



*Original Research Article*

# Informal insurance practices in low income farmer communities: Odogbolu case study (Ogun State, Nigeria)

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This study analyzed informal insurance practices in low income farmer communities, a case study of Odogbolu Local Government Area of Ogun state, Nigeria. To give effect to the study, eighty farmers were randomly sampled from the study area. Data collected through structured questionnaires and interview schedules were analyzed using frequency distribution and Pearson correlation techniques. Results showed a positive correlation between number of sources of risks and uncertainties perceived by farmers and strategies employed to prevent their effects. The gross margin of the respondents showed that farmers who cultivated more than one crop, and reared one poultry or small ruminant animal have more income than those who do not. This research work also showed that rural farmers used different informal insurance measures like diversification of crop and livestock enterprises, contract farming, keeping buffer stock, savings, land fragmentation and others to manage various risks that they routinely face. Out of the ten (10) informal insurance measures studied, diversification identified by the respondents to be the most practiced among the farmers while contract farming is the least used by the respondents. Recommendations derived from the study include encouraging farmers to adopt the most profitable farming systems and informal insurance measures to help them have a stable income.

**Key words:** diversification, management, practiced, systems

## INTRODUCTION

### Background information

Many low-income countries, from Sub-Saharan Africa to Southeast Asia, have suffered major natural disasters and political upheavals through the 1990s. These events remind observers about what is hidden in official poverty statistics: that the condition of poverty is linked closely to vulnerability. Many agrarian households are exposed regularly to risks from poor weather, illness, political instability, and economic mismanagement. Concern with vulnerability may be both intrinsic and tied to implications for income generation, as well as longer-term consequences on the nutrition, health, and schooling of children (Rose, 1995; Jacoby and Skoufias, 1997). Fear of risk can lead agrarian households to forego potentially valuable new technologies and profitable production choices. Rosenzweig

and Hans (1993), for example, use data from rural South India to show that an increase in risk leads to reductions in farm profits by 35% for the poorest quarter of households, while the wealthiest (and least vulnerable) farmers are virtually unaffected. Vulnerable households may also spiral downward into ongoing poverty following adverse economic or climatic shocks, as productive assets are depleted to protect consumption levels. Addressing risk can thus be an important complement to redistributive efforts and anti-poverty strategies focused on increasing economic growth and employment. Yet, even with holes in public safety nets and private insurance markets, poor households are not completely exposed to risk. Most have developed coping strategies to deal with the harshest set back. The

bulk of mechanisms are provided neither by the market nor the state but instead are “informal insurance,” arising between individuals and communities on a personalized basis. Examples include drawing down savings, engaging in reciprocal need-based gift exchange, selling physical assets, and diversifying crops and income-generating activities (Mauss, 1967).

Agriculture is very much vulnerable to the unpredictability of nature (Jonathan, 1999). With agricultural production representing the major source of income of many resource constrained Ogun state farmers, the impact of nature and other agricultural risk cannot be taken lightly. Other agribusinesses and commercial farms that operate with higher capital and better technology on better lands in Ogun state are also not spared from the same risks. The need to safeguard the interests and investments of local farmers and industry players in this region is therefore of paramount importance. Maintaining an increasing flow of income to rural farmers is a challenge to success of poverty alleviation programs in developing economies, due to risks and uncertainties that characterize agricultural activities. Agricultural activities are inherently risky, and smoothing consumption across years or seasons is a significant challenge for agrarian households in developing countries. Farmers and entrepreneurs in rural; agrarian economies therefore should have high demand for credit and insurance services, but the option to purchase such services as credit and insurance facilities often does not exist (Rosenzweig, 1988).

Alderman and Christina (1994) were of the opinion that most households in developing countries including Nigeria deals with economic hardships through informal insurance arrangements arising between individuals and communities on a personalized basis, rather than through markets or states. Examples include drawing down savings, engaging in reciprocal gift exchange and diversifying income-generating activities. These mechanisms can be highly effective in the right circumstances, but most recent studies show that informal insurance arrangements are often weak. In particular, poorer households in this area appear to have substantial difficulties coping even with localized, idiosyncratic risks.

In the absence of availability or access to formal insurance mechanisms in Odogbolu LGA, Ogun state, the resource poor farmers seek to manage risks through various informal strategies. They may choose to diversify their crops, store grain, engage in informal savings and credit, favour traditional techniques over modern technology and enter into share-cropping arrangements. Informal insurance is far from perfect as vulnerable groups are faced with varied risks on a recurring basis. It provides only a partial coverage in case of systemic losses, leaving poor producers vulnerable to extreme poverty, malnutrition and also dampens long term agricultural growth. There also seems to be a tradeoff between market based risk management solutions and public or State sponsored schemes. (Institute for Financial Management and Research (IFMRCIRM, 2008).

Haddad and Manfred (1996) in their study “*How Can Safety Nets do More with Less*”, warns that some public policies may do little more than crowd out these informal mechanisms, but most evidence on the extent of informal insurance show that these mechanisms are in fact typically weak. Evidence emerging from regions as diverse as rural India, China, and sub-Saharan Africa suggests that households are exposed to considerable risk from adverse shocks – even idiosyncratic shocks that do not simultaneously affect their neighbors. The concern with crowding out is also diminished by the growing awareness that informal insurance can carry heavy economic and social costs. Even if informal mechanisms are effective in reducing vulnerability, they can retard economic growth and social mobility. Thus, even where informal insurance is well-developed, public actions that displace informal mechanisms can yield net benefits. This study thus tries to evaluate farming systems and informal insurance measures used by farmers for optimum farm income in Odogbolu local government area of Ogun state, Nigeria.

### **Problem statements**

Formal insurance is not fully accepted and adopted by rural farmers because of the cost/premium which needs rural farmers to use a portfolio of risk coping strategies to insure their household income. These measures are used as production practices by farmers. This is the reason why it is difficult to get farmers that do not use at least one informal insurance measure. Therefore, the need to thoroughly examine the risks that occur in agricultural productions and the imitative and coping strategies used by farmers to manage them in their local production so as to reduce their vulnerability to poverty cannot be over emphasized. These risks and the effectiveness of informal insurance measures to improve household income have not been subjected to empirical scrutiny, hence this study intends take up this issues and also encourage other researchers to carryout empirical study on the use of informal insurance measures as a risk management strategy by rural farmers in Odo Local Government area of Ogun state.

### **Objective of the study**

The broad objective of the study is to analyze informal insurance practices used in low income farmer communities as well as examine the degree of relationship between informal insurance and risk management measures in Odogbolu Local Government Area, Ogun State.

### **METHODOLOGY**

The study area is Odogbolu Local Government Area and is strategically located on a large expanse of land of about 640sq.km and it shares boundaries on its northern fringes with Ijebu-North Local Government, in the east with Ijebu-Ode Local Government, in the west with Ikenne Local

**Table 1.** Distribution of Respondents on their experience of losses on Farm income

Losses on Farm income	Frequency	Percent
Never experienced losses	20	25.0
Have Experienced losses	60	75.0
Total	80	100.0

Source: Field Survey, 2010.

**Table 2.** Ranking of Risks as Perceived by the Respondents

Variables Associated with Risk	Frequency	Percentage
Production	46	32.2
Price	44	30.8
Asset	31	21.7
Personal	18	12.6
Financial	6	4.2
Institutional	2	1.4
Others	2	1.4
Total	143*	100

\*Multiple Responses

Source: Field Survey, 2010.

Government and in the south with Epe Local Government in Lagos State. It is comprised of 150 towns and villages. The people in this area are mainly agrarian, engaged in farming, hunting, fishing, lumbering and handicraft.

### Sampling procedure

The study was carried out in Odogbolu Local government area of Ogun State, Nigeria. The State was chosen because of its location in the rainforest region and its suitability as a low-income community. A total of eighty (80) questionnaire were distributed to low-income farmers in this area utilizing a two-stage sampling procedure. The first stage involved a random selection of five (5) communities in the area while the second stage involved a random selection of sixteen (16) farmers from each of the communities using one or more of the informal insurance practices identified in the study.

### Data collection

Data from this study were obtained solely from primary source, which include the use of questionnaire and oral interview. These questionnaires were administered in person due to the farmers. The questionnaire schedule provided information on socio-economic characteristics of low-income farmers, forms of informal insurance measures used, various sources of risk to agricultural products which include nature, social and economic risks.

Data from 80 respondents were used for the analysis. Using structured questionnaires, data used included identification and description of common informal insurance measures, determination of cost and returns to

selected enterprise embarked upon by farmers, the relationship between informal insurance measures and risk management and problems and constraints associated with the use of informal insurance measures. Based on the literature, farmers were made to respond to some closed-ended options on questions relating to sources of risk in their respective areas.

### Data Analysis

To analyze, identify and determine the common informal insurance practices by rural farmers, analytical tools that were used are mainly descriptive statistics such as mean, frequency, pie charts, percentages, Simple Pearson Correlation amongst others.

## RESULTS AND DISCUSSIONS

### Risk management and use of informal insurance measures by the respondents

There are various risks to which rural farmers are exposed. The perception of risks among low income farmers varies from one farmer to another and from place to place. Above are Tables 1 and 2 showing the distribution of respondents who have experienced losses on farm income and those that have not as well as the distribution of respondents on the ranking of risks respectively.

Out of the eighty (80) respondents, majority of the respondents (32.2%) perceived production / yield risks as the risk they were highly exposed to. Such yield / productivity risks were often related to weather (excessive

**Table 3.** Use of Formal Insurance

Formal Insurance	Frequency	Percent
Have not used	29	36.3
Have used	51	63.8
Total	80	100

Source: Field Survey, 2010

**Table 4.** Use of Informal Insurance Measures by Respondents

Informal Insurance Measures	Frequency	Percentage
Diversification	54	24.6
Contract farming	4	1.8
Buffer Stock	8	3.6
Timeliness of Operations	41	18.6
Land Management Practices	47	21.4
Financing farm activities	9	4.1
Improving Information Systems	8	3.6
Forward and backward production	20	9.1
Flexibility and savings	18	8.2
Non-farm	11	5
Total	220*	100

\*Multiple Responses

Source: Field Survey, 2010.

or insufficient rainfall, extreme temperatures) and plants and animal diseases. This was in line with their production programme as most of the respondents were involved in different crop production. After production/yield risks, price risks was the second ranked by the respondents. This was attributed to high costs of input (like yam) as most of them grew yam and low costs of output especially when most of the farmers harvest at the same time, prices of output fall. Institutional risk was least perceived among the respondents not because government policies were mainly targeted at rural farmers but because most of their activities were usually carried out on small scale which made them not to properly benefits from various governmental policies and incentives for farmers. The perception of risks among farmers varies from place to place. For instance, in a survey on risk perception in the Dutch livestock sector carried out in 1997, price risk was identified as the major source of risk, followed by personal and institutional risk. Financial risks were perceived as the least important (Meuwissen et al., 1999). For the U.S., similar survey in 1996 showed that risk perception differed depending on the production programme. Wheat, corn, and soybeans producers, for example, were most concerned about production/yield risks and price risks. Whereas livestock farmers perceived institutional risks as particularly high (USDA, 1999). An analysis of the above statements shows that a risk perception varies from place to place and depends on production programme of farmers. From the results obtained, price risk and production /yield risk among others coincide with the U.S. case as the highly

perceived risks among farmers. The respondents perceived price risk most likewise in the Dutch Survey cited above.

#### Use of informal insurance measures

On management of risks by the respondents in the study area, only 51 of the respondents sampled have engaged the services of formal insurance while the rest (29) have never. All the respondents use more than two informal insurance measures. Above is Table 3 showing the distributions of farmers on the use of formal insurance measures as well as the distribution of the informal insurance measures as used by these farmers respectively.

The multiple responses from the respondents imply that no farmer uses just one informal insurance measure. From the survey conducted, those respondents who have engaged the services of formal insurance also said they use informal insurance measures during the period they used formal insurance. From the Table 4 above, diversification is a form of informal insurance measure used by majority (24.6%) of the respondents. These farmers either diversify within the same (crop, livestock and non-farm activities) but this does not imply that diversification is the best informal insurance measure. This is supported by Mishra and El-Osta (2002) whose work on diversification showed that it has a limited effect on the rankings of risk management strategies although it emphasized the ability of diversification to reduce risk favourably. The least practiced form of insurance measures among the respondents is contracting farming represented by only

**Table 5.** The Distribution of the Number of Enterprises and Informal Measures Used among the Respondents

Number of Crops and Livestock Enterprises of Respondents	Frequency	Percentage
1 crop & no livestock	0	0
1 crop & 1 livestock	17	21.3
2 crop & no livestock	6	7.5
2 crops & 1 livestock	38	47.5
2 crops & 2 livestock	0	0
3 crops & no livestock	3	3.8
3 crops & 1 livestock	14	17.5
0 crop & 1 livestock	2	2.5
Total	80	100

Source: Field Survey, 2010.

**Table 6.** Correlation between Informal Insurance Measures and Risk Management

Variables	Value
r (coefficient of correlation)	0.60
t*	18.04
T	2.02

Source: Field survey 2010.

1.8% of the respondents. This is attributed to the fact that the farmers are skeptical about being exploited by the contracting forms. The varying numbers of respondents using other forms of informal insurance measures is dependent on their choices, risk perception and the degree to which they feel the measure they use can manage such risk for them.

#### **Diversification of crop and livestock enterprises among the respondents and number of informal insurance measures used**

Diversification of enterprises is a common practice among rural farmers. The farmers engaged in different crop and livestock enterprises for managing risks. The use of informal insurance measures in a diversified production programme among rural farmers is to reduce risk and fluctuations in income. The Table 5 above shows the distribution of the respondents with the number of informal insurance measures they use for each group of diversified enterprise.

From the table above, farmers grew all the crops and there was no any farmer who kept more than two kinds of animal. On the whole, sixty-three respondents grew more than one crop. The table shows that all the respondents use informal insurance measures. Thirty-eight (38) respondents grow 2 crops and 1 livestock while 14 (17.5%) grew 3crops, and also keep 1livestock. A close examination of the table showed that the increase in the number of enterprise by the respondents was not related to the number of informal insurance measures they used. This was explained by the case of the respondent who had one enterprise but used more (5) informal insurance measures

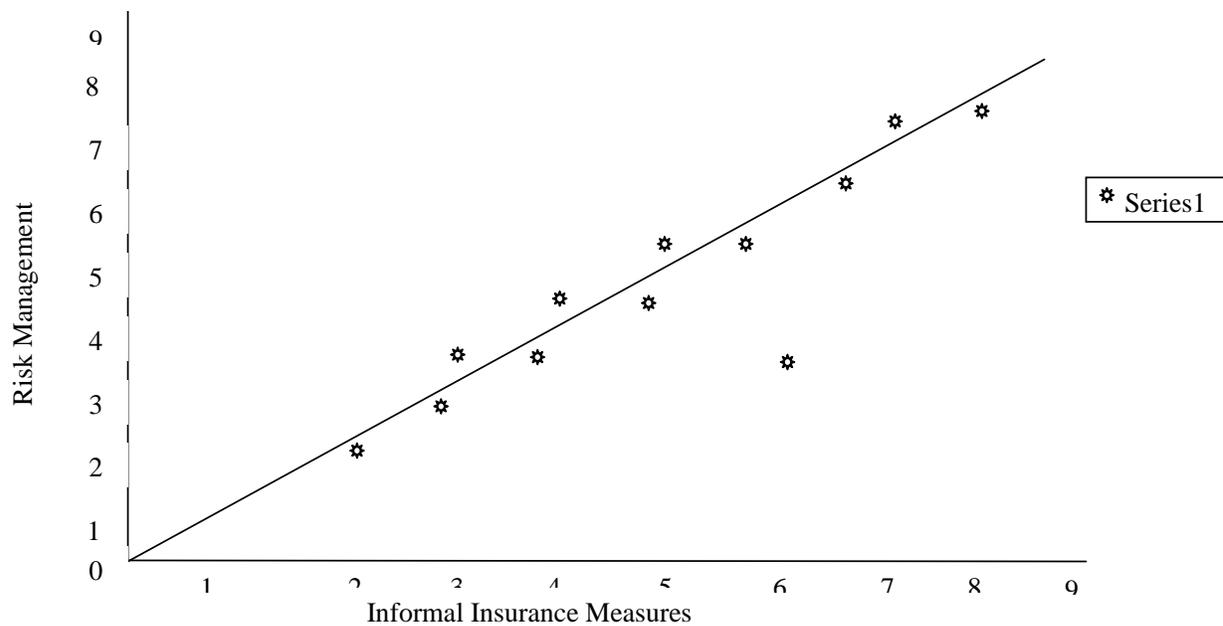
than the respondents that has 3crops and a livestock who used 3 informal insurance measures.

#### **Degree of relationship between informal insurance measures and risk management**

A correlation is one of the methods used in measuring the degree of relationship existing between economic variables. A simple Pearson correlation was conducted to determine the degree of relationship between informal insurance measures used by the respondents and risk management. Above is Table 6 showing the results.

From the above results, a correlation coefficient @ of 0.6 was obtained . This shows that there was a positive correlation between informal insurance measures and risk management. This means that an informal insurance measure used by farmers whether it is diversification, contract farming or any other informal insurance measures, covaries with risk management. An increase in the number of informal insurance measures used by a respondent will lead to a resulting increase in the risk management strategies of the respondents. This positive correlation is presented in the diagram below to show the linear correlation between the two variables.

From the Figure 1 below , the points seem to cluster near the straight line indicating the covariance of using informal insurance measures by the respondents as risk management strategies is linear. This is supported by Koutsvanis (1977) where she stated that two variables have linear correlations when there points cluster near a straight line. Each on the scattered diagram represents a pair of informal insurance measures and risk management for each respondent.



Source: Field survey, 2010.

**Figure 1:** Graph showing the linear correlation between informal insurance measures and risk management

A t-test was conducted by the researcher to test the significance of the hypothesis. This shows a value of  $t^*$  at 18.04 and the theoretical  $t$  at 2.02 since the value of  $t^*$  is greater than  $t(18.04 > 2.02)$  the null hypothesis which states that there is no significant differences between the informal insurance measures used by farmers and risk management. This implies that whatever informal an insurance measure used by a farmer is geared towards managing risk and not necessarily as a production techniques.

### Summary

Agriculture is very much vulnerable to the unpredictability of nature. With agricultural production representing the major livelihood of many resource constrained Odogbolu farmers, the impact of agricultural risks cannot be taken lightly. Other agribusinesses and commercial farms that operate with higher capital and better technology on better lands are also not spared from the same risks. The need to safeguard the interests and investments of local farmers and industry players is therefore of paramount importance. Farming is a high-risk business. It is established fact that farmers should use the best seeds, chemicals and management practices, but the weather can still destroy crops. Since one cannot control disasters, it becomes wise to transfer some of the risks by way of insurance in exchange for a manageable premium that can be a part of farmer operating budget.

Household in developing countries continue to face considerable risk, threatening their livelihood. This work discussed the major risk sources which include market

failure, price fluctuation, production/yield failure, are highly perceived among the respondents while institutional and financial risks are less perceived. The rural farmers uses different informal insurance measures like diversification of crop and livestock enterprises, contract farming, keeping buffer stock, savings, land fragmentation and others to manage risks that they routinely face. Out of the ten (10) informal insurance measures studied in this survey, diversification is the most practiced form of informal insurance measures among the respondents while contract farming is the least used by the respondents. It showed that for those engaged in both crop and livestock enterprises especially poultry production; costs of feed increases their total of production and also cost of seed yams increases costs of production for respondents that grow yam.

### Conclusions

In the absence of availability or little access to formal risk management mechanisms in Odogbolu area of Ogun state, the asset rural households seek to manage risks through various informal strategies. They may choose to diversify their crops, store grain, engage in informal savings and credit, favour traditional techniques over modern technology and enter into share-cropping arrangements. Since the rural farmers are now aware of the use of informal insurance measures, the rural farmers are likely to engage in low risk, low return activity portfolios. This is not because the rural farmers have different inmate preferences – a psychological trait that makes them less

entrepreneurial. Policy objective should be to reduce the level of vulnerability to poverty by providing mechanisms for the rural farmers to manage risk.

### Recommendations

The effectiveness of risk management of rural farm households is an empirical issue. The essence of carrying out a survey on the use of informal insurance measures among rural farmers in managing risks is to show the effectiveness of using these measures as well as identify the problems they may encounter. Promoting diversification is not necessarily a solution but finding ways of reducing constraints into profitable low-risk activities.

Based on these findings, I recommend the following factors to be adopted to improve the effectiveness of using informal insurance measures by rural farmers.

1) From this findings, it was revealed that informal insurance management practices used by the respondent did not increase the revenue of the rural farmers, this was due to the little holdings of the farmers and little investment in agriculture, therefore, the farmers should be encouraged to invest more and increase their input in agriculture as to improve their output/revenue.

2) It was also noted that majority of the rural farmers did not participate in the use of formal insurance because of ignorance, cost and bureaucracy; therefore, government should help sensitize the rural farmers on the availability and accessibility of the formal insurance so as to reduce the cost of the processes involved in the use of formal insurance.

### Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of the paper.

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