PROFITABILITY ANALYSIS OF SELECTING INFORMAL INSURANCE MEASURES FOR SELECTED ENTERPRISES BY RURAL FARMERS IN ODOGBOLU LOCAL GOVERNMENT AREA

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ABSTRACT
This study analyzed the farming systems and other informal insurance measures used by farmers for optimum farm income in Odogbolu Local Government Area of Ogun state, Nigeria. To give effect to the study, eighty farmers were randomly selected from the study area. Data collected through structured questionnaires and interview schedules was analyzed using net farm income analysis. Results showed the gross margin of the 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 use 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, diversification was the most practiced among the respondents while contract farming is the least used by the respondents. Recommendations include encouraging farmers to adopt the most profitable farming systems and informal insurance measures to help rural people have a stable income.

KEY WORDS
Diversification, contract farming, buffer stock, fragmentation, risks.

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; Hoddinott and Kinsey, 1998; and Jacoby and Skoufias, 1997). Fear of risk can lead agrarian households to forego potentially valuable new technologies and profitable production choices. Rosenzweig and Binswanger (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 setback. 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).

According to Estacio and Mordeno. (2001), agriculture is very much vulnerable to the unpredictability of nature. 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 Odogbolu LGA of 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, Mark 1988).

Alderman, Harold and Christina Paxson (1994) are of the opinion that most households in developing countries including Nigeria deal 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 Odo 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 trade off between market based risk management solutions and public or State sponsored schemes. (IFMR CIRM, 2008).

The vulnerability to income and consumption shocks makes it imperative to develop formal agricultural insurance mechanisms to cope with such risks. The traditional yield insurance schemes and the erstwhile Comprehensive Crop Insurance Scheme (CCIS) have failed to manage the risks of the poor farmers in India, as evident from their historically high payouts and poor penetration rates of State sponsored schemes, which is why this research is set up in Odo LGA of Ogun state, Nigeria, to view the impact and extent to which informal insurance has thrived in this area. Some of the reasons for the failures of formal insurance in India are firstly, Farmers with adequate risk management capabilities were forced to purchase crop insurance in order to receive a loan. Problems were faced especially when the loan is paid up and there was lack of understanding of the benefits of agricultural insurance which leads to a fall in the demand for insurance. Secondly, the 'area approach' followed was based on the results of crop-cutting experiments where the insured farmers receives indemnity based upon the difference between the threshold yield and the yield of the crop-cutting experiments in their area. Since crop yields vary over a small area, situations exist in which farmers do not get compensated for their loss under the NAIS and farmers without insurable losses would receive payments. Thirdly, there are long delays in payment of claims to farmers due to the time-consuming crop-cutting experiments by the agriculture department which causes an erosion of income for farmers. Fourthly, physical verification of the losses proved to be very costly and often gave way to fraud as it allows for an opportunity of collusion for the assessor and the client. (IFMR CIRM, 2008)

In view of these deficiencies and the unsustainable role of the State in subsidizing crop insurance which could crowd-out the role of the private sector, index based insurance could be a more efficient means to deal with risks faced in agriculture. For example, farmers could purchase rainfall contracts and if the rainfall in an area varies from a set level, varying levels of payment would be compensated to the respective farmers based upon the level of shortfall of rainfall. This alternate approach as compared to the NAIS would be an effective manner in reducing moral hazard and transaction costs. Innovations in the form of Index-based weather insurance has come up in the past few years to explore possibilities of overcoming some of

the deficiencies and are being improved on the basis of the feedback from product pilots. (IFMR CIRM, 2008)

Haddad, Lawrence and Manfred Zeller (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.

Jonathan Morduch (1999) opined that the emerging evidence suggests the need for policy concern beyond disaster relief and aid in the face of large, aggregate shocks like floods, earthquakes, droughts, and other natural disasters. Priority should also be given to enabling households to address losses due to illness, poor (local) harvests, and temporary unemployment. This means creating a supportive environment for new institutions that offer safe and reliable means for poor households to borrow and, in particular, to save. Insurance provision is a little-heralded innovation offered by microfinance programs, but recent experience shows that it is possible to offer limited life insurance and protection against other basic exigencies in a simple, low-cost manner (MicroBanking Bulletin 1998). Much more speculatively, it may be possible to improve on existing insurance arrangements for agrarian households by drawing lessons from microfinance analogues. As with the emerging microfinance movement, the actors in the best position to take key roles may often be non-governmental organizations and profit-making commercial enterprises. Self-regulating public workfare programs like the Employment Guarantee Scheme in Ogun State, Nigeria can also provide households with a flexible means for self-insurance in times of particular need (MicroBanking Bulletin 1998).

This study thus tries to analyze the profitability of selecting various informal insurance measures by rural farmers in Odogbolu Local Government Area of Ogun state, Nigeria.

PROBLEM STATEMENTS

A distinctive feature of agriculture in developing countries is the level of risk, which is more apparent for those who depend on agriculture for their income. The economic, financial and production shocks which rural farmers are exposed to cause farm profits to vary hence affects the household income of rural farmers. Fluctuations in producers incomes and particularly the threat of catastrophic loss, may present difficult welfare problems for rural farmers. Therefore, the need arises for measures through which rural farmers can protect their household income.

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 cost 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 the profitability of selecting various informal insurance measures by rural farmers in Odogbolu Local Government Area of Ogun state, Nigeria.

SIGNIFICANCE OF THE STUDY

Farmers in Odogbolu LGA of Ogun state are faced with spectrum of risks, and each of these risks along with how they manage them, impact farm income, productivity, and access to credit. Farm level surveys have indicated that the most frequently cited risks are price, crop/weather and health. These risks among others could lower farmers' anticipated income and have negative effects on their standard of living; ability to provide for themselves and their families, ability to build capital, and ability to access credit from lenders. But a well planned informal insurance will help the farmers of this area to prepare for risk and properly manage them.

This research study is relevant to government in that it will suggest the best combinations of policies and programmes for the alleviation of poverty among rural farmers. The informal insurance measures used by farmers need some interventions policies in order to help to protect them and their income against risk. Policies should target those key areas that can help farmers' improve their adoption of these measures. For example, policies should be targeted to the provision of microfinance credit institutions in rural areas in order to assist them in financing their farming activities. Therefore, this study is necessary in suggesting some key areas that need intervention programs to enhance the ability of farmers to manage risk.

LIMITATIONS OF THE STUDY

In the course of carrying out this study, the researcher encountered problems. These include:

1) The respondents were unwilling to give true information about the revenue they get from their enterprise. They felt the information may be used to tax them.

2) The time for collection of data was short and so the researcher could not get all the information he wanted from the respondents

3) Unavailability of funds was a major problem for the researcher as it restricted my movement to the different areas of the study area.

4) Inability of the farmers to keep records to which made them to guess the cost they incurred and their revenue.

5) Some of the areas in the study area are inaccessible, in terms of roads but rather were accessible through use of boats. This makes the researcher not to collect information from farmers in such areas.

RESEARCH METHODOLOGY

The study area is Odogbolu Local Government Area and is strategically located on a large expense of land of about 640sq.km and was created on the 21st September 1991 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 Government and in the south with Epe Local Government in Lagos State. This Local Government Area has about 150 towns and villages under its jurisdiction. It has 15 wards and its headquarters is in Odogbolu.

Inhabitants of Odogbolu Local Government are Yoruba of Ijebu extraction; with a population of 127,000 people according to the 2006 Census. Like any other Nigerian society, there are growing numbers of people from other ethnic groups in the country, such as the Igbos, Isokos, Urhobos, Hausa, etc. Christianity and Islam are the two main religions of the

people, however there still remain sizeable number of committed traditional worshippers. The Local Government has public primary schools & secondary schools. There are also an appreciative number of private investments in the education industry. This Local Government Area can boast of a strong traditional heritage and a sound cultural background at the head of which are enlightened royal fathers.

The people in this area are mainly agrarian, engaged in farming, hunting, fishing, lumbering and handicraft. Most of the inhabitants are involved in agriculture although a great percentage of them have other occupations. Some of the food crops grown around the area are yams, cassava maize, rice and vegetables, most of which come from the major agricultural areas in the area. Livestock production is also practiced but mainly on extensive system of production. Poultry production forms the bulk of these livestock activities followed by small ruminant production. Most of the informal insurance measures such as timeliness of operations, diversification etc are practiced as risk management techniques as well as production practices. Also, these farmers keep buffer stock to have something to fall on in case of crop failure and to ensure food security. These traditional methods of managing risks otherwise known as informal insurance measures are used by rural farmers in the study area.

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 the availability of food crop farmers. Also, studies on food crop farmers in the study area especially as regards issues focusing on risk in agricultural production are scarce in the literature; an attempt to fill this void provides a basis for Odogbolu as the study area.

A two-stage sampling procedure was used in the collection of primary data in Odogbolu LGA. The first stage involved a random selection of five (5) communities from amongst the communities in Odogbolu LGA of Ogun state. The second stage involved the selection of respondents/farmers from each of the communities using the same insurance practices from the already listed informal insurance practices with probability proportionate to the size of each farming communities selected.

DATA COLLECTION

Data from this study were obtained from both primary and secondary sources. The primary data include the use of questionnaire and oral interview, which were duly administered to the rural farmers. These questionnaires were administered in person due to the little or no formal education of the farmers. The questionnaire schedule provided information on socio-economic characteristics of rural farmers, forms of informal insurance measures used by rural farmers. Data were also collected on the 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. However, secondary data were also sourced from the Agricultural Development Programme (ADP) office in Ogun state, texts, journal, publications, research reports.

DATA ANALYSIS

To analyze, identify and determine the common informal insurance practices by rural farmers and the cost / returns of selecting various insurance measures as well as the

identifying the problems and constraints associated with / against the use of informal insurance measures, analytical tools that were used are mainly descriptive statistics such as mean, frequency, pie charts, percentages, tables and other applicable tools as indicated by responses to the respective survey questions.

COST AND RETURNS ANALYSIS

The analysis of costs and returns is to indicate the possibility of an enterprise or otherwise to a farmer. Gross margin in crop and livestock enterprises is defined as the differences between revenue (sales) from products obtained from the enterprises and the costs of variable inputs used in production.

Costs of Variable Inputs Used by the Respondents. The sources of variable inputs used for production include the planting materials used by the respondents, labour and other utilities (contingencies) such as ropes, stakes etc. Below is a table showing the average cost/farmer of planting materials, feed, drugs, labour and other contingencies of the respondents.

Table 1 - Distribution of Average Cost/Farmer of the Variable Inputs Used by the Respondents

Cost of Items	Cost farmer (N)	Percentage
Cassava cuttings	400	0.26
Maize seed	200	0.13
Seed yam	450	0.29
Rice seeds	100	0.06
Vegetable seeds	500	0.32
Land preparation	1500	0.96
Planting	1000	0.64
Weeding	1000	0.64
Harvesting	800	0.51
Processing	600	0.38
Breeding stocks	35,000	22.3
Feeds	60,000	38.3
Fertilizers	5,000	3.2
Herbicides	1200	0.8
Other contingencies	50,000	31.9
Total	156750	100

Source: Field survey 2010.

From the above, feed (especially for those in poultry enterprise) has the highest cost/farmer and accounts for38.3% of the total cost of production. This follows the findings of Jakob (1989) where he stated that feed accounts 70-85% of the total cost of production. Maize seed is the least cost. Also cost of breeding stock, labour cost for land preparation and cost of seed yam have higher cost/farmer of N35,000, N1,500 and N450 respectively. The implication of this is that in a production programme of crop which includes yam production, it costs of production is made higher by the higher cost of seed yams. The respondents said that as a result of high cost of seed yams, they keep buffer stocks in order to reduce price risk.

An analysis of costs of production with emphasis on the number of crops and livestock kept by farmers is made in this survey. The essence of this analysis is to assess the cost of production for the respondents according to the number of crops and livestock enterprise they keep as well as their total and average cost of production to show the relevance of the informal insurance measures used by the respondents. Below is a table showing the costs of variable inputs of respondents with different number of crop and livestock enterprise.

The table above shows the pooled and average costs of all variable inputs used by the respondents based on the number of enterprise they embark on. The table shows that the costs of production increases with more diversification of enterprises.

Table 2 - Distribution of Variable Costs of the Respondents Based on their Number of Crops and livestock

Number of Crops and Livestock Enterprises	No. of Farmers	Pooled Costs (N)	Enterprise Average Costs (N)
1 crop & no livestock	0	0	0
! crop & 1 livestock	17	55830	3284.1
2 crop & no livestock	6	64980	10830
2 crops & 1 livestock	38	109980	2894.2
2 crops & 2 livestock	0	0	0
3 crops & no livestock	3	32490	10830
3 crops & 1 livestock	14	77490	5535
0 crop & 1 livestock	2	45000	22500
Total	80	385,770	55873

Source: Field survey 2010.

This is attributed to the fact that the more the diversification the more the input requirements, hence, the increase in cost of production. For instance, the average cost of the respondent with one crop enterprise and one livestock is N55,830 while that of the respondent with 3 corps and one livestock is N77,490. This shows that use of informal insurance measures do not reduce costs of production.

Analysis of Output/Revenue. The output of respondents using informal insurance measures includes the cassava tuber, maize, rice, vegetables, yam, fishes, small ruminants (sheep, goat) and poultry birds. Thus, the table below is a summary of the revenue from these different enterprises according to the particular number of enterprise used by the farmers.

Table 3 - Summary of Respondents Revenue Distribution

Number of Crops and Livestock Enterprises	No. of Farmers	Pooled Revenue (N)	Enterprise Average Revenue (N)
1 crop & no livestock	0	0	0
! crop & 1 livestock	17	150000	8824
2 crop & no livestock	6	190000	31,666.7
2 crops & 1 livestock	38	350000	9210.5
2 crops & 2 livestock	0	0	0
3 crops & no livestock	3	290000	96,667
3 crops & 1 livestock	14	300000	21428.5
0 crop & 1 livestock	2	50000	25000
Total	80	1,300,000	192,796

Source: Field survey 2010.

From the above, the average revenue/farmer increases with an increase in the number of enterprises of the respondents. This is as a result of the increase in sources of income to the respondents. The least revenue per farmer is from the respondent who grows no crop but has one livestock while the highest revenue was recorded from the respondents who grows two crops and one livestock followed by three crops and one livestock respectively. As the number of informal insurance measures differs among the respondents with different numbers of enterprises, the researcher noted from the respondents that the number of informal insurance measures they use does not increase their revenue but that whatever number used is directed to reducing the occurrence of a particular risk they perceive most while ensuring that their revenue is not affected by such risks. Therefore, the essence of using informal insurance measures by the respondents is to reduce occurrence of crop or livestock failure which affected household income of rural farmers.

Gross Margin. From the average revenue calculated, a gross margin analysis was conducted to determine the reliability of different number of enterprises used by respondents with the number of informal insurance measures used. Below is a table showing the gross margin for the different number of enterprises used by the respondents.

Table 4 - Gross Margin of Respondents

Number of Crops and Livestock Enterprises	Average Revenue (N)	Average Costs (N)	Gross Margin Per Farmer (N)
1 crop & no livestock	0	0	0
! crop & 1 livestock	8824	3284.1	5539.9
2 crop & no livestock	31,666.7	10830	20836.7
2 crops & 1 livestock	9210.5	2894.2	6316.3
2 crops & 2 livestock	0	0	0
3 crops & no livestock	96,667	10830	85837
3 crops & 1 livestock	21428.5	5535	15893.5
0 crop & 1 livestock	25000	22500	2500
Total	192,796	55873	136923

Source: Field survey 2010.

The gross margin of the respondents with different number of enterprises is positive in all the diversified crop and livestock enterprises. The implication of this is that the informal insurance measures used to the respondents give a positive trade-off. The gross margin increases from N2500 for the respondents with only one livestock and no crop enterprise to N20,836.7 for the respondents with two crop enterprise and no livestock enterprise. This shows that the use of informal insurance measures does not necessarily mean increase in gross margin, but it helps in maintaining a steady flow of income for the farmers.

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. Among all the variable inputs used by the respondents, feed accounts for the highest costs (75 – 80%) followed by labour cost for land preparation and the least cost is the cost of vegetable seeds. On the whole, cost of production increases with increase in diversification of enterprises. For revenue, the use of informal insurance measures reduces failure that may lead to loss of revenue but increase in diversification increases revenue. The gross margin is positive for all the enterprises of the respondents. A positive correlation of 0.60 was found to exist between use of informal insurance measures and risk management by the respondents. On the problems encountered by the respondents, they identified factors like lack of access to credit and credit facilities, lack of working capital, lack of skills, high costs of inputs as problems, active as

entry barriers to their use of informal insurance measures leaving them with low-return and low risk activities.

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. Diversifying income sources is useful but because rural farmers are poor, it may come at a high cost, in terms of levels of income and procurement of inputs. Nevertheless, observing specialization does not necessarily imply that the household follows a high risk strategy. Poverty allocation strategy should not focus only on reducing the head count poverty rate or the percentage of rural households to total population. 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) Government should make prudent monetary and fiscal policies that help, in controlling inflation, and reduces the risk of falling real income. Such policies help rural farmers to improve their ability to manage risk effectively, tackle price and production risk which rural farmers face majorly.

2) 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.

3) The government should give concessions to the rural farmers in various aspects which include provision of credit facilities, provision of infrastructures and inputs for rural farmers to enable them perform most of the informal insurance measures.

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