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# Determinants of Growth of Agricultural Credit among Commercial Banks in Kenya

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# Abstract:

A robust and systematic agricultural sector contains the prospect to enable a country to feed its expanding population, promote employment, earn foreign exchange and furnish industries with raw materials, this formed the backbone of this study. The study sought to establish the determinants of growth of agricultural credit among commercial banks in Kenya. The focus was on development of Kenya Commercial Bank agricultural financial services delivery in Kiambu County. Data was collected from eight branches of KCB bank operating within Kiambu County considered one of the agricultural rich counties in Kenya therefore a good representative. Adopting a descriptive research design the study used secondary data which was analyzed with the aid of SPSS Software version 21. The findings indicate that Profitability, Cost of Credit and Credit Risk have negative influence on the growth of Agricultural credits in Kenya. A unitary increase in these three variables has a negative influence on agricultural credit. However Loan Size positively influences growth in Agricultural Credit and ultimately growth of agribusiness. The study concludes that all the variables of this study affect the growth of agricultural credit and recommends stakeholders in Financial and Agricultural sector in Kenya to develop policies that strengthen commercial bank's support to agricultural sector in the county. They should also include subsidies to the Agricultural sector thus enhancing economic growth as per the Maputo declaration that requires governments to allocate at least 10 percent of their national budgetary resources to agriculture and rural development policy implementation

Keywords: Agricultural credit, credit risk, non-performing loan, adverse selection

# 1.Introduction

Agriculture is seen as the backbone of economic growth especial in most developing countries. Kenya's economy dependents relatively on agriculture, about 26 percent of her gross domestic product (GDP) is directly attributed to agriculture. Over 65 percent of Kenya's total exports come from agricultural sector, similarly 18 percent and 60 percent of the formal and total employment is contributed by agricultural sector. Therefore this sector has been a key driver of economic growth in Kenya. The sector is seen as the main source of livelihood for almost 80 percent of Kenya's population living in rural areas. (Kenya economic report, 2013).

Access to finance is important for the growth of the agricultural sector, funds are required to drive the shift from subsistence to commercial agricultural production. However, in developing countries, where agriculture is a source of livelihood for 86 percent of rural people, financing for agricultural investments is inadequate. In Africa, commercial lending destined to agricultural sector is less than one percent. Lending activities of various commercial banks depend on the willingness by financial institutions to extend credit to some sector of the economy. The requirement to collect detailed information about potential borrowers and the requirement to closely monitor the loaned determines the costs involved in lending to the agricultural sector (Nijs, 2014).

Risks prevalence in agricultural sector include drought, floods, pests and diseases, and also transaction costs of covering large geographical distances, these risk factors are not appealing to most commercial banks. The issues commonly raised include vagaries of weather, market fluctuations and irregular incomes by farmers. This ultimately raises cost of debt to farmers across banks coupled with collateral requirements (Were & Wambua, 2014).

A link between commercial banking and agricultural lending has long been recognized but disparities remain a concern to many people. However, despite all these efforts, access to credit by smallholder farmers in Kenya is a challenge notwithstanding the relatively well developed banking system. The cost of travelling to bank offices is a deterrence to borrowing to some farmers. Central Bank of Kenya report shows the extent of underfunding to the agricultural sector in Kenya, receiving only an average of 3.3% of the total credit extended to the economy (Ministry of Devolution and Planning, 2014). General macroeconomic management policies have an influence on agriculture through changes in the real rate of

exchange, which plays a crucial role in the profitability of both export oriented and import competing agriculture (Uddin & Mursheed, 2017).

World Bank posits that commitment to stimulate Agriculture is in place, however in the financial dynamics that characterize most of the economies globally, Africa is notably omitted. The slow development of the financial market in the Sub-Saharan Africa is more distinct, even though most of the economies are agrarian. Financial intermediation and risks resulting from the underdevelopment of the agro-industry in Sub-Saharan Africa results in slow investment. Taking a close look on farm activities in many countries, agricultural credit providers in today's environment face many impediments when assessing credit worthiness of a farmer. In such a scenario, financial institutions become reluctant to provide loans to small scale farmers who might not have the capacity to offer collateral eligible in the eyes of such institutions' policies and procedures. The financial services provided by the banks over the years have been paramount to many farmers but the various forms of lending agricultural credit presents the banks with numerous set of risks (Ngare, Kweyu, & Huka, 2015).

Central to the overall growth and development of Kenya is the agricultural sector, like in most other countries in sub-Saharan Africa, is the mainstay of the economy. The sector currently accounts for 65 percent of all exports and contributes about 26 percent of gross domestic product (GDP). At the same time, agriculture provides more than 18 percent of formal employment and about 70 per cent of informal employment in the rural areas where the majority of the population lives. Industrial crops, food crops, horticulture, livestock, fisheries, and forestry are the six sub sectors that make up the Kenya's agricultural sector. The industrial sectors accounts for about 17 percent of agricultural GDP and about 55 percent of the value of agricultural exports. (World Bank, 2013).

Financial Institutions in Kenya are licensed and regulated in harmony with the provisions of the Banking Act (Cap 488) and the requirements and prudential guidelines issued by the Central Bank of Kenya (CBK, 2013). A number of banks in Kenya have initiated several agricultural loaning programs. Dominating this market is Equity bank which has regional branches in Kenya, Uganda, South Sudan, Rwanda, and Tanzania. Recognizing that agricultural sector is the mainstay of the Kenyan economy, the bank focuses on smallholders' farmers and other agricultural values chain actors as a segment of its target market. Other Financial Institutions which are active in Agri-lending are KCB Group (KCB), Co-operative bank, Transnational Bank, Barclays Bank, Chase bank amongst others.

According to (Amiran Kenya, 2014), the partnership with Chase Bank, Rafiki deposit taking and microfinance institution (DTM), is an arrangement that extend new credit opportunities to farmers and youth. This allocated agribusiness finance project funds amounting to Kshs.3.5 billion to help finance modern agricultural technologies to youth and farmers. This is geared towards boosting their farm productivity as well as empowering the youth economically.

KCB bank has been lending to the agricultural sector since the year 2009, it has a variety of products which includes Mavuno loans for tea farmers, KCB Dairy loans, KCB Agribusiness Working Capital Loans, KCB Agribusiness Asset Finance Loans, KCB Horticulture product, KCB Kenya Seed product, KCB Mavuno product, and KCB Bio Digester loan product. Despite being among the pioneers of agriculture finance in Kenya the total portfolio allocated to the agricultural sector is only Kshs. 2.4 billion compared to a total loan book of Kshs. 345,968 billion as at December 2015. (KCB bank group, 2015). The progress of the agricultural sector is paramount to the development of the economy as a whole. Agriculture is the most underfunded sector in Kenya, receiving an average of 3.3 percent of the aggregate commercial banks credit portfolio to the economy. This means that institutions such as Agricultural Finance Corporation advancing loans to farmers is grossly overwhelmed in meeting farmers credit needs. In 2016 the agricultural finance corporation received only Kshs. 2 billion from the exchequer against loan applications amounting to Kshs. 11 billion from Kenyan farmers.

The progress of Agricultural sector is expected to have greater effect on a larger section of the population than any other sector (Muthama, 2015). The ratio of agricultural loans to total loans from commercial banks is very small (about 5.3 percent in 2010 and 5.6 percent in 2011 which has further declined to 3.3 percent in 2017). Despite a legal requirement that 17–20 percent of commercial banks' loan portfolios must be dedicated to agriculture. This is far below what the government of Kenya has directed, indicating serious underfinancing of the agricultural sector (World Bank, 2017). KCB Group, the bank with the largest asset base in Kenya has a total loan book of Kshs. 364.5 billion Kenya shillings out of which only 4 billion is allocated to agriculture, approximately 1.1% of the total loan portfolio. According to the National Agribusiness strategy (2012), financial services and products are not tailored to suit rural, small scale agricultural enterprises. Their nature of being small scale and fragmented makes the costs of loaning to them to be extremely high thus putting off prospective lenders. This low usage of financial services exponentiate the lending costs. The financial sector has little incentive to agricultural investors even though agricultural lending services are already available. Creating more products and services that meet the smallholder's needs is not a priority for most financial service providers as the returns are deemed to be low compared to risk (Locks & Silice, 2013).

Studies done on Private sector Agribusiness Investment and Agro industry from selected countries, in Sub-Saharan postulate varied trends in private sector agribusiness investment. Commercial banks in Kenya granted credits to the agribusiness sector at an average of 4.43 percent of the Commercial Banks' entire credit portfolio for the five years period (2009- 2014). Studies done in sub-Saharan Africa failed to consider factors influencing the growth of the agricultural sector especially in Kenya. This study therefore sought to ascertain the determinants of growth of agricultural credit in Kenya. Consequently the following hypotheses were tested.

- H<sub>0</sub>: Bank profitability does not significantly influence growth of agricultural credit in Kenya
- H<sub>0</sub>: Cost of funds does not significantly influence the growth of agricultural credit in Kenya
- H<sub>0</sub>: Loan size does not significantly affect the growth of agriculture credit in Kenya

• H0: Credit risk does not significantly contribute to the growth of agricultural credit in Kenya.

The paper is organized as follows; the next section (2) presents a literature review. Section 3 discusses the methodology. The analysis and results are presented in section 4. Section 5 concludes the study and provides policy recommendations.

### 2.Literature Review

Felicia and Olokoyo (2011) investigated the determinants of commercial banks' lending behaviour in the Nigerian, asserts that the interest rates set by banks is proportional to the risk of borrowers. According to loan pricing theory as postulated by Stiglitz and Weiss in 1981, Banks cannot always set high interest rates. High interest rate may prompt adverse selection problems because high-risk borrowers will be willing to accept these high rates. Once these borrowers receive the loans, they may develop a moral hazard behavior the borrower's moral hazard since they are likely to take on exceedingly risky projects or investments.

According to Owino (2013) considering the effect of lending policies on the levels of non-performing loans (NPLS) of commercial banks in Kenya. Posits that financial institutions have to face some risks when they operate the loan business, especially where the principle and interest is not repaid on time. The costs which banks foot for undertaking this kind of credit risk are called the risks cost of loan. Agricultural loans are influenced by natural conditions, so the risk is relatively high and their ability to resist the risk is relatively weak, the loaned also lack adequate collateral. These factors increase the risk of loan. Thus, loan pricing of banks should pay close attention to the risk compensation and reflect its risk premium accurately.

According to agency theory as postulated by Mitnizcky and Ross in 1975, this theory is concerned with resolving problems that can exist in agency relationships due to unaligned goals or different aversion levels to risk. Generally organizations can use debt to control the agency problem this can be accomplished in two ways: Debt forces managers to be monitored by the public and regulator. If investors have negative view of management's competence, they will charge high interest rate on the money they lend to the firm or they will insist on restrictive bond covenants to constrain management's freedom or both. Outstanding debt limits management's ability to reduce firm value through incompetence or perquisite consumption, (Jensen, 1986).

### 2.1. Conceptual Framework

The study identified the dependent variable as Growth of Agricultural Credit and the independent variable as the factors affecting Growth of Agricultural Credit which include; Bank profitability Cost of Funds, Ioan size and credit risk. The conceptual framework shows in figure 2.1 indicates factors affecting growth of agricultural Credit in Kenya thereby determining the levels of growth of Agricultural Credit.



Figure 1: Conceptual Framework

# 2.2. Empirical Review

Tariq, Usman, Mir, and Aman (2014), while investigating the determinants of commercial banks profitability in Pakistan, postulates that the operational expenses of the banks have an indirect correlation with bank profit, even though they have a direct association with net interest margins of the banks. Similarly Tan and Floros, (2012) investigated the effect of GDP growth on bank profitability in China over the period 2003–2009. The one-step system GMM estimator was used to test the tenacity of profitability in the Chinese banking industry. The empirical findings suggest that cost efficiency is positively related to bank profitability, while lower profitability could also be explained by higher taxes paid by banks. In addition, there was a negative relationship between GDP growth and bank profitability. These studies however failed to establish the influence of identified factors on credit growth in agricultural sector.

Pasiouras and Kosmidou, (2007) while studying UK banking sector, identified that proficient cost supervision is one basic pillar that clarify the bank profitability. Bank expenses are regarded as very essential determinants of profitability, directly associated to concept of proficient management. As expected coefficient of cost to income ratio is inverse and positive in the study, indicating that efficiency in expenses management is a strong factors of UK bank performance and profitability.

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Emmanuel (2008) undertook a study on the impact of macroeconomics environment on agricultural sector growth in Nigeria. The macroeconomic factors included in the framework were, nominal interest rates on the loan, exchange rate, world prices of agricultural produce, foreign private investment fiscal expenditure and nominal exchange rate. Using multiple regression analytical technique (ordinary least square), he discovered that nominal interest rate was positively related to the index of agricultural production. Their study shows why these problems cause transaction costs to be high enough so that credit rationing and high interest rates are rational and efficient responses by lenders to the imperfect information problems of the agricultural sector. Hooman and Mansoori (2009) while considering factors affecting loan repayment performance of farmers in Khorasan-Razavi Province in Iran, used a logit model and a cross sectional data of 175 farmers established that loan interest rate is the most important factor affecting repayment of agricultural loans. Farming experience and total application costs are the next factors, respectively.

Oladeebo and Oladeebo, (2008) examined determinants of loan repayment among smallholder farmers in Ogbomoso Agricultural Zone of Oyo State, Nigeria. Results of the multiple regression analysis showed that, the amount of loan obtained by farmers, years of farming and credit experience and level of formal education were the major factors that positively and significantly influenced loan repayment.

Karlan, Mullainathan, and Zinman, (2013) examined a sample of forty-two financial institutions in Latin America having agricultural portfolios on measures used to mitigated against perceived risks, their access and management of credit risk. They ascertained that there was a requirement that agricultural lending be less than 40 percent of the portfolio exposure in order to reduce risk. Credit risk management is a critical part of computing the optimizing profitability of financial institutions. Policies and strategies involved in appropriate credit management system (consisting of identification, quantification, analyzing, monitoring and controlling stages) clearly indicate the issuance of credit facilities in banks and the methods used for managing credit portfolio (Saeed & Zahid, 2016).

Sonali and Amadou (2012) interrogated the credibility of risk weights in US credit market, they postulated that regulators should reappraise asset-risk measurement. Empirical evidence from their work revealed that banks with lower risk weighted assets performed better during US and European crises. Large banks investors paid less regard to risk weighted assets and rewarded instead better asset quality (lower NPLs). Their findings lead to the inference that risk weighted assets do not, in general, anticipate market measures of banks' riskiness. Implying that the relationship is negative after the 2008 crisis, this could result from the large increase in the market measures of risk, which reflect the volatility of a bank's stock price, since the 2008 US crisis.

Ngare, Kweyu, and Huka (2015) while looking at the implications of giving credit facilities to agricultural sector by banks in Kenya, found that, some commercial banks in Kenya had been giving credit to dairy farmers. They noted that, the local banking system has remained unchanging in lending to agricultural sector probably due to risks in agricultural production. They further noted that, the situation had been made worse by liberalization of interest rates. They confirmed that although there was a legal requirement that banks should lend between 17-20 percent of their loan portfolio to agricultural sector this was not implemented to the later.

# 3. Methodology

The study adopted descriptive research design, five years (2010-2014) secondary data was collected using secondary data collection matrix as shown on appendix 1. This data was collected from all KCB bank branches operating in Kiambu County. Data analysis used SPSS to generate percentages, tabulations and mean as a measure of central tendency. The study used correlation and regression analysis to justify the combined effect of the independent variables to the dependent variable. This study used the following regression model:

 $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_3 X_{4+} \varepsilon \qquad (3.3)$ Where

α	Unique factors in growth of agricultural credit
β <sub>1</sub> β <sub>3</sub>	Are the loading for variable $X$ on $X_{1} X_4$
X <sub>1</sub>	profitability
X <sub>2</sub>	Cost of Funds
X <sub>3</sub>	Loan size.
X4	Credit Risk
ε	$\varepsilon \sim N(0, \sigma^2)$

Table 1

Category	Measure	Proxy	Definition
<b>— </b>			
Dependent Variable	Loan Book	AGR. Loan Ratio	
	Bank Profitability	ROA	
		NIM	
		ROE	
Independent Variables	Cost of Funds	Loan Processing fee	Fees Charged as a Percentage of Total Loan
		Interest Rate	Cost of Loan
			Interest Charged
	Loan Size	Short (ST) and Medium term (MT) Loan	
		Long Term Loan	
	Credit Risk	Portfolio at Risk	
		Provisions at Risk	

Table 2: Operationalization of the Study Variables

# 4. Results and Discussion

Table3 gives a summary the descriptive statistics of the study. The mean for growth in Agricultural credit is 2.13991 while its median is 2.1,1664. The mean for Bank Profitability is 8.901 while its median is 9.322. The mean for cost of funds is 8.611 and its median is 8.821 while the mean for loan size is 6.2494 and the median is 6.3753. The mean for credit risk is 4.911 while its mean is 4.721 The skewness and Kurtosis are also in the acceptable range for normal curves. The diagnostics shows that data for all the variables are normally distributed (Siegel, 1988). Significant difference between mean and median evaluates the probability of z where z = (mean-median)/Standard Error mean. This is more an alternative test of skewness, and if p <= 0.05 then a significant skew exists.

	GAC (Kshs)	Bank	Cost of Funds	Loan size	Credit Risk
		Profitability			
Mean	2.13991	8.901	8.611	6.2494	4.911
Median	2.1664	9.322	8.821	6.3753	4.721
Skewness	.185	-2.209	290	.018	1.095
Std. Error of Skewness	.913	.913	.913	.913	.913
Kurtosis	1.182	4.904	-2.822	-1.411	1.660
Std. Error of Kurtosis	2.000	2.000	2.000	2.000	2.000

 Table 3: Descriptive Statistics of the Variable Bank Profitability, Cost of

 Funds, Loan Size and Credit Risk

# 4.1. Trend Analysis of Growth of Agricultural Credit

The trend analysis of growth of agricultural credit indicates that the growth has been increasing across the study period. Figure 1 shows that growth of agricultural credit was lowest in 2010 but increased steadily in 2011. The increase between 2013 and 2014 was faster compared to increase between 2011 and 2013. In 2010 growth in agricultural credit was recorded at Kshs. 148,113,364. In 2011 there was considerable growth in agricultural credit where Kshs. 198,724,919 was recorded. A difference of Kshs. 50,611,555/- from the figure recorded in 2010.

The amount of growth grew higher in 2012 and a new level of Kshs. 211,664,226 was recorded a difference of Kshs. 12,939,307. The graph in Figure 1 shows a slope that is less steep for the period 2011 to 2012 as compared to the period between 2010 and 2011 which is steeper. The slope increased slightly for the period 2012 to 2013 where a figure of Kshs. 227,721,781. The slope show a difference of Kshs. 16,057,555. The period between 2013 and 2014 recorded growth higher than the period between 2010 and 2011. At Kshs. 227721781 in 2013 to Kshs. 283732205 in 2014, a difference of Kshs. 56,010,424.

Growth of Agricultural Credit (Ksh)						
300,000,000.00 —					283.732	.205.0
250,000,000.00				227 724 7		-
200,000,000.00 —		198,724;	919.00 211,664,	226.00	81.00	- 1
150,000,000.00	148,113,	364.00				-
.00,000,000.00 —						- 1
50,000,000.00						- 1
0.00						- 1
	2010	2011	2012	2013	2014	
			M			

Figure 2: Growth of Agricultural Credit in Kiambu

This trend is comparable to that of the Indian agriculture growth pattern, which has been highly varied at the state level (Dar, 2012). Since agriculture is a state subject, the overall performance of the agriculture sector in India largely depends on what occurs at the state level. There is a wide variation in the performance of different states. During 2000-01 to 2008-09, the growth performance of agriculture in Rajasthan (8.2%), Gujarat (7.7%) and Bihar (7.1%) was much higher than that of Uttar Pradesh (2.3%) and West Bengal (2.4%).

### 4.2. Correlation Analysis

Table 3 present the Karl Pearson's correlation coefficients for the variables under study. It indicates that there exist a significant negative correlation with a coefficient of -.873 between cost of funds and growth of agricultural credit. Credit risk reported a negative significant relation growth of agricultural credit, bank profitability and loan size. This indicates that as the credit risk reduces it leads to growth of agricultural credit. Loan size reported a positive significant correlation with growth of agricultural credit and profitability while a negative correlation with cost of funds. This indicates that as loan size increases it influences positively the growth of agricultural credit.

	Growth of Agricultural	Cost of funds	Credit risk	Profitabili	Loan size
	Credit			ty	
Growth of	1				
Agricultural Credit					
Cost of Funds	873*	1			
Credit Risk	592*	.192*	1		
Bank Profitability	.733*	524*	863*	1	
Loan size	.960**	962**	412*	.684*	1

Table 3: Correlations Results

\*\*. Correlation is significant at the 0.01 level (2-tailed) \*. Correlation is significant at the 0.05 level (1-tailed)

# 4.3. Regression Analysis

The study conducted a multivariate regression analysis which would help answer the research questions and also establish the study model. Multivariate regression combines all the independent variables and determine their effect on dependent variable. The results of the multivariate regression analysis were presented in table 4. The analysis shows the coefficients of determinations as well as their respective p-values indicated as Sig. All the variables are significant. The coefficient of Bank profitability is negative showing the increased bank profitability does not necessarily result in growth of Agricultural credits. The model revealed that a unit change in bank profitability would cause a decrease in growth of agricultural credit by 2.341.

The cost of funds also has a negative coefficient, this shows that an increase in cost of acquiring funds decreases Growth in Agricultural Credit. The optimal model revealed that cost of funds are negatively associated with the growth of agricultural credit. A unit increase in cost of funds would cause a decrease of agricultural credit growth by 0.165. The coefficient of Loan Size is positive indicating that an increase in the loan amount disbursed increases growth in Agricultural Credit. The optimal model showed that a unit increase in loan size would increase the growth of agricultural credit by 2.937.

The coefficient for Credit Risk is negative showing that percentage increase in credit Risk reduces the Growth in Agricultural Credit. The optimal model revealed that a unit increase in credit risk would lead to a decrease of growth of agricultural credit by 3.632. (Saeed & Zahid, 2016) who state that based on their regression models confirm this, it is compelling and quite startling to find out that credit risk indicators have a positive association with profitability of the banks. This means that even after the deep effects of credit crisis in 2008, the banks in the UK are taking credit risks and

positively integrated with each other.				
	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

earning benefits from interest rates, fee, etc. The results also reveal that the bank size, leverage, and growth are also

			Coefficients	-	3-
	β	Std. Error	Beta		
(Constant)	43.221	.000		1.187	.000
Bank Profitability	-2.341	.000	586	-2.264	.000
Cost of Funds	165	.000	034	-7.484	.000
Loan size	2.937	.000	1.074	2.150	.000
Credit Risk	-3.632	.000	612	-2.486	.000

Table 4: Regression Analysis Output a. Dependent Variable: Growth of Agricultural Credit

### 5.Conclusion

The objective of the study was to determine the determinants of growth of agricultural credit in Kenya. The study used four proxy variables to measure the determinants of agricultural credit growth. Indicators of bank profitability determine the levels of the profits. A raise in bank profitability does not necessary imply that there is growth in Agricultural credit. From the findings, the study concludes that a percentage increase in cost of funds reduces growth of Agricultural credit. These are cost charged by the bank they include legal fee, interest rates and loan processing fee.

During the study period interest rate was capped, this regulated the profits made by banks on the loan they give to their customers. On the other hand loan processing fees is set by individual banks. Banks that are able to set these variables correctly would optimize on profits and grow their credit lending capacity. Loan size directly determines growth of Agricultural Credit. The pattern of graphs for the two variable is similar.

There is a direct relationship between growth of Agricultural credit and loan size. There were three types of loan sizes in this study; the Micro, medium and corporate loans. Like other financial institutions, banks face a number of risks and hazards which include: credit risks, liquidity risks, operational risks, exchange rate risks, interest rate risks, political risks, and all other internal and external risks. However, credit risk is considered as the most common and dangerous risk especially for the banks that can put them into deep trouble and even they may face bankruptcy.

## 6.Recommendations

Overall, these findings support the view that authorities should promote bank profitability. While authorities generally document their concerns on bank profitability by its impact on the soundness of the financial industry, we complement their argumentation by showing the growth-enhancing effect of bank profitability. Thus the position of authorities which considers low profitability of banks as a major concern is fully relevant in the broader perspective of economic growth. More importantly, it is necessary to relax demanding collateral requirements and extend the outreach so that formal lenders, can reach the poor and the asset-less. Its outreach should be enlarged and collateral requirements relaxed so that credit has its desired impact, while steps to cut down default rates should be taken at the same time.

The article describes new measures to increase membership loyalty and borrowing from program funds, including greater flexibility in repayments and savings-only accounts. It also recommends training poor borrowers in rural areas to make better use of their working capital. Since few minor negative relationships indicate that credit risk improves bank profitability, Commercial banks should be confident in minimizing the lending rates, and also decreasing commission and fee charges. It is also important for the borrowers to repay their full loans on time settled in the beginning of the agreement.

The study recommends an all-inclusive approach towards the development of agriculture financing from the policy makers, to financiers, value chain actors and the smallholder farmers. This will help to mitigate the anticipated risks that come with this lending. It further proposes more investments to be channeled to this sector as it is the mainstay of the economy.

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