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The Effect of Types of Agricultural Credit Programmes on Productivity of Small Scale Farming Businesses in Kenya: A Survey of Kimilili Bungoma Sub County

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Abstract
Agricultural credit is considered as one of the strategic resources for pushing production to the high horizons consequently raising the living standards of the rural poor farming community. Harnessing the potentials of credit to stabilize and perhaps increase resource productivity and output growth in Agriculture is particularly justified when farmers face very low savings capacity, poorly developed rural financial markets and availability of appropriate farm technologies whose adoption is constrained by shortage of funds. Agriculture demands different forms of inputs to be productive, among which, credit is indispensable.Based on the need to promote an innovative, commercially-oriented and modern agriculture, Agricultural credit as a key constraint facing the farmers in food production was chosen for this study.The study examined the effect of Agricultural credit programmes on the productivity of rural farming households in Kimilili Bungoma Sub County.The study adopted a cross sectional survey design, wheredata was collected, with the use of a well-structured questionnaire, from 123 randomly selected small-scale rural farmers, who are users of micro-credit based on their statement, through multi-stage sampling technique.The data was processed and analyzed using the Statistical Package for Social Sciences (SPSS). Descriptive statistics was used to analyse the qualitative data while cross-tabulations were done to examine the relationship between variables. Farmers' perceptions about the effect of credit were measured on a likert scale. The findings of this study showed that, Agricultural credit has the capacity to enhance the income of farmers who utilize it by more than 100% and this clearly defines the role of credit in the farming sector. Credit not only helps to expand the economies of size but also helps to increase the productivity of farms from the available resources. All the three types of credit i.e. seasonal, development and agribusiness credit complement each other in addressing the value chain. i.e. production ,processing and marketing. It is recommended among other things that, the government should provide attractive incentive system to farmers so as to boost production from the smallholder sector. Along with this, "Soft loans" should be advanced to farmers on very generous terms. The findings of this study suggest that, agricultural credit is productive, but its outreach is limited to a small proportion of the population. Its outreach should therefore be expanded and collateral requirements relaxed so that credit has its desired impact. There is little doubt that, agricultural credit channeled in the right direction can have significant anti-poverty effects, and that broadening the outreach of formal lending institutions can be a step forward in the right direction.
Keywords: Credit, Productivity,Income, Agriculture credit, Seasonal credit, Development credit, Agri- business credit.

Introduction

Credit is an important element in agricultural production systems. It allows producers to satisfy the cash needs induced by the production cycle which characterizes agriculture: land preparation, planting, cultivation and harvesting of the crops are typically done over a period of several months in which very little cash revenue is earned, while expenditures on materials, purchased inputs and consumption need to be made in cash. Cash income is received a short time after the harvest. In the absence of credit markets, farmers would have to maintain cash reserves so as to facilitate production and consumption in the next cycle. The availability of credit allows both greater consumption and greater purchased input use, and thus increases welfare of the farmers.

Agriculture continues to be a fundamental instrument for sustainable development, poverty reduction and enhanced food security in developing countries. Kenya Vision 2030 clearly identifies Agriculture as one of the six key economic sectors expected to drive the economy to a projected 10 per cent growth annually over the next two decades. It also recognizes that there are more than 5 million smallholders engaged in different types of Agricultural activities in the country. Agriculture is therefore central to the achievement of Vision 2030 whose goal will be realized partly by the promotion of an innovative, commercially-oriented and modern agriculture. To make this transition in the farming sector, farmers need financial support which has been elusive and therefore commercialization of farming has not taken root among most farmers.

Most people in Kenya live in rural areas and are engaged in subsistence Agriculture as their principle livelihood, (Economic Review of Agriculture, 2012). The 2009 Kenya Population Census report indicates that, a

proportion of about 80% of the total population in the country is currently engaged in Agricultural activities. While agriculture remains a fundamental pillar for sustainable development and poverty reduction in the country, it continues to face challenges and emerging constraints at the global, regional and national levels that require urgent and special attention, (GOK, 2008). Production is constrained due to low adaptation of improved technologies, volatile markets, limited access to credit and markets and lack of business knowledge among farmers. Use of fertilizers, pesticides and improved seeds and practices are only recently gaining momentum. Most families are unable to meet their basic household needs due to low productivity of their farms.

Credit is the back bone for any business and more so for agriculture which has traditionally been a non-monetary activity for the rural population in Kenya. Agricultural credit is an integral part of the process of modernization of agriculture and commercialization of the rural economy. The introduction of easy and cheap credit is the quickest way for boosting agricultural production. Agriculture as a sector depends more on credit than any other sector of the economy because of the seasonal variations in the farmers returns and a changing trend from subsistence to commercial farming. Credit may provide them opportunity to earn more money and improve their standard of living.

Understanding the role of financial intermediation in household decisions is important for identifying the underlying determinants of economic growth and for designing effective policy in the developing world. A large body of evidence has shown that the availability of financial tools has considerable impacts on households' ability to smooth consumption, make long-term investments and manage risk, (Conning and Udry 2007). Another important consequence of financial market imperfections is the limitations that such imperfections place on the structure and organization of entrepreneurial production. Entrepreneurial activity is a key factor in economic development, with the potential to foster innovation and create employment at a macroeconomic level and alleviate poverty at the microeconomic level.

In Kenya, the small-scale sector is particularly very important and relevant for development because smallholders produce the bulk of the agricultural output. They account for 60 per cent of the total farmed area. The average size of these farms is about 2.3 hectares. The smallholder population in Kenya makes up to 5 million households who are involved in different types of agricultural activities, (Kenya Vision 2030).

In terms of agricultural production, the bulk of crops are produced by farmers who own less than 5 hectares. Apart from coffee, tea, wheat and sisal which are produced mainly on large farms, other crops are produced on small-scale farms. 90 per cent of Kenya's maize is grown by small-scale farmers. Other food crops such as sorghum, millet, rice, potatoes, beans and cassava are grown exclusively on small family holdings. Small scale farmers also produce 68 per cent of Kenya's coffee, 48 per cent of tea, 83 per cent of sugarcane and more than 60 per cent of horticultural crops, (GOK, 2009).

Based on the predominance of small-scale farming among the rural dwellers of Kimilili and the need to modernize farming to meet the food and income needs of the farmers, availability of agricultural credit as a key factor affecting the productivity of small scale farms was chosen for this study. It is recognized that, while farming has the potential to alleviate poverty and create the much needed employment opportunities, farmers have been neglected for a long time by finance institutions. Many of the banks consider farming as a high risk business yet farmers require financial support to meet the ever increasing costs of production and adopt modern technology in order to increase productivity of their farms and hence enjoy profits.

In view of the above, smallholder farmers no doubt deserve special attention and Agricultural policies that can serve as incentives and increase their productivities would be worthwhile. In other words, major efforts have to be directed in Agricultural institutions in the field that can assist smallholders to increase the productivity of their farms. In particular, financial institutions can play a key role in this scenario since the other support institutions such as research and extension are already working closely with farmers. The knowledge and skills therefore exist as far as production is concerned and what farmers lack are the resources to support production.

2.0 MATERIALS AND METHODS

2.1 Study Area

The study area are Kimilili and Kamukuywa Divisions of Bungoma County.Bungoma County is in western Kenya and runs along Kenya Uganda border with a population of 1,375,063. It borders Busia Kakamega and Trans Nzoia Counties. The climate favours agriculture as temperature ranges between 15 degrees and with upper maximum of 30 degrees centigrade and average rainfall of 1500mm per annum. Due to favourable climate it is regarded as highly agricultural county capable of producing a substantial amount of Nation's food stock. Bungoma County covers an area of 3032.2 km^2.

2.2 Target Population

The population in this study consisted of farmers who had gained access to agricultural credit from Agricultural Finance Corporation (AFC) and the Agricultural Credit Guarantee Scheme. The farmers were drawn from the two divisions of the district namely Kamukuywa and Kimilili. This constituted 123 respondents for the sample.

2.3 Sampling Procudure

The farmers were picked by following the random sampling procedure in the two divisions of Kimilili Bungoma Sub-county. Quota sampling procedure was also used to pick respondents from each of the two Divisions of the District namely Kimilili and Kamukuywa divisions who have benefited from each credit scheme. This implies each scheme had its own quota of 104, 14 and 5 respondents representing farmers who have benefited from seasonal, development and agribusiness credit schemes respectively. The respondents were identified with the assistance of the agricultural extension officers. A sample of 123 farmers was chosen using quota sampling and purposive stratified sampling used to identify only those farmers who go to the extent of seeking the availability and use the credit facilities from the agriculture finance Corporation (AFC) and the Agricultural Credit Guarantee Scheme in Kimilili Bungoma Sub-County.

2.4 Data Collection and Analysis

The researcher with the assistance of agricultural extension officers in the area collected data from the farmers using the questionnaire. Interviews and observation were also used to probe for more information. The questionnaires were given to farmers who had accessed credit in the two divisions that make up Kimilili Bungoma Sub county and those who were semi- literate were guided in filling the questionnaires.

The data so generated was analysed using Statistical Package for Social Scientists (SPSS).Both descriptive statistics and cross tabulations were used in analyzing the data. Descriptive statistics was used to analyse the qualitative data while cross-tabulations were done to examine the relationship between variables. Farmers' perceptions about the effect of credit were measured on a likert scale. Data was summarized using means, frequencies and percentages and presented in form of tables, bar graphs and pie charts

3.0 RESULTS AND DISCUSSION

3.1 Social- economic characteristics of the farmers

3.1.1 Distribution of respondents by Position in the farm

The position of the respondents in the farm was investigated as it is understood that, owners of farms are not necessarily the managers and may not be actively involved in farming.

Table 3.1: Position in the farm

Position in the Farm	Frequency	Percentage (%)
Owner	113	92
Owner / Manager	9	7
Manager	1	1
Total	**123**	**100.0**

The table above shows that, 113 (92%) of the respondents were owners of the farm, 9 (7%) owner / manager and 1 (1%) manager respectively. This clearly shows that, the owners of the farms are not necessarily the managers.

3.1.2 Age of the respondents

The respondents were asked to indicate the age category they belonged to which ranged from 15 years to 45 years and above. This was carried out to establish the age category that was more involved in credit use in farming. The results of the findings are presented in Table 4.2.

Table 3.2: Age in Years

Age in Years	Frequency	Percentage
Between 15-35	5	4
36 – 45	41	33
45-and above	77	63
Total	**123**	

The table above shows that, 5 (4%) of the respondents were aged between 15 - 35 years, 41 (33%) between 36 - 45 years, and 77 (63%) 45 years and above. The research revealed that, the middle aged people are the ones actively involved in credit use. It was further observed that, young school leavers between the ages of 18-25 years were yet to embrace farming and credit use. This concurs with the findings of A. Olanyi and J. Adewale (2012), who in their study in maize production among rural youth in Nigeria, found out that the middle aged people are more involved in agricultural activities than very young people.

3.1.3 Distribution of respondents by gender

The gender composition of the respondents was investigated to determine the category which sought credit most and to determine if there was any gender bias in access and control of credit.The result of this is shown in figure

4.3.

Table 3.3: Distribution of Respondents by Gender

Gender	Frequency	Percentage
Male	83	67
Female	40	33
Total	**123**	**100**

The research findings indicate that, 83 (67%) of the respondents who had accessed credit were male and 40 (33%) were female. This shows that, women were not as actively involved in sourcing for credit as men. However, it was observed that, women are the ones most actively involved in farming and men are the heads of the households and are responsible for decision making pertaining to agricultural activities to be carried out by the women. They own the land and have to be consulted to provide the collateral needed to finance purchase of farm inputs.This contradicts the findings of Gwary M., Kwaghe P., and Jaafar-furo M. (2011), who found that males constituted the highest percentage (55%) than their female counterparts (45%) in agricultural production in a study done in Michika area of Adamawa state of Nigeria.

3.2. Credit and its impact on farm productivity

3.2.1 Type of credit facility obtained

This was investigated to establish the credit facility most sourced after.

Table 3.4: Credit Facility obtained from AFC& ACGS

Credit Facility from AFC& ACGS	Frequency	Percentage (%)
Seasonal Credit	104	85
Development Credit	15	12
Agribusiness credit	4	3
Total	**123**	**100**

The results indicate that104 (85%) of the respondents had acquired Seasonal Credit, 15 (12%) of the respondents had acquired Development Credit while only4 (3%) had gone for Agribusiness Credit. This shows that Seasonal credit was the most sought after and popular among the respondents.

3.2.2 Seasonal credit

The seasonal credit was given mainly to grain and horticulture farmers to help them purchase farm inputs requirements like seeds, fertilizers and chemicals. The interest rate ranged from 12%-15% and the repayment period was 1 year because the crops are expected to mature within 12 months. The loan targeted small scale farmers with less than 5 acres of land. Loan amounts ranged between Kshs10, 000 to 50,000.

3.2.3 Development credit

The development loan was available mainly from AFC and was given to large scale farmers for dairy, to establish cash crops like tea, coffee, sugarcane, fruit trees, bananas and for purchase of farm machinery and equipments. The interest rate was 1.25% per month. These were long term loans with a repayment period of between 3-5 years and the loan amounts were from Ksh.100, 000 and above depending on individual requirements and the ability to repay.

3.2.4 Agri-business credit

The agribusiness credit facility is usually given to agro-dealers, importers, agro processors and input manufacturers to finance business working capital and operational needs. It was a requirement that the agribusiness entrepreneur must be trained/certified and recommended to the bank by the Agricultural Marketing Development Trust (AGMARK).The applicant must already be in business for 1 year. The interest rates were 1.25% per month and the loan repayment period 3 years.

3.2.5 Loan size

This was important to give an indication of the level of investment the respondents had done. The results are shown in table 4.11

Table 3.5: Respondents by Loan Size

Loan Size	Frequency	Percentage (%)
<50,000	97	79
50,001-100,000	11	9
100,001 -200,000	11	9
200,000 and above	4	3
Total	**123**	**100**

From the table above, it can be seen that, 97(79%) of the respondents obtained loan less than Kshs.50, 000, 11(9%) between 50,001-100, 000, 11(9%) between 100,001-200,000 while a paltry 4(3%) obtained loan above Kshs. 200,000.

3.3. Effect of credit in the farming business

Two aspects were investigated to establish or determine what impact credit had on the production per unit area and also on the income levels of the respondents. It is assumed that, increased production per unit would translate into more earnings for the farmers and hence higher income at household level.

3.3.1 Effect of seasonal credit on productivity

Farmers in Kimilili District are predominantly maize farmers, maize being their major staple food and source of income. The findings of this study indicate that, farmers who had accessed credit were able to raise the level of production from 10 bags per acre to between 15-20 bags per acre. This was attributed to the ability of the loanees to purchase the right quality seed and optimum use of fertilizer facilitated by the loan facility. This translated into higher net farm profits and improved standards of living. The potential for the district is over 30 bags per acre but many farmers were not able to reach that level of production due to poor management practices, unreliable weather and lack of or inadequate technical skills among farmers. Farmers were also reluctant to adopt new technology e.g. high yielding new maize varieties due to ignorance and cultural reasons.

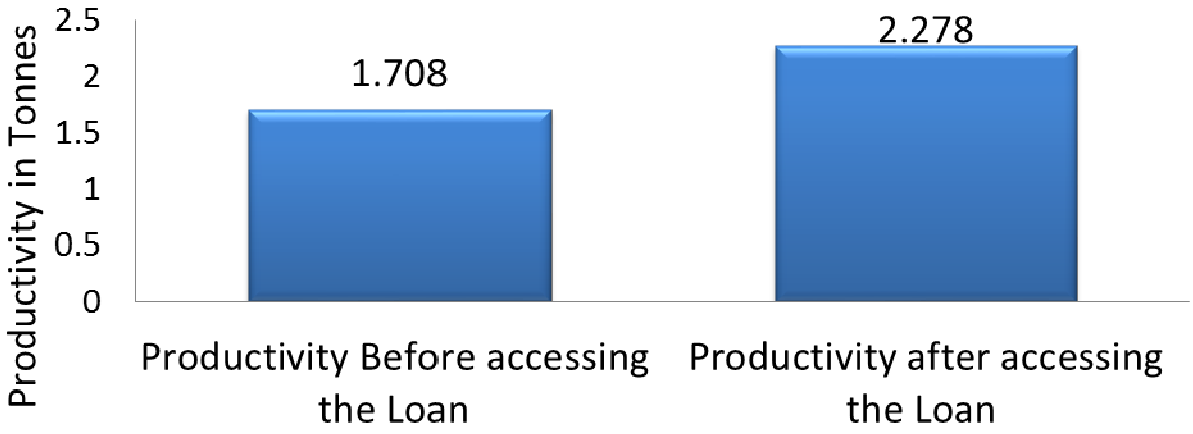

Figure 4.1: Effect of seasonal Credit use on productivity

From the above graph, it can be seen that, there was a very significant increase in productivity after accessing the Loan as illustrated in the bar graph below. This could be attributed to use of improved technology, optimal use of production inputs and also improved efficiency in production such as timeliness in operations.

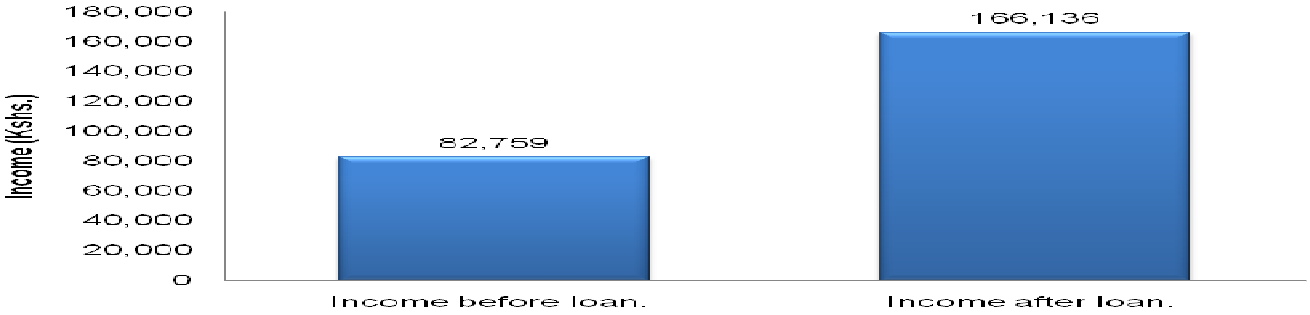

Figure 4.2: Effect of seasonal Credit on Income

From the graph above, it can be clearly seen that, there was a significant increase in income after accessing the loan.

The introduction of the horticulture loans enabled farmers adopt high value crops and embrace technology such as the greenhouse tomato production. The farmers were also able to purchase hybrid seeds (F1) which are high yielding and pest and disease resistant. Growing of high value crops increased returns per unit of land since these crops utilize relatively smaller pieces of land compared with maize. Farmers were however discouraged by lack of market for crop. Lower than optimal yield was attributed to poor management.

3.3.2 Effect of development credit on productivity

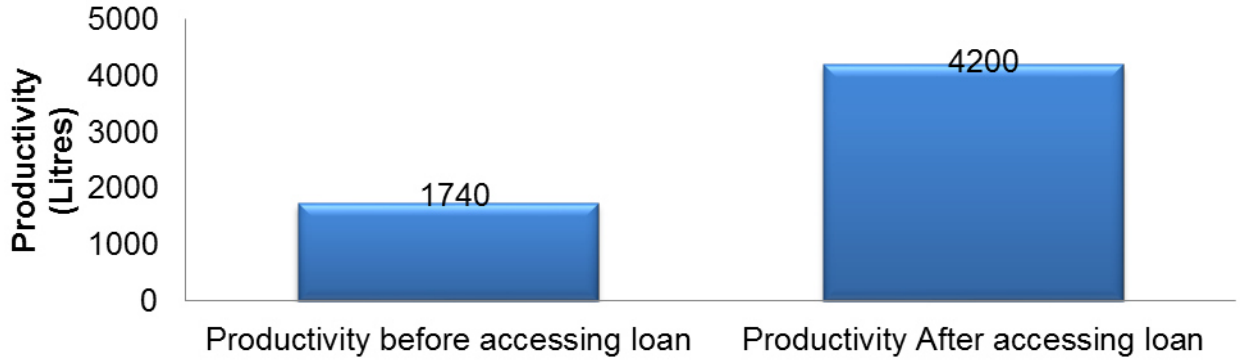

Figure 4.3: Effect of development credit on Productivity

The livestock development loan enabled farmers to purchase improved high yielding livestock breeds which produced 10 times more than the local breeds. The loans also enabled the farmers to purchase high quality concentrate feeds and mineral salts which further increased the yield per animal. Diseases and ticks management was also enabled hence reducing costs of treating animals. Lower management costs resulted into higher returns and better quality products. However, the research revealed that, many farmers were not ready to do away with their local breeds and replace them with improved breeds for customary reasons. The few farmers who had attempted to improve their breeds were having the crosses and not pure breeds. The full potential for milk production was therefore yet to be exploited.

The machinery loans enabled farmers to purchase farm machinery and implements, pick-ups and tractors for transporting farm produce and processing machines. The farm machinery and implements were particularly very useful and instrumental in improving productivity of the farms because with the right equipment, land preparation was done efficiently and timely. As a result, farmers were able to plant on time, germination percentage was enhanced and the general quality of the crop improved. This translated into higher returns per unit area. Better quality product meant better prices and therefore higher returns.

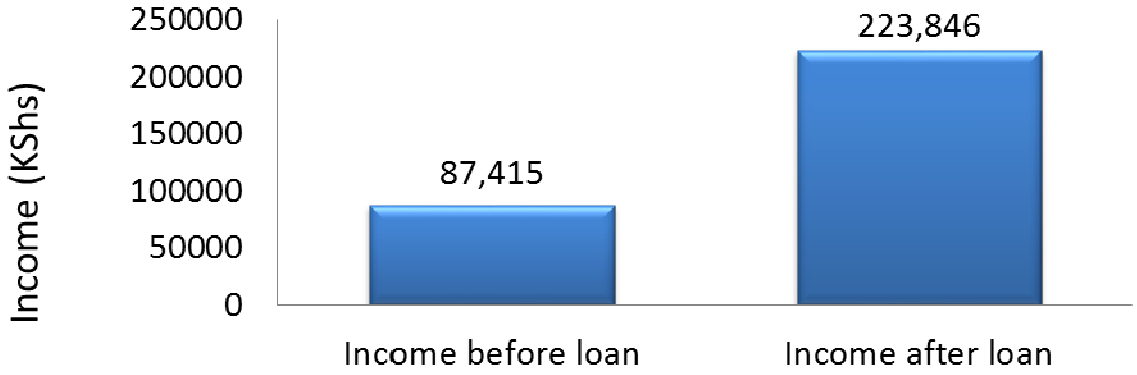

Figure 4.4: Effect of development credit on Income

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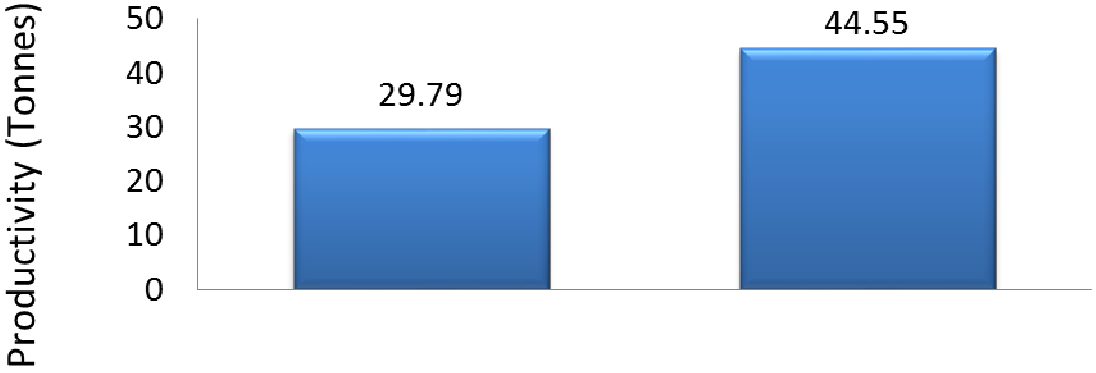

Figure 4.5: Effect of Credit on Productivity

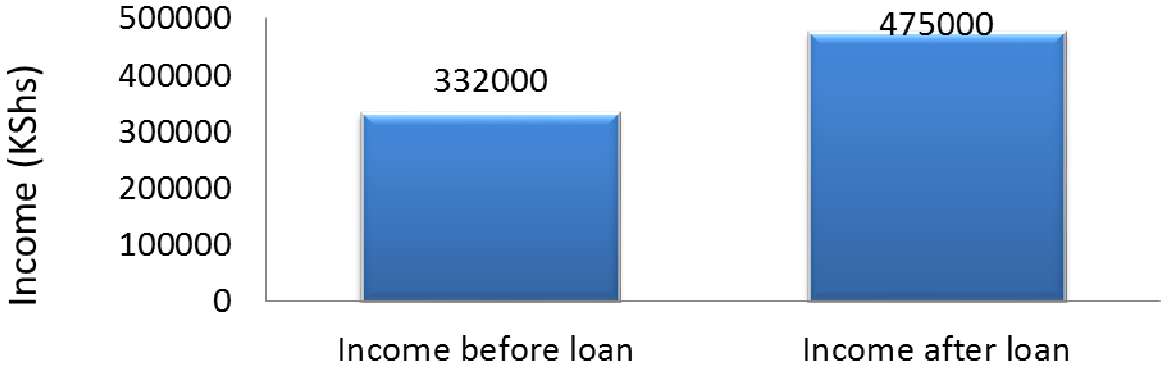

Figure 4.6: Effect of development credit on Income

3.3.3 Effect of agribusiness credit on productivity

The agri-business loan which targeted groups and individuals engaged in agribusiness-activities such as agro-dealers, marketers of farm produce, importers, agro processors and input manufacturers to finance business working capital and operational needs and hence promote efficiencies along the value chain was yet to take root among the farmers and did not have a direct effect on productivity. By targeting all players along the value chain, the efficiencies required in production, processing and marketing could be enhanced and profits along the value chain streamlined.

The most significant loans taken under this credit programme were those taken by maize traders to purchase maize from farmers and resell at higher prices to millers and consumers mainly in Bungoma, Busia, Kakamega and Kisumu counties. The effect of this credit on volumes purchased and income is as illustrated in the table below.

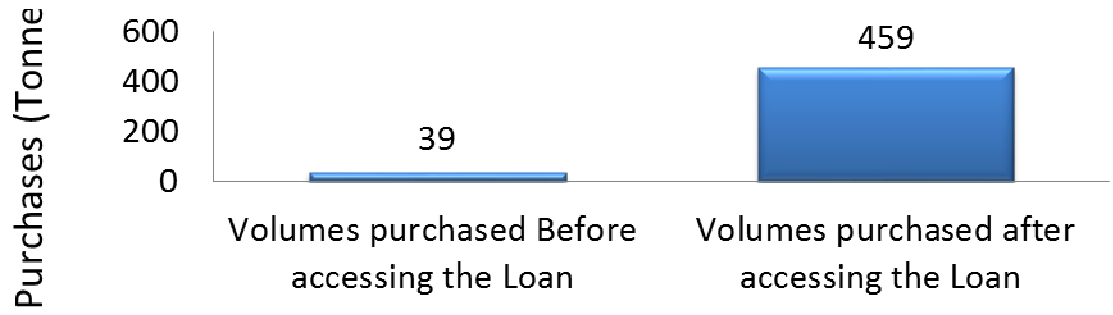

Figure 4.7: Effect of agribusiness credit on productivity

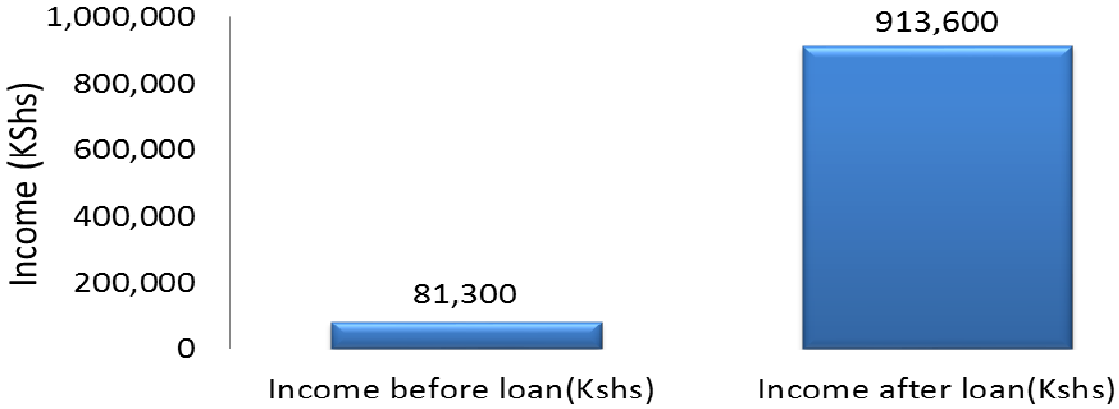

Figure 4.8: Effect of development Credit on Income

Of particular interest were the loans advanced to farmer groups which had enabled them open consumer shops where they stocked farm inputs and retailed to members at subsidized prices. This minimized the cost of production resulting in higher returns. The farmer groups were also able to purchase processing machines for value addition of their produce which enabled them to fetch better prices and also differentiate their products and widen their market outlets. Value added products also had a longer shelf life meaning that the farmers could store their produce if the prices were not favourable and sell later when the prices were better.

3.4. Challenges in accessing credit facility

Table 3.6: Challenges in Accessing Credit facility

Respondents	Frequency	Percentage (%)
Poor Loan processing	5	4
Delayed loan delivery/poor recovery methods	4	3
Lack of Information	3	2
Harassment from bank officials	3	2
Lack of appropriate collateral	108	89
Total	**123**	**100**

Lack of appropriate collateral was the biggest challenge in accessing credit especially for the AFC loans. Poor and delayed loan processing was also significant.

4.0 Conclusion

The first objective of the study was to find out the effect of seasonal credit on productivity of the small scale farming businesses. The findings of this study indicate that, farmers who had accessed seasonal credit were able to increase productivity of their farms by 33%. This was attributed to the ability of the loanees to purchase the right quality seed and optimum use of fertilizer facilitated by the loan facility. This translated into higher net farm profits and improved standards of living. Seasonal credit therefore has a positive effect on productivity and subsequently incomes of the farmers but the benefits are shortlived. The loan howeverfails to take into consideration other requirements such as cost of ploughing, weeding ,pest and disease control and this leads to poor management practices which affects productivity of the farms.

The second objective was to determine the effect of development credit on productivity. The livestock development loan increased productivity by 141% while the cash crop loan increased productivity by 50%. The livestock development loan enabled farmers to purchase improved high yielding livestock breeds which produced three times more milk than the local breeds while the cash crop loan enabled farmers to invest in high yielding varieties such as the tissue culture bananas. The study also revealed that, development loans enabled farmers to invest in long term investment such as irrigation, processing machines, farm machinery and implements. It can therefore be concluded that, development loan is highly productive and the benefits long lasting.

The third objective was to investigate the effect of agribusiness credit on productivity. The study found out that, this type of credit did not have a direct effect on productivity but had a very significant effect on income earned. This was attributed to the ability of the traders to purchase and consolidate large volumes of produce at the onset of harvesting when prices are very low and selling later at significantly higher prices. This type of loan was yet to take root among the farmers and the uptake was therefore very low.

The findings of this study also revealed that, development credit had the greatest impact on productivity and had long term effects compared to the other types of credit. However, seasonal credit was the easiest to access and therefore most sought after and had the highest uptake whilst the response to agribusiness credit was very poor. It can therefore be concluded that, credit has a positive impact on productivity.

These findings are in line with Carter (1989) who opines that, Agricultural credit can move farmers along the production surface more efficiently: firstly, credit influences the efficient resource distribution by overcoming constraints to purchase inputs and use them optimally which shifts the farmer along a given production surface to a more intensive input use; secondly, credit may help to purchase a new technological package (including high yielding hybrid seeds, drip or sprinkler irrigation system etc.) that will shift the production surface; and thirdly it may help to use more intensively the use of fixed inputs.

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