The age of the farmers (X_1) had a coefficient of 0.1847 and T value of 3.3515. The result implies that increasing the magnitude of the farmer's age increased their participation in NAIS. Specifically, each additional year to the age farmers increased the probability of their participation by about 19 percent. Age is therefore a major consideration in designing strategies to increase participation in the scheme. This could be attributed to increased maturity and experience as the farmers are bound to make better informed decisions following increased life encounters over time. More so, increased age is associated with more responsibilities, marriage, caring for children and expanded scope of dependants and insurance could become a source of respite by ensuring continuity in farm engagement, even after

suffering losses. In line with this, age was found to be positively significant to rural women's use of improved crop production technologies in Imo State (Nnadi and Akwiwu 2005b).

Education had a coefficient of 0.1192 with a t-value of 3.722. The result shows that increases number of years of normal education impacted positive on the farmers in NAIS. The result implies that each additional year of formal schooling increased the probability of participating in NAIS by about 12 percent. Education furnished facts exposed farmers to multifarious information sources, polished their reasoning and decision making processes. The result concurred with Agada and Philip (2002) in which education maize farmers participated more in NAIS in Kaduna State, Nigeria.

The status of the farmers (full time or part time0 had a coefficient of 0.1604 and t-value of 2.6081. The positive but significant relationship implies that an additional improvement in farming status, by part time becoming full time farmers, increased the probability of participating in NAIS by 16 percent. Full time farming status could entail that the farm is the monolithic source of revenue to the farmer. Insurance therefore becomes a safe guard for subsistence, especially during losses. Farming experience had 0.0882 and 2.1356 as coefficient and t-value respectively. Increasing the number of years of farming experience thus increased the farmers' participation in NAIS. The result implies that each additional year of experience in farming resulted to about 9 percent increase in the probability of their participation in NAIS. Increased years of farming experience just like increased age could entail several varied encounters in farming which could influence farm decision making. The study of Nnadi and Akwiwu (2006b) also established positive significant relationship between years of farming experience of women and the number of coping strategies against economic marginalization.

The coefficient of farm size was 0.0436 while the t-value was 4.1983. The result implies that each additional hectare of land put into cassava cultivation resulted to 4 percent increase in the probability of participating in NAIS. Large farm size could entail a large farm asset base. This could also mean high level of investment; input, credit technologies, etc insurance therefore becomes an imperative option against unprecedented. Losses. The result of the studies of Nnadi and Akwiwu (2006c) and Nnadi and Akwiwu (2005a) affirmed the importance of farm size in farm decision making.

The coefficient of credit opportunity (0.0843) was positively significant with a t-value of 2.0611. Increased the farmers' participation in NAIS. Specifically, the result implies that additional increase in the number farmers that had access to credit offers opportunity to increase a farmer's capital base and subsequently has investment. The finding agrees with Nnadi and Akwiwu (2006a) in which credit opportunity positively influenced rural women's adoption of proven soil management practices.

However, the variables gender, household size and social organization membership status were not significant related to the farmer's participation in NAIS. They therefore do not determine their participation and as such should be discountenanced in advocacy and designing intervention strategies.

IV. Conclusion

Participants in the Nigeria agricultural insurance scheme differed significantly from non participant in the scheme, in respect of age education, faming experience and social organization membership status. The reasons for participating included being able to acquire loan, to continue in business after suffering losses and expanding investment in agriculture. The reason for non participation included inadequate knowledge about NAIS, cost of insurance and lack of confidence in the institution. The farmers participation in the scheme were determined by their socio-economic and farm enterprise characteristics of age education, marital status, farming experience, farm size and credit opportunity.

Policy implication

Extension education campaign should be embarked upon enlighten non participants in the scheme on the prospect as well as sustain the interest of the participants.

- The socio-economic and farm enterprise characteristics of the farmers should be put into consideration in designing intervention strategies and advocacy for increased participation in NAIS
- Institutional reforms, land and credit should be vigorously pursued to avail more farmers of them for increased participation in the scheme.

References Références Referencias

1. Adekanya, T.O. (1985). Some considerations for Development Technology in Agriculture Paper Presented at the 2nd national conference of farm management association Zaria. 5-7.
2. Aliero, H.M. and Muktar, S. (2012). The Prospects of Micro-Insurance in the Rural Areas of Nigeria. *European Scientific Journal, 8* (3), 66-76.
3. Agada, J.E and Philip D (2002). "A logit analysis of the participation in the Nigerian Agriculture Insurance Scheme by maize growing farmers in Kaduna state". *Asset Journal, 2* (1), 157-163.
4. Brown, W. and Churchill, C. (1999). Micro-Insurance: Providing Insurance to Low Income Households.
5. (1985). The reconnaissance soil survey of Imo State Nigeria.

6. Mgbada, J.U (2002). Elements of agricultural Extension Richfield and Frank law and science.
7. Mordi, O. (1995). "Elements of Insurance'.
8. (1989). Nigeria Agricultural Insurance Company Operational Guidelines.
9. Njoku, J.E and Nzenwa, D (1990). "Loan repayment and its determinants under small holder direct Agricultural loan scheme in Imo State Nigerian". *28* (3), 247-254.
10. Nnadi F.N. and Akwiwu, C.D. (2006a). Adoption of Proven Soil Management Practices by Rural Woman in Imo State,. *Nigeria international journal of national and applied science, 2* (3), 262-267.
11. Nnadi, F.N and Akwiwu, C.D (2006b). Strategies for Overcoming Economic Marginalization Among Rural women in Imo state Nigeria, *International Journal of Natural and Applied Science, 1* (1), 10-16.
12. Nnadi F.N. and Akwiwu, C.D. (2005a). Utilization of improved cassava production technologies by urban farmers in Imo. *Nigeria international journal of natural and applied science, 1* (1), 10-16.
13. Nnadi, F.N. and Akwiwu, Nigeria u, C.D (2005b). Rural women's response to selected crop production technologies in Imo state, Nigeria. *1* (1), 47-54.
14. Nnadi, F.N. and Akwiwu, C.D. (2005c). Adoption poultry production practices by rural women in Imo state. *1* (1), 39-44.
15. Nwajiuba, C.U. (1995). Socio- economic impact of cassava post- harvest technologies in small holders in south eastern Nigeria. *20*, 10-14.
16. Nigeria national population Abuja commission. (2009). *1*.
17. Nnadi, F.N., Chikaire, J., Echetama, J.A., Iheanacho, R.A., Umunnakwe, P.C. and Utazi, C.O. (2013). Agricultural Insurance: A Strategic tool for Climate Change Adaptation. *Agricultural Insurance: A Strategic tool for Climate Change Adaptation., 1* (1), 1-9.
18. Odigboh, E.U. (1985). Mechanization of cassava production and processing a decade of design and development. *university of Nigeria*.
19. Onu, D.O (2005). Analysis of factors influencing farmers adoption of alley farming technology under intensified agriculture in Imo State Nigeria using a qualitative choice model. *29*, 177-187.
20. Pindyck, R and Rubinfield, D. (1981). Economic models and economic forecasts.
21. Polson, R and spencer, D.S.C (1991). The technology adoption process in subsistence agriculture: the case of cassava in southwest Nigeria, *36*, 65-77.
22. Theberge, R.L (1985). Common African pests and diseases of cassava, yam, sweet potato and cocoyam, Ibadan.
23. Ugwu, T.O. and lekwa, G (1988), October). Review of the land and soil resources of Imo state in relation to food production and forecasting proceedings of imo state agro statistics sub- committee seminar on food, forecasting and earth warming, 20-66.
24. Ugwu, B.O. Ajabo, O and Orkwor, G (1989). Cassava research production and utilization in Nigeria in Nweke, 15- 24.
25. Youdeowi, A Ezedinma, F.O.C. and Onazi, O.C (1986). Introduction to tropical agriculture.

Table 1 : z test result of the socio-economic differential between participants and non participants in NAIC

Explanatory variables	Means of participant	Means of non participant	Variance of participants	Variance of non participants	Z value
Age	46.53	50.24	5.39	8.03	-2.438*
Education	10.85	7.88	5.09	1.46	2.226*
Farmers size	8.41	9.59	3.05	4.19	-1.455
Farm size	4.08	3.59	1.68	1.24	1.471
Farming exp.	17.41	21.03	6.79	9.03	-2.033*
Social org. mem.	3.72	0.39	1.28	0.11	16-165*

Status

*significant z value at 0.05 levels sources survey data, 2008

Table 2 : reasons for participating in the Nigeria agricultural insurance scheme

Reasons	F	%	Rank
To continue after suffering losses	31	79.5	2nd
To be able to acquire loan	39	100.0	1st
To expand investment in agriculture	23	59.0	4th
To be protected from the effect of natural disaster	27	69.2	3rd
To get along with other farmer	10	25.6	5th

*multiple responses N=39

Table 3 : Reasons for non participation in NAIS

Reasons	*F	%	Rank
Inadequate knowledge of NAIS	38	92.7	1st
Lack of confidence in the institution	35	85.4	3rd
Logistics in the scheme	29	70.7	5th
Cost of insurance	37	90.2	2nd
Fear of the unknown	32	78.1	4th

*Multiple responses N = 41

Source –fields survey data, 2008

Table 4 : logic regression result of the socio-economic and farm enterprise determinant of farmers' participation in NAIS

Explanatory variables	Logistic coefficient	t-value
Constant	-23.4016	-5.7944
Model chi square	57.0844	
Degree of freedom	49	
Number of cases	80	
Gender	0.0943	1.1542
Age (X_1)	0.1847	3.5315*
Education (X_2)	0.1192	3.7722*
Marital status (X_3)	0.0349	3.2315*
Household size (X_4)	0.0839	1.1541
Farming status (X_5)	0.1608	2.6081*
Farming experience (X_7)	0.0882	2.1356*
Social organization		
Membership (X_8)	0.1903	1.0485
Farm size(X_9)	0.0436	4.1923*
Credit opportunity (X_{10})	0.0843	2.0611*

*significant t-value at 0.05 level