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Analysis of Risks in Financing Agriculture a Case of Agricultural Cooperatives in Benue State, Nigeria

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Abstract

The study analyzed risks in financing agriculture by agricultural cooperatives in Benue State, Nigeria and use research questionnaires for data collection. A multistage sampling technique was used to select the sample of 210 respondents from 21 agricultural cooperatives. Descriptive and inferential statistics were employed in data analysis. Loan defaulting (66.7%) and reduction in savings by members (51.4%) were the major causes of risks faced by agricultural cooperatives in the study area. Other were: adverse changes in commodity prices (48.6%), disaster (45.7%) among others. Risks adversely influence the profitability and competition of agricultural cooperatives (82.9%). Multiple regression analysis results showed that the coefficient of multiple determinations was 0.67 implying that the explanatory variables included in the model accounted for 67% of the variation in the level of profitability of agricultural cooperatives. The number of loans, average amount of loan and the interest rate were significant and important determinants of profitability of the cooperatives. Majority of the respondents (88.6%) made use of loan guarantors as a strategy of managing loan default/ repayment. It was found that majority (70%) of the respondents faced the challenge of lack of insurance cover. The study recommend that Agricultural cooperative officials should be encouraged to undergo formal training and education so as to easily acquire administrative skills in the management of agricultural loans, Farmers loan size should be increased and released on time to enable them use it effectively. Policies that enhance insuring farm activities should be put in place so as to discourage farmers risk aversion.

Keywords: Agriculture, Analysis, Cooperatives, Finance and Risk

1. Introduction

Agriculture has been the most important single activity in the Nigerian economy, with about 70% of the total working population engaged in it. It is the largest single sector of the economy providing employment for a significant segment of the workforce and constituting the mainstay of the Nigeria rural communities which accounts for nearly two-third of the population. The proportion of the Gross Domestic Product (GDP) attributed to agriculture holds between 30 and 40% (CBN, 2009). It is for this reason that the Nigerian government has identified agriculture as one of the key sectors that is expected to provide the growth necessary for the achievement of the Nigerian Government's vision, 2020. The sector faces challenges that include high cost of inputs, poor livestock husbandry, limited extension services, over-dependence on rain-fed agriculture, lack of markets, and limited application of agricultural technology and innovation (Nwosu, 2005 and Alemayehu et al., 2006)

However, the economic performance of the agricultural sector is usually uncertain due to its biological nature in addition to relying mainly on rain-fed agriculture and livestock rearing under natural conditions. This type of production is inherently risky because of variability of rainfall, animal mortality due to livestock diseases and fluctuations in output prices. The environment in most of low income countries is characterized by crop diseases, flooding, illness of household members and crime. All these create uncertainty (Capitanio,

2008). As a result of a combination of many factors, many people in low income countries including Nigeria live in poverty and food insecurity. They face many risks and uncertainties which arise from natural, economic and socio-political environments. These risks and uncertainties easily trigger food shortages, deterioration in nutritional status and destitution (Phinstrup-Anderson, 2001) as cited by (Korir, 2011). The uncertainties inherent in weather, yields, prices, government policies, global market and factors that impact farming cause wide swings in farm income and hence affect loan beneficiaries' repayment abilities and credit allocation to the farm sector.

The agricultural cooperatives as a type of financial institution pose as an attraction to the farmers since they enable the farmers to pool their financial resources and efficiently venture into business activities deemed impossible if independent. As the operation of agricultural cooperatives involves agricultural businesses which are complex and rapidly changing, agricultural cooperatives are exposed to manifold internal and external sources of risks. These risks influence the financial performance and subsequently the business operation of the agricultural cooperatives (Wateman, 2002) in (Korakot, 2005). Agricultural cooperatives are institutions which provide financial support to farmers and act as an interface between the farmers and the markets. The business performances of agricultural cooperatives vital for the major financial interactions in the agricultural sector are exposed to several different sources of risks. (Manfredo et al., 2003).

The impact of risks hampers the business operations, reduces the competencies, and influences profitability of cooperatives. The existence of risks emphasizes the importance of risk management in the administration of agricultural cooperatives (Alimi and Ayanwale, 2005). Managers of agricultural cooperatives who possess inadequate risks management plan will lack the direction for risk management to mitigate loss from the synergistic impact of different types of risks. As a consequence, agricultural cooperatives will not be able to operate and compete in the rapidly changing market.

They are several studies on risk in financing agriculture by lending institutions. For instance, Abdulhamed, (2017) analyzed risk management challenges in the financial institution Kibui and Mamori, (2014) examined the effect of credit risks management on financial performance of SACCOS in Harambee, Kenya. Manfredo et al., (2003) studied the agricultural cooperatives and their impacts on financial performance. Alimi and Ayanwale, (2005) studied risk and risk management and strategies in onion production in Kebbi state of Nigeria; Korir, (2011) studied risk management among agricultural households and the role of off farm investments in Uasin Gishu Coundy, Kenya. There is little or no study on analysis of agricultural risk in financing agriculture by agricultural cooperatives in Benue state, Nigeria. This is the research gap this study aimed to fill.

Objectives of the Study:

The broad objective of the study is to analyze risks in financing agriculture by agricultural cooperatives in Benue State, Nigeria. The specific objectives of the study are to:

Identify causes of risks of agricultural cooperatives in the study area;

Determine the effect of these risks on the profitability of agricultural cooperative societies and

Analyze the risk management strategies that are adopted to cope with these risks in the study area.

2. Materials and methods

The study was carried out in Benue State located in the north-central part of Nigeria. A multistage sampling technique was used to select the sample for the study. The first stage involved the purposive selection of three local government areas namely Gboko, Makurdi and Vandiekya based on the fact that they have the highest number of agricultural cooperatives in Benue State. The second stage involved the random selection at 10% of the respondents to give a total of 210 respondents for the study. Primary data were collected by means of structured questionnaire administered to each respondent.

The data obtained were analyzed using both descriptive and inferential statistics. Objectives i and iii were analyzed using frequency distribution, percentage, mean and standard deviation. Objective ii was analyzed using the multiple regression technique.

Model Specification: The model for the impact of risks on profitability of agricultural cooperatives was implicitly expressed. P = f(A,IR,D,RA,NLY),

Explicitly,

$P = \beta o + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + \beta 5X5 + U$

Where

P = Profit of Agric Cooperatives
X1 = Amount of loan disbursed (A)
X2 = Interest Rate (IR)%
X3 = Duration of loan in months (D)
X4 = Repayment amount in naira (RA)
X5 = Number of loans disbursed (NLY)
U = Error term
Bs= coefficients

3. Results and discussion

3.1 Causes of Risks of Agricultural Cooperatives in the Study Area

Table 1 shows the causes of those risks faced by agricultural cooperatives in financing agriculture in the study area. It was found that defaulting (66.7%) and reduction in savings by members (51.4%) were the major causes of risks faced by agricultural cooperatives in financing agriculture in the study area. Other causes of the different risks faced by agricultural cooperatives in the study area were: adverse changes in commodity prices (48.6%), disaster (45.7%), external events (34.3%), and fluctuations in interest rate (32.4%), and foreign exchange rate (30.5%), premature death (28.6%) and inadequate or failed internal process (17.1%).

The findings that defaulting and reduction in savings by members were the major causes of risks faced by agricultural cooperatives in financing agriculture in his study area conforms with Malimba, (2009) and Nwankwo, (2013) that agricultural cooperatives are faced by risks such as non-repayment of loans/defaulting and low savings due to crop losses as a result of floods, drought or fire outbreak. These affect the agricultural cooperatives ability to lend funds to the members resulting to a risk of lack of trust. In a similar vein, adverse changes in commodity prices, fluctuations in interest rates and foreign exchange rate have been identified by Rejda, (2008) as the causes of financial risk. Rejda, (2008) also observed that pure risk may result in a situation which may result to a possibility of loss or no loss. Examples may include, but not limited to premature death, damage of property through disasters like flood, droughts, fire, lightning or earthquake.

3.2 Impact of Risk on the Profitability of Agricultural Cooperatives

The regression results of the impact of risk on profitability of agricultural cooperatives are presented in Table 2. The result indicated that the coefficient of multiple determinations, (R^2), is 0.67 implying that 67% of the profitability of Agricultural Cooperatives was explained by the fitted variables. The F-statistic was significant at 1% implying that risk influences the probability of Agricultural Cooperatives. The multiple regression result in Table 2 shows that the coefficient of multiple determinations was 0.67 indicating that the explanatory variables included in the model accounted for 67% of the variation in the level of profitability of the agricultural cooperatives. The number of loans, amount of loan disbursed, loan duration, and the value of interest were significant determinants of profitability of the cooperatives. The number of loans was negatively related to the profitability and significant at 5%. This implies that as the number of loans increased due to extensive credit rationing, the profitability of the agricultural cooperatives decreases. The regression coefficient is equal to one (negative) indicating that a unit increase in the number of loans will lead to an equal decrease in loan profitability of the agricultural cooperative. As seen in table 2, amount of loan disbursed is highly significant at 1% level of probability.

There is also a negative relationship between amount of loan disbursed and the level of the profitability of agricultural cooperatives. This means that profitability increases as the amount of loan per beneficiary decreases and vice versa. The regression coefficient is greater than unity. This implies that a unit increase in the amount of loan per beneficiary will lead to a greater decrease in profitability of the agricultural cooperative. The relationship between loan recovery and the amount of loan per beneficiary was expected to be positive since increase in the average loan amount will reduce the level of rationing or number of loans. The negative relationship suggests that the beneficiaries either diverted their credit to non-agricultural uses or were primarily subsistence oriented. This agrees with the findings of Malimba, (2009) and Nwankwo, (2013) that diversion of credit to non-agricultural uses or subsistence activity adversely affects the ability to repay debt hence reduces the profitability of the agricultural cooperatives.

As seen in table 2, interest is positively related to profitability. The regression coefficient was equal to one. The implication is that a unit increase in the value of interest will lead to an equal increase in the profitability of the agricultural cooperatives. From the point of view of the lender, the higher the value of interest, the higher is the expected profits. The expectation of higher profits will probably induce the lender to take all necessary measures to ensure recovery. As a result, the level of recovery will increase as the value of interest increases thereby increases the profitability of the cooperatives. This confirms to the findings of Rejda, (2008) that fluctuation in interest rate has been a major cause of profitability variation.

As seen in table 2, the duration of loan and profitability of agricultural cooperatives are directly related. This is highly significant at 1% level of probability. The implication is that as loan is given a longer time before recovery, the user is enabled to make use of the loan for productive purposes and therefore able to repay the loan. In this sense, default rate will be low thereby increasing the profitability of the cooperatives.

Table 1. Distribution of Risks Faced by Agricultural Cooperatives in Financing Agriculture in the Study Area

Type of risk	Frequency	Percentage	Rank
Premature death	60	28.6	8
Disaster	96	45.7	4
Inadequate failed internal process	36	17.1	9
External events	72	34.3	5
Adverse changes in commodity prices	102	48.6	3
Fluctuation in interest rate	68	32.4	6
Foreign exchange rate	64	30.5	7
Defaulting	140	66.7	1
Reduction in savings by members	108	51.4	2

Table 2. Regression Results of the Impact of Risk on the Profitability of Agricultural Cooperatives in the study Area

Variable	Regression Coefficient	Standard Error	t-value
Constant	7.305	5.379	1.358
Number of loans disbursed	-1.156	0.524	-2.022**
Amount of loan disbursed	-1.605	0.401	-3.996***
Loan Repayment Amount	745.124	3,130.773	0.238
Interest on loans	1.193	0.517	2.305**
Loan Duration	3.652	1.237	2.952***
R2	0.67		
Adjusted R2	0.60		
F-statistic	7.625***		

, * Significant at 5% and 1% level of probability

Table 3: Risk Management Strategies Adopted by Agricultural Cooperatives in the Study Area

Risk Management Strategy	Frequency	Percentage	Rank
Risk identification	76	36.2	8
Risk assessment	80	38.1	7
Risk reduction	94	44.8	6
Risk transfer	70	33.3	9
Risk avoidance	102	48.6	5
Transparency	60	28.6	10
Loan guarantees	186	88.6	1
External auditing	130	61.9	3
Budget and budgetary control	104	49.5	4
Education and training	146	69.5	2

Ogah, (2011) had stressed the need for loan to be given to farmers on long-term basis instead of short term basis to allow for the use of loan for productive ventures. This finding also conforms to the report of Kohansel et al.,(2008) as they noted that the longer repayment of loan and more number of installments will motivate the desired investment in agriculture.

3.3 Risk Management Strategies Adopted by Agricultural Cooperatives in the Study Area

Table 3 shows the different strategies agricultural cooperatives adopt in managing risks. It was found that majority of the respondents (88.6%) made use of loan guarantors as a strategy of managing loan default/non-repayment risks. This was closely followed by education and training (69.5%) and eternal auditing (61.9%). This finding agrees with that of Martins, (2012) who emphasized that every cooperative should reinforce its system on loan guarantees securities. Members who need loans should be required to offer sufficient guarantees to ensure that the cooperative is able to collect the debt. Bernardin, (2010) also noted that training and education will serve to assist the employee to change his behavior or attitudes and gain specific knowledge and skills. External auditors are hired to present and explain the annual financial statements of cooperatives to Annual General Meeting and Board of Directors; this helps in reducing fraud and enhancing transparency in agricultural cooperatives. Other risk management strategies adopted by agricultural cooperatives in the study area include;

budget and budgetary control (49.5%), risk avoidance (48.6%), risk reduction (44.8%), risk assessment (38.1%), risk identification (36.2%), risk transfer (33.3%) and transparency (28.6%).

4. Conclusions and recommendations

The study analysed risks in financing agriculture by agricultural cooperatives in Benue State, Nigeria and discovered that cooperatives are exposed to risks of loan default/repayment and lack of funds. The major causes of risks are changes in commodity prices, adverse weather condition and reduction in savings of members. Multiple regression analysis result showed that the coefficient of multiple determinations was 0.67 implying that the explanatory variables included in the model accounted for 67% of the variation in the level of profitability of agricultural cooperatives. The number of loans, amount of loan, loan duration and the interest rate were significant determinants of profitability of the cooperatives. Majority of the respondents made use of loan guarantors as a strategy of managing loan default/non repayment risk. The study recommend that Agricultural cooperative officials should be encouraged to undergo formal training and education so as to easily acquire administrative skills in the management of agricultural loans, Farmers loan size should be increased and released on time to enable them use it effectively. Loans should be given on long-term basis. Policies that enhance insuring farm activities should be put in place so as to discourage farmers risk aversion.

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