

EVALUATING THE PARTICIPATION LEVEL OF FISH FARMERS IN AGRICULTURAL INSURANCE IN ONDO STATE, NIGERIA

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Abstract

The study assessed the level of awareness and determined the level of participation of fish farmers in Agricultural Insurance Scheme (AIS) with a view to improving on the level of awareness and consequently participation. The study adopted the survey method of research. The study population comprised all the 1,728 registered fish farmers in Ondo State. Only 295 respondents were sampled from the population using the Raosoft sample size calculator. Multi-stage sampling procedure was adopted to distribute the sample population among the Local Government Areas (LGAs). Two Local Governments Areas (LGAs) were purposively selected from each of the four zones based on the prominence in fish farming. Second stage involved random selection of two communities each from the selected LGAs. At the last stage, fish farmers register was used to proportionately distribute the farmers to LGAs. The results showed the mean age of fish farmers to be 44.6 ± 10.1 years and majority (83.4) were married. The mean household size was 5 ± 2 and about 96% was able to read and write. The mean years of fish farming experience was 13.54 ± 11.9 and all of them were smallholders. About 70.5% were aware of AIS but only 15% were under fish policy cover for the last five years. Majority (82.3%) had moderate participation level with only 4.4% with high level of participation. There was strong correlation ($R = 0.759$) between the variables investigated and level of participation. Also three variables age, contact with extension and awareness regressed positively while number of information sources and household size regressed negatively with level of participation. It was concluded that despite the high level of awareness, level of participation was low.

Key words: evaluation, participation level, fish farmers, insurance scheme

INTRODUCTION

Agricultural production faces myriad of risks than most other enterprises [9]. Risks in Agriculture in most parts of the world are certainly not independent of nature. This is because they go beyond all the well-known and researched entrepreneurial hazards and uncertainties of modern world. Nevertheless, two major risks are of concern to the agricultural sector; these are price risk which is caused by potential volatility in prices and production risk resulting from uncertainty about the levels of production that primary producer can achieve from their current activities. It is likely that these major risks will increase in the future- price risk due to liberalization of trade and production risk caused by the effects of climate change [27]. Production risks include the vagaries of nature, inclement weather conditions such as drought,

excessive rains, storms and hurricanes, pests and diseases along with flood and fire outbreaks and these cause heavy losses to farmers. Disasters can often not be prevented from happening but they can, to some extent, be predicted and arrangements can be made to reduce their impact. However, in some cases, disasters cannot be predicted and farmers will have to cope with major losses after the occurrence of the event. [21] and [24] opined that risks in Nigeria have been identified to include natural and environmental, gender, conflict, labour market, life events and macroeconomic risks. In explaining these categories of risk, [10] opined that the major sources of production risks are weather, pests, diseases, interaction of technology with other farm and management characteristics, excessive/insufficient rainfall and extreme temperatures and climate change. According to [5], climate change has serious implications for

global fisheries and aquaculture. Besides the physical and financial drivers, climate is a major driver that enhances the aquaculture sector growth and sustainability. The variability of temperature, air humidity and total rainfall shows negative signs to aquaculture production in ponds system.

Agricultural Insurance, in its widest sense may be defined as the stabilization of income, employment, price and supplies of agricultural products by means of regular and deliberate savings and accumulation of funds in small instalments by many in favourable time periods to defend some or few of the participants in bad time periods [6]. Insurance is simply “a risk management strategy”. Agricultural insurance is especially geared to covering losses from adverse weather and similar events beyond the control of farmers. It is one of the most quoted tools for managing risks associated with farming. Many pilot programmes have been developed over the years, targeting especially small-scale farmers in developing countries, but agricultural insurance remains primarily a business which involves farmers in the developed countries. Insurance spreads risk across the farming industry or the economy or, to the international sphere in the case of international reinsurance. Insurance is sold and bought in a market. The purchasers must perceive that the premiums and expected benefits offer value; the sellers must see opportunity for a positive actuarial outcome, and profit over time. Insurance is not the universal solution to the risk and uncertainties that farmers face. It can only address part of the losses resulting from some perils and is not a substitute for good on-farm risk-management techniques, sound production and farm management practices and investments in technology [13]. Therefore, any nation with a clear vision for boosting its agricultural production must meet the food needs of its populace and the input requirements of its industries must of necessity put in place mechanisms that would reduce these risks and uncertainties to a bearable minimum. The need therefore, for a mechanism that functions specially to keep the farmers in business cannot be over-emphasized. [15] defines insurance as a social

device providing financial compensation for the effects of misfortune, the payment being made from the accumulated contributions of all parties particularly in the scheme. Agricultural insurance scheme serves as securities for banks, as indemnification for financial losses suffered by farmers and those in the agricultural value chain resulting from damage to their products, and also provides funds for servicing such loans. In Nigeria, Agricultural Insurance Scheme was designed to promote agricultural production; provide financial support to farmers in the event of losses arising from natural disasters; increase the flow of agricultural credit from lending institutions to the farmers and minimize the need for emergency assistance provided by the government during periods of agricultural disaster (Nigerian Agricultural Insurance Company [17].

Agricultural Insurance Scheme in Nigeria

The Agricultural Insurance Scheme (AIS) was launched in Nigeria by the Federal Government on the 15th December, 1987 and Nigeria Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL) on June, 2011 as part of governments’ efforts to enhance food production in Nigeria. According to [18], the scheme is immensely beneficial to the farmers and hence the Nation as a whole in so many ways. Some of the benefits include: Assurance of security, where the insured is confident that in case of a loss, NAIC will indemnify them. In addition, is the adoption of technology which is a compulsory major requirement for all the insured to practice. This leads to better yield and improved farm income for the insured farmer. Generation of wealth, the accessibility of greater credit facilities would result in an increase production, thus given rise to increased income for the farmers which in turn, will lead to high farm employment, more wealth generation and general improvement in quality of life of the citizenry. Provision of Extension Services, the insured farmers benefit immensely from technical advisory services which are provided by staff of the corporation in the various areas of agriculture and risk management during monitoring visits to insured farm projects and potential beneficiaries of the scheme. These

extension services are provided free of charge. Furthermore, the personnel involved are highly reliable and tested professionals in their fields which include crop scientists, veterinary surgeons, seasoned insurance experts, soil scientist, etc. This translates to the basic fact that the farmer can save his hard-earned money which he ordinarily would have spent on consultants most of which may turn out to be fakes. Assistance in Agricultural loans recovery, banks whose clients have been covered under the Nigerian Agricultural Insurance Scheme have continued to find it easy to recover loans disbursed thereby leading to more farmers enjoying credit facilities from such repayments. They also provide financial support to farmers in the event of losses arising from natural disasters, increase the flow of agricultural credit from lending institutions to the farmers and minimize or eliminate the need for emergency assistance provided by government during period of agricultural disasters.

More than ever before, insurance cover for Nigerian farmers has become imperative in view of the increased risks they face in the present day. Agricultural economists say that this is particularly so because farmers often sustain losses from a variety of factors, which were totally unforeseen at the onset of each farming season. Experts identify such risks associated with agriculture as floods, vagaries in weather conditions, fire disasters, communal clashes, market failure, price changes, unsteady rainfall pattern, policy changes, land losses as well as pest and disease attacks [22]. [14] opined that Nigerian farmers are increasingly faced with risk and uncertainties which pose serious threat to the success of farming enterprise in Nigeria. [12] stated that fish farming is a high risk business, not only because it is based on biological processes or survival of large numbers of living organisms in captivity but because of its dependence on human skills, efficiency of machines and clemency of the physical forces of nature. [26] and [7] opined that since farmers cannot predict the probability of occurrence of any of these and cannot bear these risks and uncertainties alone, they are faced with the option of transferring or sharing the risks

involved in the day-to-day management of their farms with one or more individuals or firms. Agricultural insurance looks into how risks and uncertainties can be effectively managed to the advantage of the farmers in the present and also in the future. Agricultural insurance is a necessary part of the institutional infrastructure essential for the development of agriculture, which is mainly a high risk enterprise. It also control lending environment for banks in which the agricultural value chain is well structured [8]. Despite the challenges such as extreme climatic conditions, flood, water pollution, lack of adequate technology, fish diseases, problems of preservation, poor marketing, high cost of inputs and inadequate extension contact, confronting fish farming in Nigeria, and Agricultural Insurance Scheme being one of the strategies put in place to mitigate these challenges, the need for this study hinged on the fact that; there is dearth of information on participation of fish farmers in Agricultural Insurance Scheme. The specific objectives of the study are to assess the level of fish farmers' awareness of the Agricultural Insurance Scheme in Ondo State; and determine the level of fish farmers' participation in the scheme.

MATERIALS AND METHODS

The study area

This study was conducted in Ondo State of Nigeria, which is made up of four agricultural zones, three agro-ecological zones, nine administrative zones, and eighteen Local Government Areas (LGAs). Ondo State is geographically located in the Southwestern zone of Nigeria. The State covers a land area of 14,793 square kilometers with its administrative capital at Akure. The State lies between latitudes $5^{\circ} 45'$ and $7^{\circ} 42'$ north of the equator and longitude $4^{\circ} 20'$ and $6^{\circ} 05'$ East of Greenwich Meridian. It is bounded by Ekiti and Kogi States in the north; Edo State in the east; Ogun and Osun States in the west and the Atlantic Ocean in the south. The population of the State in the 2006 census was 3,441,024. Ondo State is located entirely within the tropics. The tropical climate of the State is broadly of two seasons: rainy season (April-

October) and dry season (November - March). The temperature throughout the year ranges between 21°C and 29°C and humidity is relatively high. The annual rainfall varies from 2,000 mm in the southern areas to 1,150mm in the northern areas of the State. The soil is derived from well drained loamy clay with a medium to fine texture. There is a maze of numerous rivers, creeks and lakes in and around Ondo State with very prominent rivers like Owena, Ala, Oluwa, Oni, Awara, Ogbese and Ose. Generally, the land rises from the coastal part of Ilaje, Ese-Odo and Okitipupa areas to highlands and inselbergs to the northern parts of the State [28].

The study population and sample size

The study population comprised all the 1,728 registered fish farmers in Ondo State. The population includes men, women and youths. Only 295 respondents were sampled from the population using the Raosoft sample size calculator at 5% error margin and 95% level of confidence [29]. Multi-stage sampling procedure was adopted to distribute the sample population among the LGAs. Ondo State was divided into four agricultural zones namely; Ondo zone, Owo zone, Ikare zone and Okitipupa zone. At the first stage, two Local Government Areas (LGAs) were purposively selected from each of the four agricultural zones based on their pronounced investment in fish farming. The second stage involved a random selection of two communities from each of the eight selected LGAs making a total of sixteen communities. The last stage was a proportionate distribution of the sampled fish farmers in the sixteen communities. Registered fish farmers were used because they were easy to trace.

Data instrument

Structured and validated interview schedule was used to elicit quantitative data from the respondents. Information collected included respondents' personal and socio-economic characteristics and their membership of associations, level of awareness of agricultural insurance scheme and level of participation in Agricultural Insurance Scheme. Data collected were summarized with descriptive tools such as percentages, mean, standard deviation. Inferential statistical tools such as Chi-square,

correlation and regression analyses were employed to draw inferences.

Measurement of variables

Two types of variable were considered in this study; they were the dependent and independent variables. The dependent variable for this study was level of fish farmer's participation in Agricultural Insurance Scheme in Ondo State. The dependent variable was measured by asking the farmers to indicate their subscription to a set of ten peril cover provided by Agricultural Insurance scheme (AIS). This was measured based on a 5-year participation of the farmers in fish policy and a six point scale of zero to five was used to measure fish farmers' participation in the scheme. Maximum obtainable score was 50 and minimum score was 0.

The mean score (\bar{X}) and the standard deviation (σ) for all the respondents was calculated and categorized as high, moderate and low. The level of participation was determined by finding the range of scores obtained when the standard deviation was added to and subtracted from the mean scores calculated ($\bar{X} \pm \sigma$). High level (values $> \bar{X} + \sigma$), moderate level (values within $\bar{X} \pm \sigma$) while low level (values $< \bar{X} - \sigma$). In case of independent variables, most of them were recorded as obtained from the respondents. For example, age of the respondents was the number of years the respondents had lived on earth. It was recorded as provided. Sex was coded as male 1 and female 0. Experience in fish farming was recorded as provided by the respondents and household size was also recorded as provided by the respondents. Awareness was measured by yes (1) when aware and no (0) when not aware. A relationship will be established between the dependent and independent variables using a regression equation as:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + e_0$$

where:

Y = Dependent variable (level of fish farmers' participation in Agricultural Insurance Scheme)

X₁ = age

X₂ = household size

X_3 = number of sources of information about AIS

X_4 = frequency of contact with extension agent

X_5 = number of years of awareness

X_6 = awareness

a = regression constant

b = regression coefficient

e_0 = error term.

RESULTS AND DISCUSSIONS

Farmers' demographic characteristics

The results in Table 1 show that 33.3 per cent were above 50 years of age, 26.9 per cent were between ages of 41 and 50, 31.7 per cent were between ages of 31 and 40 years, while 8.1 per cent of the respondents were below 31 years of age. The mean age of fish farmers in Ondo State was 44.6 ± 10.1 years. The findings showed that above average (58.6%) of fish farmers in Ondo State were still in their active and productive years of life in which they could still contribute to the socio-economic wellbeing of the society. This age could make them participate in Agricultural Insurance Scheme as young people are ready to take risks. This finding is in line with [20] and [19], who reported that most fish farmers were middle aged, agile and active to withstand the rigors of fish farming and that most of them participate in agricultural insurance. This could be explained by their higher venturesomeness, innovativeness and more risk proneness. Also, about 78 per cent of the respondents were male. The result indicated that there were more men in fish farming than women in the study area. This finding is similar to [1] findings that 80 per cent of fish farmers were men. Since most of the fish farming activities requires time and energy which women might not be able to effectively cope with because of other responsibilities as home keepers. About 94 per cent and 4.7 per cent of the respondents were Christians and Muslims, respectively while very few (1.0%) practiced traditional religion. This implied that Christianity might be the dominant religion in the study area. Religion affiliation could be a useful indicator in identifying and mobilizing fish farmers for meaningful participation in agricultural insurance. This is because farmers could easily

interact with people of their faith and in doing so; they could discuss ideas related to agriculture.

Majority (83.4%) of the respondents were married, while 14.2, 2.0 and 0.3 per cents were single, widowed and separated, respectively. This implied that majority of the respondents were married and were expected to be responsible [16]. Marriage is considered as respected institution where married people are regarded as mature and responsible with divorce being a culturally rare occurrence due to the stigmatization attached to it [11]. Family members have being a source of labour especially in fish farming operations, they could be a source of information and they could even be persuaded to participate in the scheme. About 68 per cent of the respondents had household size of less than 6 members, while 31.5 per cent had size between 6 and 10 members while very few (1.0 percent) had above 10 members. Mean household size was approximately 5 ± 2 people. The result indicated that most of the respondents had household size of less than 6 members. This might be as a result of the economic situation of the country, education and high rate of unemployment leading many people into family planning so as to reduce birth rate. It might also be due to the fact that the traditional orientation of marrying more than a wife at a time and bearing as many children as possible as a sign of wealth is constantly fading away in the study area. A considerable amount of labour could be derived from within the household to provide help on fish farm when needed.

About 96 per cent of the respondents could read and write. Also, about 10.8 per cent of the respondents had less than 7 years of formal education; about 72 per cent had post-secondary school education. This means that majority of the respondents had one form of formal education. This high level of literacy could enhance their participation in NAIS. This finding corroborates [4] that high level of literacy could be regarded as an advantage for the choice of source of information for fish production.

Table 1. Distribution of respondents by demographic characteristics

Demographic characteristics	Frequency	Percentage	N=295
Age			
Below 31	24	8.1	Mean 45 SD= ±10
31-40	92	31.7	
41-50	78	26.9	
Above 50	96	33.1	
Gender			
Male	225	78.0	
Female	65	22.4	
Religion			
Christian	274	94.5	
Islam	13	4.5	
Traditional	3	1.0	
Marital status			
Single	42	14.2	
Married	246	83.4	
Separated	1	0.3	
Widow (er)	6	2.0	
Household size			
Below 6	195	67.2	Mean 5 SD= ±2
6-10	92	31.7	
Above 10	3	1.0	
Level of formal education			
No Formal Education	5	1.7	
Adult Education	19	6.4	
Completed Primary Education	26	8.8	
Uncompleted Secondary Education	7	2.4	
Completed Secondary Education	25	8.5	
Tertiary	213	72.2	
Years of fish farming experience			
Below 11	169	58.3	Mean= 14 years SD=±12
11-20	59	20.3	
21-30	27	9.2	
Above 30	35	11.9	

Source: Field survey, 2015

About 58.6 per cent of the respondents had at most 10 years of fish farming experience, 20.3 percent had between 11 and 20 years of fish farming experience. The mean years of fish farming experience was 13.54±11.91 years. This is in support of the view of [24] that above average (56%) of fish farmers in Ondo State had been into fish farming for over 10 years.

The reasons might be due to new agricultural programmes such as agricultural transformation agenda which might encourage youth to take agriculture and the recent discovery that fish farming is a lucrative enterprise. Also, unemployment rate might make most youth to drift to fish farming.

Some of the farmers, especially those in the riverine area of the State must have started fish farming since their early days. Since about 59 percent of the respondents had more than 10 years of fish farming experience, they would have encountered one or more challenges associated with fish farming and this would prompt them to take agricultural insurance policy which is one of the strategies put in place to cushion these challenges.

Results in Table 2 show that 74.8 percent of the respondents had less than 1 hectare of fish farmland, 14.5 percent had between 1 and 2 hectares of land, 9.0 percent had more than 2 hectares of land used for fish farming. The mean land size used for fish farming by the respondents was 1.32±0.63 hectares. From the field survey carried out, it was further revealed that most of the farmers had more farmland used for other farming enterprise. About 93 per cent of the respondents had less than 11 ponds, 5.1 percent had between 11 and 20 ponds, 2.0 per cent had above 20 ponds located in different sites. The mean number of ponds was 6±4. The small size of fish farms implies that majority of the respondents were smallholder fish farmers. This is in line with [2] and [20] that most of the fish farmers were smallholders. Also [1] revealed that majority (73.3%) of fish farmers in Ondo State had less than 1 ha of fish farm and made use of earthen pond (88.1%).

Majority (70.2%) of the respondents earned below ₦501,000; 18.3 and 6.1 percent earned between ₦501,000 and ₦1,000,000 and ₦1,001,000 and ₦2,000,000, respectively while only 5.4 percent earned above ₦2,000,000. The mean annual income earned by respondents from fish farming was ₦563,850 ± ₦487,530. Results in Table 2 further revealed that 76.3 per cent and 45.8 per cent of the respondents got capital they used for fish farming from personal savings and cooperative societies, respectively. Also, 19.7

per cent, 12.9 per cent and 9.2 per cent got capital from *Esusu*, bank loan and friends and relations, respectively while 1.4 per cent got capital from fadama/MDG. The results showed that few farmers patronize commercial banks for agricultural loan. It is compulsory for those that obtain bank loan to participate in insurance scheme; premium for the insurance is deducted from the loan.

Table 2. Distribution of respondents' income, farm size and cosmopolitanism

Socio-economic characteristics	Frequency	Percentage	Mean
Farm size (ha)			
Below 1	222	17.3	Mean= 1.32 SD= ±0.63
1-2	47	15.9	
Above 2	26	9.0	
Income from fish farming (₦)			
Below ₦ 501,000	207	70.2	Mean= ₦ 563,850 SD= ±₦ 487,530
₦ 501,000 - ₦ 1,000,000	54	18.3	
₦ 1,001,000 – ₦ 1,500,000	7	2.4	
₦ 1,501,000 – ₦ 2,000,000	11	3.7	
> ₦ 2,000,000	16	5.4	
**Source of capital			
Bank loan	38	12.9	
Cooperative	135	45.8	
Personal Savings	225	76.3	
Relations/Friends	27	9.2	
Ajo/Esusu	58	19.7	
Fadama/MDGs	4	1.4	
Frequency of contact with extension agents			
Below 6	244	82.7	
7-12	27	9.2	
Above 12	24	8.1	

Source: Field survey, 2015

Also, 82.7 per cent of the respondents had contact with extension agents at most 6 times within the last one year, 9.2 per cent had contact with extension agents between 7 and 12 times while 8.1 per cent had contact with extension agent more than 12 times within the last one year to discuss issues relating to fish farming. The low extension contacts in Nigeria contribute to factors of food insecurity. Fish farmers would have gotten useful information on Agricultural Insurance Scheme if contacts with extension were regular.

Awareness of Agricultural Insurance Scheme and Sources of Information

Results in Table 3 revealed that 70.5 per cent of the respondents were aware of Agricultural Insurance Scheme (AIS). The finding is contrary to [25] and [3] assertions that most farmers were not aware of AIS. Also the result shows that out of the 70.5 per cent of the respondents that were aware of AIS, only 18.3 per cent heard from their fellow farmers, 48.5 per cent and 24.7 per cent got to know about AIS from electronic media and extension agents, respectively.

Table 3. Distribution of respondents by awareness, period of awareness and source of information about Agricultural Insurance Scheme

Variable	Frequency	Percentage	Mean
Awareness			
Yes	208	70.5	
No	87	29.5	
*Source of information			
Family Members	68	23.1	
Friends	72	24.4	
Fellow Farmers	54	18.3	
Neighbours	59	20	
Local Formal Organization	66	22.4	
Extension Agents	73	24.7	
NAIC Officials	63	21.4	
Print Media	69	23.8	
Electronic Media	143	48.5	
Period of awareness			
<10 years	247	83.7	Mean=3.66 years SD±2.55
10-20 years	44	14.9	
>20 years	4	1.4	

** Multiple responses

Source: Field survey, 2015

About 23.8 per cent and 24.4 per cent heard from print media and friends, respectively. This implies that the major source of information to the respondents was electronic media. This might be due to the fact that electronic media transmission is air-borne and therefore far reaching since majority of the farmers were in possession of transistor radio powered with batteries in case there is no electricity within their vicinity. In addition, most of the farmers in the study area were educated and might likely have access to internet facilities through their mobile phones.

About 83.7 percent of the respondents only got to know about AIS less than 10 years ago and very few, 1.4 percent knew about AIS more than 20 years ago. The mean year of awareness was 3.66 ± 2.55 years.

Awareness of the procedures of Agricultural Insurance Scheme

Results from Table 4 revealed that about average (51.2%) of the respondents heard about collection of proposal form from NAIC based on projects to be insured, 33.6 per cent were not aware while 15.3 per cent experienced it. Also, very few (15.3%) of the respondents experienced that NAIC educates or enlightens their client on how to complete the form and also the terms and conditions of the policies whereas, 38.6 per cent and 46.1 per cent of the respondents were not aware and had

heard about it, respectively. As regards computation of appropriate premiums based on the estimated cost of production or sum insured of the project, only 15.3 per cent experienced it, 51.2 heard about it while 33.6 per cent were not aware of it. Also, equal percentage (38.6%) of the respondents were not aware of issuance of debit note to facilitate premium payment and issuance of certificate of provisional insurance cover as a proof of OFFER of provisional cover, 46.1 per cent heard about it while 15.3 per cent experienced both procedures. About 38.6 per cent of the respondents were not aware of insurance policy documents for the insured's use and documentation, 46.1 per cent and 15.3 per cent heard about and experienced it, respectively.

Table 4. Distribution of respondents by awareness of the procedures of AIS

	Not Aware F (%)	Heard about F (%)	Experienced F (%)
FOR INSURANCE COVER:			
Collection of proposal form From NAIC based on projects to be insured.	99(33.6)	151(51.2)	151(51.2)
Education or enlightenment on how to complete the form and also the terms and conditions of the policies.	114(38.6)	136(46.1)	45(15.3)
Computation of appropriate premiums based on the estimated cost of production or sum insured of the project.	99(33.6)	151(51.2)	151(51.2)
Issuance of debit note to facilitate premium payment.	114(38.6)	114(38.6)	45(15.3)
Issuance of Certificate of Provisional Insurance Cover (CPIC) as a proof of offer of provisional cover.	114(38.6)	136(46.1)	45(15.3)
Issuance of policy document for the insured's use and documentation.	114(38.6)	136(46.1)	45(15.3)
FOR CLAIM SETTLEMENT:			
NOTIFICATION:			
Sending of E-mail to headclaimre@naic.com.ng or notification either by insured or their agent through telephone or through the nearest NAIC Branch Managers.	98(33.2)	152(51.5)	45(15.3)
CLAIM INSPECTION:			
On receipt of notice of loss, the claim officer carrying out an on the spot inspection of the reported loss in the presence of the insured/bank officials to have first-hand information and details of the loss.	99(33.6)	151(51.2)	45(15.3)
CLAIM DOCUMENTATION:			
Completion of claim form and submission of other supporting documents required by the client.	99(33.6)	151(51.2)	45(15.3)
Time within which claim is adjusted and offer made.	114(38.6)	136(46.1)	45(15.3)

Source: Field survey, 2015

Furthermore, only 15.3 per cent of the respondents notified loss by sending of e-mail or notification either by insured or their agents through telephone or through the nearest NAIC branch managers whereas 51.5 per cent and 33.2 per cent of the respondents heard about it and were not aware of it, respectively.

Also, equal number (15.3 %) of respondents experienced claim inspection and claim documentation by completion of claim form and submission of other supporting documents required by the client to NAIC officials. Lastly, just 61.4 per cent of the respondents were

conversant with the time within which claim was adjusted and offer made.

Level of awareness of Agricultural Insurance Scheme

Level of awareness of AIS was measured based on farmers' awareness of certain procedures for Agricultural Insurance cover and claims settlement discussed above.

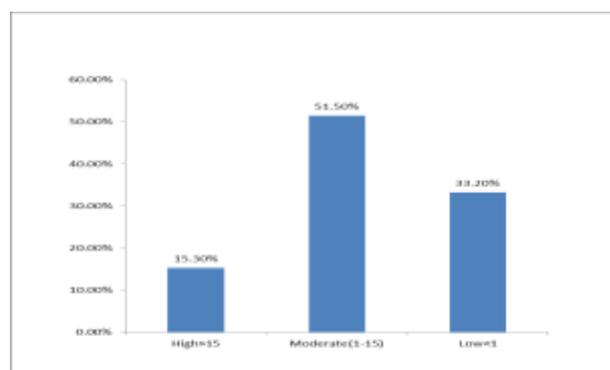


Fig.1. Level of awareness of AIS
 Source: Field survey, 2015

Results from Figure 1 revealed that about average (51.5%) of the respondents had

moderate level of awareness, 15.3 per cent had high level of awareness, while 33.2 per cent low level of awareness.

The implication of this finding is that majority of the respondents had a moderate level of awareness of AIS, although most of the respondents had heard about the scheme but they did not know the nitty-gritty of Agricultural Insurance Scheme.

Farmers' participation in Agricultural Insurance Scheme

The study considered participation in Agricultural Insurance Scheme/ policies for a period of 5 years that is, from 2011 to 2015 when data were collected.

Results in Table 5 showed that only 15 per cent of the respondents subscribed to fish policy. This implies that very few (15%) of the respondents were under fish policy cover for the last 5 years.

Table 5. Distribution of respondents by participation in Agricultural Insurance Scheme

Fish policy cover	No participation (number of times within the last five years)			Participation (number of times within the last five years)		
	0	1	2	3	4	5
Outbreak of diseases	251 (85.1)	19 (6.4)	11 (3.7)	7 (2.4)	5 (1.7)	3 (1.0)
Outbreak of pests	252 (85.4)	18 (6.1)	10 (3.4)	7 (2.4)	5 (1.7)	3 (1.0)
Drought/dryness of pond	268 (95.9)	12 (4.1)	6 (2.0)	4 (1.4)	3 (1.0)	2 (0.7)
Lightning/thunderstorm	283 (95.9)	9 (3.1)	-	-	1 (0.3)	2 (0.7)
Heavy rainfall/flood	260 (88.1)	17 (5.8)	8 (2.7)	5 (1.7)	3 (1.0)	2 (0.7)
Storm/wind	285 (96.6)	6 (2.0)	3 (1.0)	-	-	1 (0.3)
Pilfering/theft	252 (85.4)	18 (6.1)	10 (3.4)	7 (2.4)	5 (1.7)	3 (1.0)
Fire incidence	275 (93.2)	18 (6.1)	3 (1.0)	2 (0.7)	3 (1.0)	2 (0.7)
Death of fishes	252 (85.4)	18 (6.1)	10 (3.4)	7 (2.4)	5 (1.7)	3 (1.0)
Collapse of fishpond dyke	255 (86.4)	18 (6.1)	10 (3.4)	6 (2.0)	4 (1.4)	2 (0.7)

Source: Field survey, 2015

The table showed that fish farmers' subscription to insurance cover was found to be high in six out of ten policy cover for the first year, 2011 and these were; outbreak of diseases (6.4%), outbreak of pests (6.1%), collapse of fish pond dyke (6.1%), death of fishes (6.1%),

theft (6.1%), and heavy rainfall or flood (5.8%). Also, subscription of fish farmers were also found to be high in outbreak of diseases (3.7%), outbreak of pests (3.4%), death of fishes (3.4%), collapse of fish pond (3.4%) and theft (3.4%) for the second year, 2012. It was

further revealed that just 2.4 per cent of the respondents took cover under outbreak of pest, theft and death of fishes for only three years, 2011 – 2013, while 1.7 per cent took cover for outbreak of pest and diseases, theft and death of fishes for four years. Lastly, very few (1.0%) of the respondents took policy cover under outbreak of pests, theft and death of fishes for the fifth year.

The results revealed that the percentage of the participants in all the fish policy was getting reduced since 2011 till 2015 when the data were collected.

This could be that the respondents have acquired enough knowledge and skill from the experiences in the enterprise as to skip the policy the following years after the first year of the policy.

This is to say that when the respondents have acquired the skill and knowledge to guide against an incidence, they would thrust that the risk would be maximally reduced, thus bear the risk themselves.

Level of farmers' participation in Agricultural Insurance Scheme

Results in Figure 2 further revealed the categorization of participants by their participation in NAIS.

Majority (82.3 %) of the respondents had moderate participation level, only 4.4 per cent of the respondents had low participation level while about 13.3 per cent had high participation level. This implies that NAIC officials and extension agents still need to improve on enlightening fish farmers to participate in the policies since only about 15 per cent of them participated in the scheme.

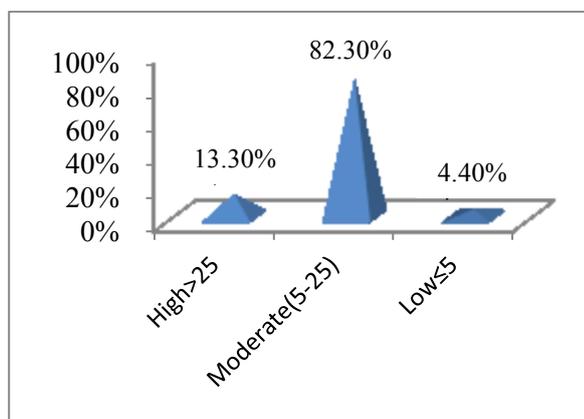


Fig. 2. Level of farmers' participation in Agricultural Insurance Scheme.

Source: Field survey, 2015

Result of multiple regression analysis

Results in Table 6 showed that of all the variables subjected to multiple regressions, only six were found to be significant predictors. These variables were age, source of information, household size, frequency of contact with extension agent, period of awareness and awareness. The R and R² values of 0.759 and 0.576, respectively indicated that the selected variables had strong correlation on the level of fish farmers' participation in AIS; R² value was 0.576 which means 57.6 per cent change in the dependent variable were caused by the variance of the independent variables mentioned. The F-value was 19.967 which mean that the variables explained by the regression model were not due to chance. Age (b=0.141; p ≤ 0.05), this shows that the more the age the more the level of participation in AIS. This could be linked with the experience of the fish farmers, the experienced ones would want to remain in business, thus look for every avenue to remain in business. Frequency of contact with extension agent (b=0.092; p ≤ 0.05), this shows that the more the extension contact, the better the level of participation in AIS. Numbers of years of awareness (b=0.329; p ≤ 0.01) and awareness of AIS (b= 0.582; p ≤ 0.01) were significant and positively contributed to the level of fish farmers' participation in AIS. The better the level of awareness, the better the participation in AIS. While number of sources of information (b= -0.251; p ≤ 0.01) and household size (b= -0.160; p ≤ 0.01) were significant and negatively contributed to fish farmers' participation in AIS. This implies the larger the household size, the lesser the participation in AIS which may be due to the fact that the bigger the household size, the bigger the responsibility (most especially financial responsibility) that might be drifting the respondents away from participating in the scheme. Since the scheme would also draw money from the household, thus they would want to reduce their spending. These six variables are crucial in explaining fish farmers' participation in Agricultural Insurance Scheme (AIS). This implies that anytime level of fish farmers' participation in AIS would want to be determined, these six variables should be carefully considered.

Considering the magnitude of regression for each of the significant variable, a relationship is thus formed from the equation

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + e_0$$

$$Y = 1.909 + 0.141(0.042) - 0.160 (0.155) - 0.251(0.118) + 0.092 (0.056) + 0.329(0.081) + 0.582 (0.056)$$

Table 6. Regression analysis

Model	B	β	T	p-value
Constant	-4.693		-2.459	0.015
Attitude	-0.005	-0.019	-0.343	0.732
Number of sources of information	-0.606	-0.251**	-5.151	0.000
Household size	-0.427	-0.160**	-0.160**	0.006
Farm size in Hectares	0.038	0.010	0.213	0.831
Years in fish Farming	0.053	0.093	1.751	0.081
Number of years spent in school	0.047	0.035	0.738	0.461
Age of respondents	0.094	0.141*	2.238	0.026
Income from fish farming	2.932E-7	0.044	0.819	0.413
Frequency of contact with extension agent	0.116	0.092*	2.075	0.039
Income from other farming activities	2.706E-6	0.051	1.181	0.239
Income from other occupation	7.368E-7	0.047	0.901	0.369
Number of ponds	-0.097	-0.050	-1.081	0.281
Years of awareness	0.483	0.329**	5.945	0.000
Frequency of travel	0.068	0.024	0.539	0.591
Awareness	0.604	0.582**	10.833	0.000

Source; Field survey, 2015

CONCLUSIONS

In conclusion, the level of participation in Agricultural Insurance Scheme (AIS) in Ondo State was still very low despite the claim by a good percentage of the fish farmers that they were aware of AIS.

It is therefore recommended that policy makers should consider the significant variables such as age, sources of information, household size, awareness and contact with the extension agents when planning for participation in AIS. It is also necessary to investigate into the factors that hinder participation of fish farmers in AIS despite high level of awareness.

Agricultural Insurance Corporation should indemnify insured farmers whenever there is disaster.

Government, Agricultural Insurance Corporation and extension agency should improve on awareness creation.

REFERENCES

[1] Adebo, G. M., Ayelari T. A., 2011, Climate change and vulnerability of fish farmers in Southwestern Nigeria. African Journal of Agricultural Research, Vol. 6(18), pp. 4230-4238, Available online at

<http://www.academicjournals.org/AJAR>. DOI: 10.5897/AJAR10.948, Accessed on April 24th, 2013

[2] Adesoji, S. A., 2009, Assessment of Fish Farming Management Practices in Osun State, Nigeria, An Unpublished Ph.D. thesis, Department of Agricultural Extension and Rural Sociology. Obafemi Awolowo University, Ife-Ife, Nigeria.

[3] Ajayi, A. O., Lawal, B. O., 2014, Farmers' awareness and perception of agricultural insurance in Oyo State, Nigeria. Spanish Journal of Rural Development, 5 (1): 47-58.

[4] Alfred, S. D. Y., Fagbenro, O. A., 2015, Perception Of Tilapia Farmers On Information Sources in the Coastal Region Of Ondo State, Nigeria, 6 pages, <https://cals.arizona.edu/azaqua/ista/.../Fagbenro/perception.d...>, Accessed on 3rd July, 2015

[5] Aphunu, A., Nwabeze, G. O., 2012, Fish Farmers' Perception of Climate change impact on fish production in Delta State, Nigeria. Journal of Agricultural Extension Vol. 16 (2):1-13.

[6] Arene, C. J., 2005, The Demand for and supply of Agricultural Insurance: Conceptual, Analytical and Policy Issues and Approaches. The Agricultural Economist Magazine. An annual Publication of Department of Agricultural Economics, University of Nigeria, Nsukka. 2005:16-22

[7] Eleri, O. E., Uduka, I. K., Akuto, N., Onuvae, P., Anwara, O., 2012, Towards a Climate-based Agricultural Insurance Reform in Nigeria. Presented at the Workshop on Legal and Regulatory Frameworks for Agricultural Insurance Reform in Nigeria-Protecting Nigeria's Farmers from Climate Change Kano Hall, Transcorp Hilton Hotel, February 27, 2012. pp. 1-53

- [8] Emmanuel, K., 2007, Cashing in on the Advantages of the Nigerian Insurance Agricultural Corporation. <http://www.ngex.com/news/public/article.php?ArticleID=236>, Retrieved on the 24th April 2012.
- [9] Epetimehin, Festus M. 2010, Agricultural Insurance In Nigeria And Its Economic Impact. Joseph Ayo Babalola University Ikeji Arakeji. Also Available at SSRN: <http://ssrn.com/abstract=1602926> or <http://dx.doi.org/10.2139/ssrn.1602926>, Accessed on August 29th, 2014
- [10] European Commission, 2001, Risk management tools for EU agriculture, with a special focus on insurance. Working Document, Directorate of General Agriculture. [on line]. Available at: http://europa.eu/agriculture/public/insurance/text_en.pdf (10/06/2011)
- [11] Fadipe, N. A., 1970, The sociology of the Yoruba, Ibadan University Press, pp 65-92.
- [12] Fagbenro, O. A, Akinbulumo, M. O, Ojo, S. O., 2004, Tilapia: Fish for Aquaculture in Nigeria: Past Experience Present Situation and Future Outlook. World Aquaculture 35: 23-28
- [13] Food and Agriculture Organization 2013, available at: <http://www.fao.org/tc/tca/work05/nigeriappt.pdf>, Accessed on August 29th, 2014
- [14] Farayola, C.O., Adedeji, I. A., Popoola, P. O., Amao, S. A., 2013, Determinants of Participation of Small Scale Commercial Poultry Farmers in Agricultural Insurance Scheme in Kwara State, Nigeria. World Journal of Agricultural Research 1(5): 96-100.
- [15] Hansel, D. S., 1998, The elements of insurance. 4th edition, M & E Hand books: Account and finance, first published in 1970.
- [16] Jibowo, G., 1999, Essentials of rural sociology, Gbemi Sodipo Press Ltd., Abeokuta, Nigeria.
- [17] Nigerian Agricultural Company (NAIC) Annual bulletin. 2007: 1-52
- [18] NAIC, 2013, Operational guidelines for Nigerian Agricultural Insurance Corporation.
- [19] Nnadi, F. N., Nnadi, C. D., Chikaire, J., Ummunakwe, P. C., Ihenacho, R. A., 2013, Analysis of Rural Cassava Farmers' Participation in the Nigeria Agricultural Insurance Scheme in Imo State, Nigeria Global Journal of Science Frontier Research Agriculture and Veterinary, 13(11) Version 1.0., pp.1-8.
- [20] Okunlola, J. O., Oludare, A. O., Akinwalere, B. O., 2011, Adoption of new technologies by fish farmers in Akure, Ondo state, Nigeria. Journal of Agricultural Technology 7(6): 1539 -1548
- [21] Okunmadewa, F., 2003, Risk, vulnerability in agriculture: concept and context. A paper presented at a staff Seminar, Department of Agricultural Economics, University of Ibadan. Nigeria.
- [22] Oluyole, F., 2011, Insurance cover as viable security for Nigerian farmers; NAN Features/Vol. 5/No. 184/2011 (Aug. 29)
- [23] Ondo State Government (2015): Official website of Ondo State Government <https://www.ondostate.gov.ng/new/overview.php>; Accessed on 30th June, 2015
- [24] Oni, O. A., 2008, Farming households' vulnerability to risk in the northern region of Oyo State, Nigeria. Journal of Social Science 17 (3): 201-210
- [25] Oyinbo, O., Abdulmalik, R. O., Sami, R. A., 2013, Determinants of Crop Farmers participation in Agricultural Insurance in the Federal Capital Territory, Abuja, Nigeria. Greener Journal of Agricultural Sciences, Vol. 2 (3): 021-026.
- [26] Patrick, C. A., 2010, Poultry Farmers' Response to Agricultural Insurance in Delta State, Nigeria, Journal of Agricultural Sciences 1(1): 43-47
- [27] Ramiro, I., 2009, Premier Series on Insurance. Issue 12, November 2009.
- [28] United Nations Fund and Population Activities, 2015. www.unfpa.org, accessed on June 2nd, 2015
- [29] www.raosoft.com. Sample Size Calculator by Raosoft. Accessed on August 29th, 2015 .