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Contribution of Financial Institutions Towards Agriculture Sector Growth in Tanzania: A Case of Arusha Region

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Abstract: ***The paper assesses the contribution of financial institutions toward agriculture sector growth in Tanzania. The study adopted a case study design where Arusha Region in Tanzania was used. A mixed approach was employed where both quantitative and qualitative data were collected through questionnaires and interview methods respectively. Questionnaires were administered to farmers while the interview was conducted with loans officers from the sampled financial institutions within the study area. The qualitative data gathered through interview was analyzed through Theme Content Analysis (TCA) technique while the quantitative data gathered through questionnaires were presented and analyzed. Furthermore, inferential statistics were involved to establish the relationship among the variables. The study finds that financial institutions and agriculture financing policies have a positive contribution to the growth of the agricultural sector in Tanzania. The study recommends that the government should provide financial support to those financial institutions which provide financial loans to agricultural sector. It is also recommends that banks should offer more conducive and friendly environment for farmers to secure loans. They should make sure that interest rates are affordable and collateral requirements are minimized to the manageable level so that access to finance could be widened up for farmers.***

Keywords: Agricultural Sector, Financial Institutions, Credit Facilities, Interest Rates, Collaterals

1. Introduction

Agriculture is the backbone of the Tanzanian economy and accounts for 30% of export earnings and hires 75% of the population in the country [17]. The Agriculture Industry in Tanzania represents 29 percent of Gross Domestic Product (GDP) of Tanzania in 2015. Productivity in agriculture is one of the main determinants of fast and sustained growth in agriculture, for developed and developing countries, it remains a key economic driver and plays a critical role in eradicating poverty, particularly in Tanzania [26].

Farmer's decisions to invest and to produce are closely influenced by access to financial instruments. If appropriate risk mitigation products are lacking, or if available financial instrument do not match farmer's needs, farmers may be discouraged to adopt better technologies, to purchase agricultural inputs, or to make other decisions that can improve the efficiency of their businesses. The Tanzanian Government established "Tanzania Agriculture Development Bank" on August 2015 to work with other financial institutions in order to extend loans to farmers. Giving access to agriculture credit was part of the Government and banks were also encouraged to give loans to farmers [24].

Access to finance is critical for the growth of the agriculture sector. The shift from subsistence to commercial agricultural production requires funds. However, in developing countries, where agriculture is a source of livelihood for 70 per cent of rural people financing for investments in agriculture is scarce, even for large investors. In Africa, less than 5 percent of commercial lending is destined to the agriculture sector (IFC, 2013). Financial institutions are reluctant to accept the risks prevalent in the agricultural sector, such as droughts, floods, pests and diseases, or the transaction costs of covering large geographical distances.

Different financial instruments respond to different needs in the agriculture sector. Within each of the four groups, the financial instruments depend on the level of sophistication of the financial system in each country, and the willingness of the financers to take the risks in that particular market. Regulation and awareness programs also play a key role in the response to the financial needs. In addition to local financial institutions, foreign banks, development banks, governments and even actors in need of financial assistance, also provide financial solutions. Farmers and small entrepreneurs, like small supply companies, need finance to allow them to expand production and/ or diversify products. This can include, for example, finance for inputs (such as seeds and fertilizers), production (such as machinery and equipment) and marketing (such as processing, packaging and transport) [9].

As agriculture accounts for a large share of employment, export earnings and even GDP in Tanzania, the sector is seen as a main vehicle in any national economic. Tanzania is gifted with considerable fertile agricultural land and inland fresh water resources that can be utilized for irrigation, but much of the land is underutilized and what is utilized exhibit very low productivity.

Even though agriculture sector has a positive contribution to the Tanzania economy, but still the financial institutions lend an extremely low share of their loan portfolios to agriculture compare to the other sectors. It has been shown that the flow of lending to the agriculture sector by domestic commercial banks in 2009 decreased to Tsh.467.1 billion from Tsh.515.9 billion in 2008 (by 9.5 percent) despite the fact that the flow trend had been rising from 2005 to 2008 (BOT, 2010). Despite of the huge contribution of agriculture sector to GDP, less than 5% of commercial banks' loans go to this sector [27].

In view of the above, it can be seen that agriculture sector suffer from poor financial support. However, little research has explored why the contribution of financial institutions to the agricultural sector is very minimal. Thus, there is a knowledge gap on finance and agriculture sector growth. In this study, the focus is on how the financial institutions can contribute towards the development of agriculture sector in Tanzania.

Specifically, the paper will address the following objectives: first, to assess if financial sector development has led to higher level of agriculture productivity in Tanzania. Secondly, to examine the challenges faced by financial institutions in funding the agriculture sector in Tanzania. Thirdly, to examine the contribution of financial policies on the growth of agricultural sector in Tanzania.

2. Literature Review

Tanzania Agriculture and Livestock Policy 1997 defines agriculture as that area of human activity involving all features of crops and livestock. According to [21], farming is a deliberate effort to change the portion of the earth's surface by raising crops and animals for food and economic gain. A study by UNESCO's National Committee of the United Republic of Tanzania described agriculture as one of the top sectors in the economy of Tanzania, contributing significantly to GDP, accounting for one-fifth of foreign earnings and providing over two-thirds of the population's livelihood.. Similarly in this study, agriculture has been referred to all activities of human being involving crops and livestock of all kinds.

2.1 The Linkage between Access to Finance and Agriculture Sector Growth

There is growing empirical evidence to support the positive effects of financial inclusion on both household health and macroeconomic factors [5]. Financial inclusion plays a role in the sustainable development of the rural environment in this sense [10]. [2] claims that access to financial credit enables poor rural smallholder farmers to invest in new areas of economic activity, increase their capital sources and address the challenges they face in the process. It has been reported that the majority of poor farming households who are impoverished should cultivate the habit of saving, receive loans for development, and transfer cash to improve their standard of living [2].

Nonetheless, credit restrictions impact farm production through adverse effects on farm performance and expenditure by smallholders [12]. Many smallholder farmers prefer to fund themselves, but since most of them are financially poor, it has never been simple to self-finance the required agricultural inputs; hence, the difference between inputs and planned agricultural output remains. Money lets farmers buy vital inputs to ensure improved agricultural output, which in turn helps households fight poverty. Therefore, credit limits have strong implications for the battle against deprivation by families, as well as for the rate and distribution of income in a particular country's overall economy [17].

2.2 Review of Theoretical Literature

2.2.1 Trade-off Theory of Capital Structure

Trade-off capital structure concept is proposed by [14]. They conclude on the premise that a business decides how much debt financing and how much equity financing to use by weighing the costs and benefits they found a compromise between bankruptcy's dead-weight effects and money-saving benefits. An essential theoretical aim is to explain the fact that farming can be partly funded by debt and partly by capital. The principle notes that debt financing, debt tax incentives and debt finance costs, economic risk expenses like debt default costs and non-bankruptcy costs are advantageous (e.g. staff leaving, suppliers demanding disadvantageous payment terms and bondholder/stockholder infighting). When debt increases, the net gain of further debt increases, while the marginal cost increases, so that a business that optimizes the overall value must rely on this trade-off when deciding how much debt and equity to use for funding.

2.2.2 Net Income Approach to Capital Structure Theory

The Net Income Approach to Capital Structure Theory was proposed by [8]. He postulated that a rise in financial leverage would lead to a change in the cost of capital. In other terms, if the debt ratio rises, capital structure improves and the weighted average cost of capital (WACC) reduces, leading to a higher company price. The hypothesis suggests that agriculture could increase its value and reduce overall capital costs by increasing the debt level in its capital structure, contributing to increased productivity in agriculture.

2.2.3 Theory of Finance and Growth

The theory of finance and growth was introduced by [23]. He argues that financial intermediation plays an important role in economic growth through the banking network. Schumpeter's main argument is whether finance leads to the development of other economic sectors that include manufacturing, and he claims that banking institutions support financial companies more. Consequently, the financial institution has a dual impact on economic sector production, which includes the agricultural sector. Gold smith (1969) first stresses the former influence, which also finds a positive correlation between financial growth and the actual per capital GNP rate. The theory therefore emphasizes the function of the financial system in the development of agriculture, especially in developing countries, since the nation with a well-funded financial system will support economic growth.

2.3 Empirical Literature

2.3.1 Contribution of Financial Institutions on the Growth of Agricultural Sector

In Tanzania, [15] conducted a study of smallholder farmers exposure to bank credit and found that the value of the assets invested in farming and education were important factors influencing the accessibility of smallholder farmers to bank loans. He suggested that banks should develop new financial products that will cater for the needs of smallholder farmers. Another study found that the value of assets invested in agriculture, schooling and age were important factors influencing access to bank credit for smallholder farmers [11].

In Kenya, the agricultural sector receives only about 10 percent of the total formal credit extended to the smallholder farmers. Furthermore, for funds meant for agricultural purposes have been diverted to other uses by the borrowers, and repayment performance has been generally poor, around 35-50 percent [18]. The scarcity of agricultural credit also affects Ugandan smallholder farmers. In Uganda, supplying financial services to rural areas is more challenging than urban areas because of the higher costs and risks involved. Most of the savings and loan transactions are fairly small with the result that financial institutions face high operating costs [16].

In Nigeria, it was found that despite the contribution of agriculture of 33.5% to GDP, the amount of agricultural credit offered by commercial banks does not exceed 10.1% ([1]). The authors concluded that monetary policies must create some fund allocation system with adapted methods to promote the flow of funds to that field.

A study done in Sub-Saharan Africa, revealed that leverage is used in traditional bank loans to cover the possible mortgage risk. Nonetheless, conventional leverage is seldom accessible from small farmers. It was pointed that legal procedures for using leverage are also often complicated and expensive. Another obstacle to monitor loan default threat in agricultural loans is to model compliance effectively [6]. Small farmers rarely possess land titles which can be used as loan collateral by banks. Land is the most accepted asset for use as loan collateral, because it cannot be removed but can generally be transferred at a specific market price. Small farmers' land, however, may have a very limited value if there is no land market.

2.3.2 Contribution of Financial Policies on Agriculture Sector Growth

[22] assessed the position of the banking sector in integrated agricultural production, attempted to define the relationship between the funding of the banking sector in agriculture and overall agricultural output at national level. The results suggest a strong correlation exists in Bangladesh between the funding of the banking sector in agriculture and agricultural output. It is also clear that the loans of the banking sector make financial inclusion in Bangladesh even simpler. The report also suggested several policy measures to address the financial inclusion problems relevant to the efforts of the banking sector in Bangladesh to fund agriculture.

A study done in Nigeria to examine the correlation between Nigeria's agricultural credit and economic growth shows that there is a short-and long-term correlation between farm credit and short-and long-term economic development. Therefore, the study suggested that concerted efforts should be made by policymakers to raise the productivity level of Nigeria's agricultural sector by appropriate credit to the sector to fuel economic growth [20].

2.4 Research Gap

A number of studies have been carried out on agriculture's contribution to economic growth, other work has been carried out on variable affecting the growth of the agricultural sector, but one of the constraints often listed and yet not adequately addressed is the financial institution's contribution to the growth of the agricultural sector. Where, like any other economic sectors, agriculture relies on capital being spent for its development in agriculture. Given the agricultural sector's reliance on financial support from financial institutions, financial support from the financial institution appears unconvincing relative to the agricultural sector's contribution to the country's GDP, creation of employment and food security. Access to finance facilities is essential for the operations of the agricultural sector, in general with the diversification of agricultural exports, industrialization, where attempts are made to industrialize in which agriculture provides the industry's raw material. Thus, farmers require credit for their activities as most of these activities are capital intensive. This is a gap which has influenced the authors to assess the contribution of the financial institution to agriculture sector growth in Tanzania.

2.5 Conceptual Framework

A conceptual framework presented in this paper explains the interrelationships between independent and a dependent variable as far as the contribution of financial institutions on agriculture sector growth is concerned. In this paper, independent variables are financial institutions, challenges facing financial institutions and agriculture financial policies. The dependent variable is agriculture sector growth as shown in Figure 1.

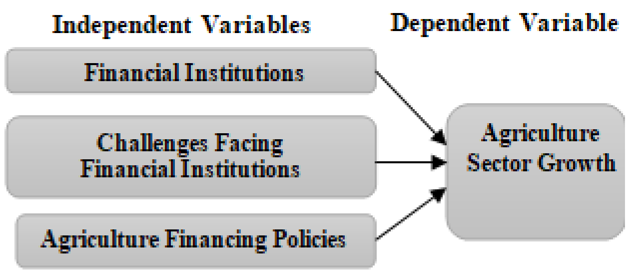

Figure 1: Conceptual Framework

2.5.1 Relationship between Variables

There has been growing empirical evidence of the positive correlation between financial credit to agriculture and development in the agricultural sector. Formal and informal loans have beneficial and important effects on the development of the agricultural sector ([3] and [4]). However, some experimental studies have found cases of inadequate credit between farmers [19]. The need and the access to financial credit have been found to be different with significant deviations and therefore affecting agriculture sector growth. Financial policies of some financial institutions affect the rate and the amounts which are set aside to be lent to agricultural firms and individuals. The more the policies favor agriculture the more the credits are advanced to them and positively influence Agriculture Sector Growth.

3. Methodology

3.1 Area of the Study

The study was conducted in Arusha region in Tanzania. The area of the study was chosen due to the fact that the area is characterized by so many emerging and growing farmers and therefore suitable for the study. Apart from that, the case study was selected based on its sensitivity and important contribution on the research interest. In this regard, the case study matched with the objectives of the study.

3.2 Population and Sample

The targeted population for consideration in this study included the farmers and financial institutions in Arusha Region. The study used a sample of 100 respondents as shown in Table 1.

Table 1: Sample Characteristics

Category of respondents	Target Population	Sample Size
Farmers	110	95
Banks' Officials	10	5
Total	120	100

3.3 Validity and Reliability of Data

3.3.1 Validity

To ensure validity, 10 questionnaires were pre-tested by distributing them to farmers, statisticians and financial institutions' officials, their opinions were positively considered and the instruments reviewed to see if they bring the intended results. The instruments brought the intended results and therefore the researchers were then confident to apply them in data collection.

3.3.2 Reliability

Reliability refers to the consistency and stability of the findings that enables the findings to be replicated [7]. A reliability analysis using Cronbach's alpha (α) was conducted to estimate the reliability of the predictor variables. Cronbach's α analysis is a useful way of determining internal consistency and homogeneity of groups of items in tests and questionnaires [7]. Ranges of Cronbach`s alpha value are $\alpha \leqq 0.30$ (Unreliable), $0.30 < \alpha \leqq 0.40$ (Barely reliable), $0.40 < \alpha \leqq 0.50$ (Slightly reliable), $0.50 < \alpha \leqq 0.70$ (Reliable), $0.70 < \alpha \leqq 0.90$ (Very reliable) and $\alpha > 0.90$ (Strongly reliable). Therefore the generally agreed upon lower limit for Cronbach's α is 0.70.

As far as this study is concerned, internal reliability of the 17 items' scale was assessed. Items assessing financial institutions had an alpha value of 0.921 and those assessing Agriculture Financing Policies had an alpha value of 0.894. Additionally the items assessing Agriculture Sector Growth had a Cronbanch alpha value of 0.937. This indicates that all the independent variables were reliable in predicting the dependent variable. Table 2 shows the Cronbach`s alpha values of all the items.

Table 2: Cronbach's Alpha Test Results

Variable	Number of Items	Alpha Value	Variable Type
Financial Institutions	9	0.921	Predictor
Agriculture Financing Policies	4	0.894	Predictor
Agriculture Sector Growth	4	0.937	Predicted

3.4 Data Analysis

The analytical model that was used is in the form of a multiple regression model. The contribution of financial institutions was determined by the equation below:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon \quad \text{....................}(1)$$

Where: Y = Agriculture Sector Growth; X_1 = Financial Institutions; and X_2 = Agriculture Financing Policy

The challenges faced financial institutions in financing the agriculture sector were analyzed qualitatively through thematic analysis technique. A similar technique was also used to analyze qualitative data collected for the other variables.

4. Presentation and Discussion of the Results

4.1 Contribution of Financial Institutions to Agricultural Growth

This study has revealed that banks offer affordable interest rates to farmers, and collateral requirements were also found to be fairly considered. It was also found that farmers had a possibility of credit renewal and majority of farmers always have timely access to credit financing. Furthermore, access to credit financing was found to have a positive significant influence on the growth of agricultural sector. These findings were a bit different from those of [15] who found that the value of the asset invested in the farming activities and education were significant factors affecting smallholder farmers accessibility to bank credit and high interest rates were some among the major obstacle hindering smallholder farmers as it influenced both output and annual increase in return.

Similarly, [11] discovered that the value of assets invested in farming activities, education and gender are significant factors affecting smallholder farmers' access to bank credit. Additionally, [1] analyzed the importance of the lack of agricultural financing in Nigeria. The results show that the contribution of commercial banks' lending in agriculture is significantly low. They further discovered that commercial banks are risk averse, therefore this behavior is indicating the shrinkage of the level of liquidity and funding shrinkage in agriculture sectors.

With regard to satisfaction of financing, the findings of the study unveiled that credits were fairy rationed and limited according the customers` ability to repay. It was also revealed that loans were adequately supplied by the banks as majority of the farmers got the applied amount and all customers who were qualified to get loans were able to secure loans. Additionally, satisfaction of credit financing was found to be positively and significantly influencing agricultural sector growth.

4.2 Challenges encountered by Financial Institutions

The results revealed several challenges which are faced by financial institutions on financing agricultural sector. First, the farmers lack collateral since majority of them do not have legal documents for land ownership. It was also found out that financial institutions face default risk due to the seasonality nature of agriculture activities. It was revealed that financial institutions face competition from informal financial sector.

The similar findings were observed by [6] who revealed that collateral is rarely available from small farmers. Also, legal procedures to use collateral are often cumbersome and costly. Likewise, small farmers rarely possess land titles which can be used as loan collateral by banks. Similarly, [13] assessed the challenges of agriculture financing in Nigeria and found that agricultural yields are generally uncertain, as natural hazards such as the weather, pests and diseases and other production calamities impact on farm output. Even slight changes in weather conditions - less rain than usual - can seriously impact on farm production leading to defaulting.

4.3 Contribution of Financial Policies.

From the findings it was discovered that government efforts as well as banks specific policies are in support of agricultural financing. The policies insure that the farmers are fairly considered just like other customers when it comes to credits, no tiresome procedures when loans are processed. Moreover, it was revealed that financial policies have a positive and significant influence on the growth of agricultural sector.

The findings were not far from those obtained by [25] who assessed the impact of Banking Sector Development on Agriculture development in Cameroon. The Granger causality test enables the researcher to conclude that there is a bidirectional relationship amongst the variables. Similarly, [22] assessed the role of Banking- sector to inclusive growth of agriculture in Bangladesh. The results suggest that there is a strong correlation between banking sectors financing in agriculture and agriculture output in Bangladesh. It is also evident that banking sector's credits are significantly facilitating financial inclusion in Bangladesh. Likewise, [20] showed that short- and long-run relationship exist between agriculture credit and economic growth in both short- and long-run respectively.

4.4 Regression Analysis

In order to supplement the qualitative results presented in sections 4.1 – 4.3 above, the paper used the Model 1 in Section 3.4 to estimate the variables in multiple regression setting and the results are shown in Table 3.

Table 3: Regression Analysis Results

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$			
Variables	Coefficients	t-statistic	p-value
Constant	-0.135	-1.142	0.254
Financial Institutions	0.208	3.234	0.001
Agriculture Financing Policies	0.833	13.722	0.000

The results in Table 3 show that both independent variables are significant at 5% or better and positively contribute to the agriculture growth in Tanzania. These results suggest that there is a significant relationship between contribution of financial institutions and the growth of agricultural sector in Tanzania. The results also suggest that there is a significant relationship between Agriculture Financing Policies and the growth of agricultural sector in Tanzania

5. Summary, Conclusion and Recommendations

5.1 Summary of Findings

The study aimed at assessing the contribution of financial institutions on the growth of agricultural sector. The results revealed that Financial Institutions and Agriculture Financing Policies were significant joint predictors of Agriculture Sector Growth in Tanzania. It was also revealed that lack of collateral, default risk and competition from informal sector were the challenges faced by financial institutions on financing the agriculture sector in Tanzania.

5.2 Conclusion

5.2.1 Contribution of Financial Institutions to Agricultural Growth

The findings of the study revealed that banks offer affordable interest rates to farmers, and collateral requirements were also found to be fairly considered. It was also found that farmers had a possibility of credit renewal and majority of farmers always have timely access to credit financing. Furthermore, access to credit financing was found to have a positive significant influence on the growth of agricultural sector in Tanzania. Similarly, satisfaction of finance was measured by considering various measures such as credit rationing, credit limits, adequacy of financing and the number of farmers who successfully secure loans from banks. The findings of the study unveiled that credits were fairy rationed and limited according the customers` ability to repay. It was also revealed that loans were adequately supplied by the banks as majority of the farmers got the applied amount and all customers who were qualified to get loans were able to secure loans. Additionally, satisfaction of credit financing was found to be positively and significantly influencing agricultural sector growth.

5.2.2 The Challenges Faced by Financial Institutions on Financing the Agriculture Sector

The study found several challenges which were facing financial institutions on financing the agriculture sector. Some of the challenges are such as farmers lack collateral since majority of them do not have legal documents for land ownership. It was also found that financial institutions face default risk due to the seasonality nature of agriculture activities. It was also summed up that financial institutions face competition from informal financial sector.

5.2.3 The Contribution of Financial Policies on the Growth of Agricultural Sector

The third specific objective evaluated the financial policies on how they contribute to the growth of Agriculture Sector. National policies on agriculture and the banks` specific policies were examined. The variable was measured by considering credit discrimination, tiresome procedures for securing loans, national financial policies and banks specific policies. From the findings, it was discovered that farmers are fairly considered just like other customers when it comes to credits, there are no tiresome procedures when loans are processed and the government efforts as well as banks specific procedures are in support of agricultural financing. Moreover, it was revealed that financial policies have a positive and significant influence on the growth of agricultural sector.

5.3 Recommendations

Following the findings of this study, it is recommended that more government efforts should be involved in supporting commercial banks and other financial institutions in terms of funds to be extended to farmers to support their agricultural activities. The Bank of Tanzania (BOT) should have a special fund to be offered to banks as a means of supplying more funds to banks and hence farmers. In addition, the government should also establish a special fund which can be loaned to farmers at very low interest rates with absence of price and non-price barriers to farmers. This could serve for those who don't have qualifications such as collateral to secure loans.

Credit facilities should be client-oriented and not product-oriented. Proper and extensive monitoring activities should be provided for clients who are granted loans. Farmers should also be trained extensively on how to manage loans in order to be able to repay back the loans.

5.4 Recommended Areas for Further Study

This study assessed the contribution of financial institutions on the growth of agricultural sector. The study involved only three variables which are contribution of financial institution on the growth of agricultural sector, the challenges faced by financial institutions in funding the agriculture sector, and the contribution of financial policies on agriculture sector growth. The three variables are not the only determinants of agricultural growth; they are also not the only functions of financial institutions as far as agricultural financing is concerned. Financial institutions also offer training to farmers who secure loans from them; specifically on how to handle their agricultural activities in a most profitable way. This study has not attempted to measure the impact of training by financial institutions on agricultural growth; other studies may consider other variables including training.

Apart from that, the study was conducted in an urban Area and therefore could have influenced the findings since in urban areas there are many banks offering loans and therefore reduce the access of finance problem. Other studies are encouraged to conduct similar studies in rural areas.

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