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## Assessment of the Influence of Coffee Cooperatives Activities on Member's Welfare: A Case Study of Cocamu Cooperative, Rwanda

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### **Abstract:**

*This study was carried out to determine the effect of coffee cooperatives on the welfare of its members. The specific objectives included; to determine the effect of micro-credit accessibility on welfare of coffee cooperative members, to examine the effect of trainings on welfare of coffee cooperative members, to establish the effect of access to inputs on welfare of coffee cooperative members and to determine the relationship between coffee cooperatives and member's welfare. The study employed descriptive study design t which included correcting primary data using structure questions. The target population comprised of 230 members from COCAMU cooperative in Kirehe District. The sample size for the study was 146 members determined using Slovin's formula for sample size determination. Random sampling technique was used to select the samples. The study utilized questionnaires as instrument for data collection. The questionnaires consisted of close ended questions were used to ensure that only relevant responses were given. The collected data was analyzed quantitatively using descriptive statistics, which included frequencies and percentages. Pearson correlation analysis was also done to establish the relationship between the study variables. Findings of the study were presented using frequency distribution table pie charts and bar graphs. The study findings revealed that most of COCAMU cooperative members were old people and the young people were not part of the cooperative. Also the findings showed that the cooperative offered trainings to members although some members felt the training was not adequate. Positive and significant relationships between microcredit access, training, access to inputs and welfare of cooperative members ( $r=0.441$   $p<0.01$ ,  $r=0.528$   $p<0.01$ ,  $r=0.219$   $p<0.05$ ) respectively. The study concluded that cooperative can improve the welfare of its members and even attract more farmers to join the cooperative through provision of microcredit training and inputs to cooperative members. The study recommended that a study that will look at the challenges facing coffee cooperatives would be carried out.*

## **1. Introduction**

### *1.1. Background of the Study*

The government of Rwanda views cooperatives as a potential vehicle through which the cooperatives members could create employment and expand access to income-generating activities, develop their business potential, including entrepreneurial and managerial capacities through education and training; increase savings and investment, and improve social well-being with special emphasis on gender equality, housing, education, health care and community development (GSDRC, 2011). Cooperatives plays an effective role in developing and sustaining local communities, not only in providing local services and meeting local needs but also in providing local employment and capacity building in terms of skills development, business development, and employment (ICA, 2006). Although cooperative movement is regarded as a good channel of reaching to income generating activities, there are few researches which provide information about the role of cooperative on welfare of its members with the example of coffee cooperatives which are the major agricultural financial institutions.

### *1.2. Statement of the Problem*

Rwanda's strategy of fighting poverty, like in most African countries, is through the establishment of cooperatives, which is seen as a means to empower citizens economically (Nambi 2008). Formation of coffee cooperatives in Rwanda is promoted by the government as a means to improve the performance of the coffee sector and to improve farmers' social well-being. There are about 80 active producer cooperatives in Rwanda. However, only about 20 percent of the 390,000 coffee farmers have joined cooperatives. This low level of membership weakens the farmers' organizations and hinders coffee sector training and monitoring initiatives (Chemonic International, 2010). However, the Government of Rwanda has developed a new policy and created an agency called Rwanda

Cooperative Agency whose purpose is to facilitate all round development of the cooperatives in the country in order to make a significant contribution to the national economy (RCA, 2006).

The fact that the cooperatives are being promoted through the Government policy does not guarantee immediate and satisfactory membership. The Coffee Census Report done in 2009 shows that the cooperative spirit within the coffee sector in Rwanda remains surprisingly fragile and is poorly developed. Inadequate evidence of the effect of cooperatives on member's welfare from which the farmers can see positive effect of the cooperatives to members can be linked to low membership. Although inputs and credits offered by the cooperatives have been seen to improve the welfare of farmers, borrowing of loans and taking inputs such as fertilizers on credit from the cooperatives have been reported to affect the economic welfare of some farmers. This is especially when the amount spent in production does not match the income generated after sales of the coffee. This leaves the farmer with debt to be cleared during the next season. Available literature shows that no study has been undertaken on the effect of cooperatives in Rwanda on the welfare of members. Thus this study was undertaken to determine the influence of cooperatives on member's welfare in Rwanda.

### 1.3. Objective of the Study

#### 1.3.1. General Objective

The general objective of this study was to determine the influence of coffee cooperatives on the welfare of their members

#### 1.3.2. Specific Objectives

The study was guided by the following objectives

- i. To determine the influence of micro-credit accessibility on welfare of coffee cooperative members
- ii. To examine the influence of trainings on welfare of coffee cooperative members
- iii. To establish the influence of access to inputs on welfare of coffee cooperative members
- iv. To determine the relationship between coffee cooperatives and member's welfare

## 2. Literature Review

### 2.1. Coffee cooperatives in Rwanda

In Rwanda, the government policy encourages farmers to be members of cooperatives. The Cooperatives Policy document (MINICOM, 2006) states that cooperatives movement in Rwanda started in the colonial period, mainly as a tool for promoting colonial interests. At the time of its independence in 1962, Rwanda had 8 registered cooperatives with 22,475 registered members. These cooperatives were mainly involved in social activities (such as community work and creation of strong sense of community), and in the development of the mining sector and cash crops (such as tea, coffee and pyrethrum). After independence, the Government of Rwanda used these cooperatives as instruments of implementation of its policies and plans.

In the 1960-1970 decade, new cooperatives emerged around development initiatives, especially in the handicrafts and artisanal activities supported by the Catholic mission. The 1970s decade experienced a strong intervention of the government in the cooperatives sector which led to the creation of other cooperatives, such as savings and credit cooperatives, to ensure security of savings and distribution of credit. By 1992, about 8,750 cooperatives had been registered (MINICOM, 2006). After 1994, due to political crisis, there were only about 100 cooperatives that were operational in Rwanda, mainly in the rural areas. Rural cooperatives continue to be conceived as organizations established by members "as vehicles to provide services to them" (Braverman *et al.*, 1991). Cooperatives have helped substantially in supplying agricultural inputs and materials and the commercialization of agricultural and handicraft products (MINICOM, 2006).

In Rwanda's development cooperatives play a significant role by generating employment, they improve conditions of life of members, help reduce poverty, improve access to credit, assist in procurement and storage, helps in distribution of inputs and marketing products and raise employment like in agriculture (MINICOM, 2006).

### 2.2. Conceptual framework

Coffee cooperatives performance relies mostly on how the coffee farmers are doing in their coffee farms. Coffee farmers on the other hand join cooperatives because of the benefits they expect to get from the cooperatives in regards to improved coffee production and welfare. Without coffee farmers, there would be no operational coffee cooperatives in Rwanda. This study has conceptualized the independent variables into inputs and credit accessibility as well as training. The dependent variable is the welfare of the cooperative members which was looked at in terms of living standard, women empowerment and social economic development.

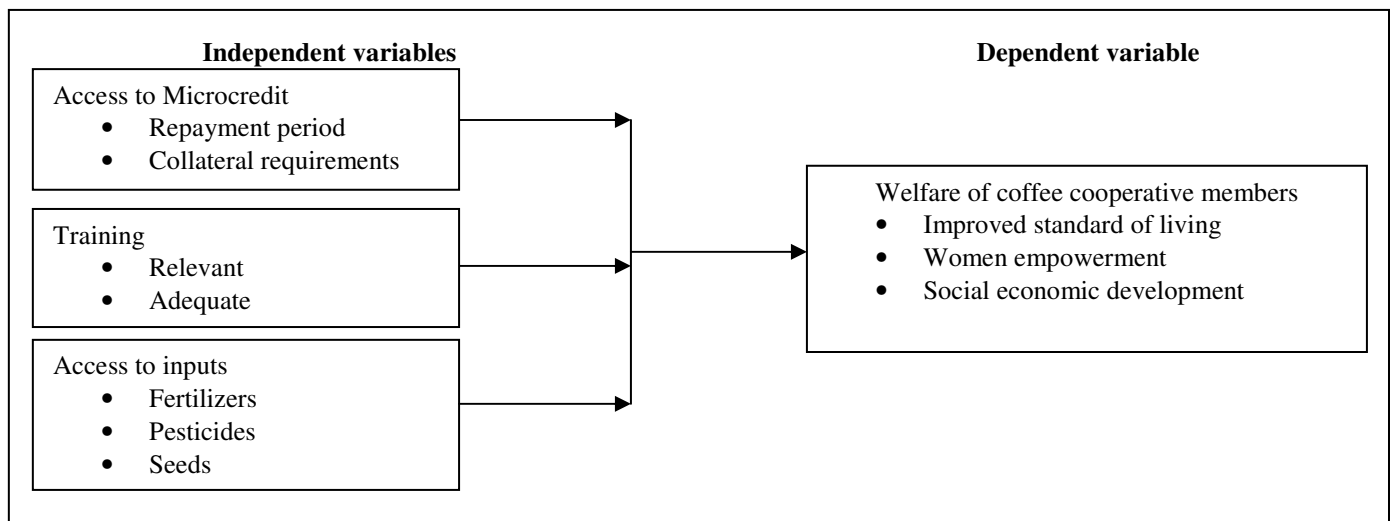


Figure 1: Conceptual Framework

### 2.2.1. Access to Microcredit

Coffee farmers especially in the developing countries are faced with numerous challenges during coffee production with the major problems being limited access to credit (Bastin & Mateucci, 2007). According to CBK (2012) input distribution, difficulties in accessing credit facilities as well as high cost of labor and limited extension service are among the main hindrances in coffee production in developing countries.

Tilahun (2007) argues that cooperatives are expected to render various services like payment of patronage refund, price information, provision of credit, transportation services, training, Better price than other traders, genuine scaling, accessibility to sell produce, storage services, immediate payment, management/ expert advice and activities in environmental services. The cooperatives should promote savings plans and credit programs to the farmers (Martínez-Torres, 2006). This would help farmers to sustain their production and income steadily instead of stagnation. Farmers who access credit facilities through their cooperatives has been able to better their coffee production and the welfare of their families through educating their children and investing in other income generating activities (Tilahun, 2007)

### 2.2.2. Training of Farmers

Training farmers on matters related to coffee growing and the role of cooperative in coffee is important and. If the farmers are not trained, they may not join cooperatives and may not be able to overcome challenges that come with coffee growing. Trained farmers on the other hand will be able to deal with any available opportunity and increase their production. Training and development is becoming increasingly more important in the quest for increased performance. This is because they act as a means to help workers become better performers. This is because educating workers is a means to help them become better performers (Wang & King, 2009). DuBrin (2009) says that training and development deal with systematic approaches to improve farmer's skills and production. Training is any procedure intended to foster and enhance learning among people and particularly directed at acquiring relevant skills. Training can develop both hard skills (technical, scientific, and numerical) and soft skills (interpersonal skills and attitudes). In Uganda, a Guatemalan National Coffee Association company operates local offices that give farmers access to technical seminars and workshops, regional coffee fairs and other services (Thurston et al 2013). During land reform programmes, the beneficiaries fail to be trained on coffee production hence its production goes down. The beneficiaries sometimes tend to change the type of crops in their farms by replacing the available coffee plantations with more 'manageable' crops (Chikuwa, 2013). This trend has led to coffee cooperatives with less or no work to do for the farmers. The results of output would improve because farmers would be able to tackle problems and challenges that may be encountered if training of farmers can be given priority to the cooperatives concerned. This would as well improve the sustainability of the cooperatives since there would be marketing for coffee all seasons due to high productivity achieved by farmers.

In support of coffee quality improvement and getting a sustainable coffee price enhancement, NAEB through PRICE project organized training of all Zone Coffee Extensionists and the coffee cooperatives in order to improve their capacity building and acquire more knowledge on certification and verification programs. The participants to the training are all ZCE coffee cooperatives from all the provinces. All the trainees were expected to use the skills acquired to build certification and verification capacity within the national coffee farmers' cooperatives. Ultimately the project purpose will be to increase the quality and quantity of certified / verified coffee produced and processed within the Country through training of farmers (NAEB, 2014).

### 2.2.3. Access to Inputs

Buchanayandi (1996) argues that farmers are likely to increase coffee production provided that they were provided with relevant inputs and extension advice. However, cooperatives should subsidize the prices for the inputs for their members. Farmers in most rural areas within the coffee growing regions face difficulties accessing quality inputs. While the selling price for coffee may be higher,

farmers also have to factor in the variable cost of buying seeds and fertilizer before deciding to expand their production. Cooperatives have played a major role in the agricultural industries of all developed countries and many developing countries for well over a century. They have been important in farm supply, providing fertilizer and other inputs, and product marketing including transport, storage and processing (Yue, 2003).

According to Kelly and Foote (2013) customized farm credit helps individual producers to purchase inputs like organic fertilizers and seed stock to increase agriculture productivity or adapt to climate change. However, access to loans to buy these inputs has also be a problem for many coffee growers. CBK (2012) notes that in Kenya, apart from financial services and Coffee processing, Co-operative societies are expected to provide farm inputs either in cash or on credit to their farmers. They are also expected to provide technical services such as extension and advisory. However, these services have ceased in recent past due to poor management within the cooperatives, leaving the farmers to source inputs by themselves.

### 3. Research Methodology

#### 3.1. Research Design

Research design is the plan for carrying out the research study (Kombo and Tromp, 2006). This research used descriptive research design. It was a case of COCAMU cooperative in Kirehe District of Rwanda. Descriptive design is normally used when collecting information about people's attitudes, habits or opinions on the issues under study (Heppner et al 2008). According to Yin (2009), the case study design offers the benefit of studying phenomena in detail and in context, particularly in situations where there are many more variables of interest than there are observations.

#### 3.2. Target Population

Mugenda and Mugenda (2003) defined target population as the population the researcher studies and whose findings are used to generalize the entire population. The target population for this study was members of COCAMU cooperative. The target population for this study included 230 members of COCAMU cooperative. The population included both men and women. COCAMU cooperative started its activities in 2003 with 40 members and now has 230 active members (SNV, 2014).

#### 3.3. Sample Size

A sample size of 146 cooperative members was recruited to the study. The Slovin's formula for sample size determination was used to calculate the sample size.

$$n = N / (1 + N e^2)$$

Where;

n= Sample size

N=Total population size (230)

e= 0.05 level of significance

#### 3.4. Sampling Procedure

Sampling is the selection of samples of study participants from the population such that the samples are representative of the entire population under study (Griffiths, 2009). This study employed simple random sampling to obtain samples that are representative of the target population. Simple random sampling ensures that each person within the study population has equal chances of being included in the sample (Mugenda and Mugenda, 2003). The respondents were assigned numbers which were then placed in a container and mixed thoroughly. The researcher then picked one number at a time without replacement until the determined sample size was achieved

#### 3.5. Data Collection Methods

The study was based on primary data collected through questionnaires. The questionnaire consisted of both open and closed questions regarding effect of cooperatives on member's welfare. Questionnaire is a set of questions arranged in particular order as per study objectives. Collecting data through questionnaire less costly, less tiresome and the instrument can be emailed to the study participants (Kothari, 1999) hence it was the appropriate choice for this study.

#### 3.6. Data Analysis and Presentation

Before processing the responses, the completed questionnaires were edited for completeness and consistency. The data was then coded to enable the responses to be grouped into various categories. The data collected was mainly quantitative; however, some qualitative data was collected from the open ended questions. As such, descriptive statistics were employed and used to summarize the data. This included percentages and frequencies. Descriptive statistics were used to measure the quantitative data which were analyzed using the descriptive analysis. Frequency distribution tables, pie charts and bar graphs were used to present the findings for ease of understanding and analysis. In addition, inferential statistic specifically Pearson correlation analysis was used to determine the relationship between the independent and dependent variables.

#### 4. Research Findings and Discussions

##### 4.1. Demographic Characteristic

The study sought to determine the demographic characteristics of the study respondents. Gender, age, marital status, education level and duration of membership of the respondents were among the studied characteristics.

Characteristics	Frequency	Percentage
<b>Gender</b>		
Male	62	55
Female	50	45
Total	112	100
<b>Age</b>		
31-40 years	24	21
41-50 years	59	53
51-60 years	28	25
>60 years	1	1
Total	112	100

Table 1: Distribution of Gender and Age of respondents

Table 1 indicates that majority (55%) of the respondents were male while female respondents constituted 45%. This implies that COCAMU cooperative has more male members compared to female. However, the percentage of gender representation in the cooperative membership does not vary greatly. The findings can also be taken to imply that women just like men have the opportunity to join coffee cooperatives. Further the study shows that majority (53%) of the members aged between 41-50 years, 21% aged between 31-40, 25% aged between 51-60 years while only 1% of the respondent aged above 61 years. This implies that the cooperative membership is composed of adults and young adults and membership decreases with increase in age. Also it means that young people have been denied a chance to own land hence few are members of cooperative societies. This could lead to young people becoming disempowered early enough hence becoming irresponsible in future.

Characteristics	Frequency	Percentage
<b>Education level</b>		
None	21	19
Primary level	69	62
Secondary level	14	13
University level	8	7
Total	112	100
<b>Duration of membership</b>		
<2 years	11	10
2-3 years	71	63
>5 years	30	27
Total	112	100

Table 2: Education level and duration of membership of respondents

Table 2 indicates that 19% of the respondents had no education, 62% has primary level education, 13% has secondary education while only 7% of the respondents had attained university education level. This means that the COCAMU cooperative members do not have sufficient knowledge and skills necessary for improved coffee farming. The need for relevant and adequate trainings of members is therefore evident. The table also shows that 11% of the respondents had been members of COCAMU cooperative for less than two years, 63% 2-3 years while 27% had been members for more than five years. This implies that the respondents had adequate knowledge and experience on how the cooperative had affected the welfare of members and were therefore useful for the study.

Marital status of the respondents was also determined as indicated in figure 2;

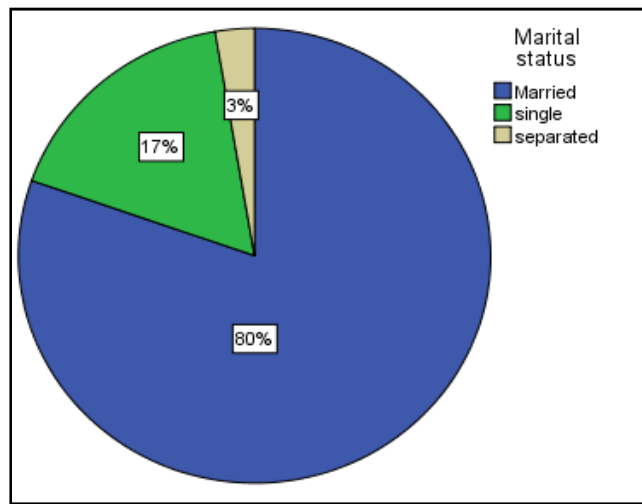


Figure 2: Marital status of respondents

Figure 2 shows that majority (80%) of the respondents were married, 17% were single while 3% were separated. This means that majority of the coffee farmers were had families implying that their involvement in coffee farming could be for the reason of generating resources for the family needs.

4.2. Reasons for Joining Cooperative

The study sought to determine the reasons for farmers joining the coffee cooperatives and the responses are indicated in figure 3

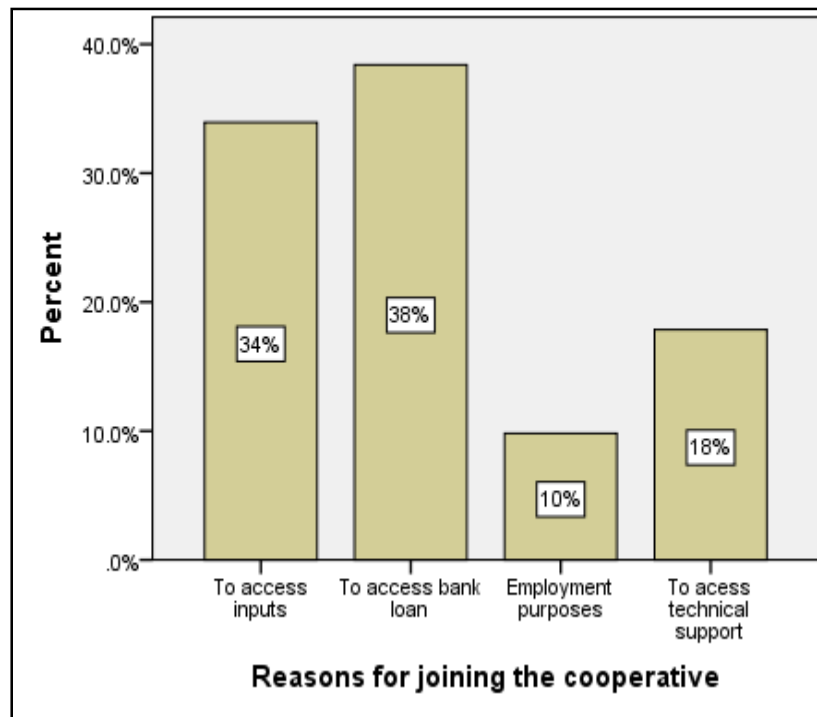


Figure 3: Reasons for membership

Figure 3 indicates that 38% of the respondents stated access to loans, 34% access to inputs, 10% employment and 18% access to technical support were the reasons why coffee farmers joined cooperatives. These findings are consistent with findings by Degnet (2004) that farmers are moved by the inputs and credits and other services offered by extension officers to join cooperatives.

4.3. Access to Micro-Credit

The study sought to determine the opinion of the respondents regarding the effect of access to microcredit through the cooperative on their welfare.

Statement	Strongly agree	Agree	Disagree
Access to micro credit through coffee cooperatives helps improve the welfare of cooperative members	47(42%)	48(43%)	17(15%)
Coffee cooperative helps members to access micro credit	47(42%)	64(57%)	1(1%)
Cooperative members are comfortable with loan repayment period	22(19%)	67(60%)	23(21%)
Interest rate of borrowed loan is friendly to members	68(61%)	42(37%)	2(2%)
Penalties on delay in making repayment of loan is fair for members	28(25%)	43(38%)	41(37%)
The cooperative acts as an intermediary between farmers and financial institutions	72(64%)	40(36%)	
Coffee Corporative encourages members to take loans	93(83%)	19(17%)	
Corporative members have managed to reduce cost of coffee farming through credits	64%	36%	
Most of the corporative members can afford education for their children	76(71%)	22(20%)	14(9%)
Money borrowed is give depending on member's coffee production	47(42%)	48(43%)	17(15%)

Table 3: Effect of access to microcredit on member's welfare

Table 3 shows that 42% of the respondent strongly agreed with the statement that access to micro credit through coffee cooperatives helps improve the welfare of cooperative members, 43% just agreed while 15% disagreed. Majority (57%) of the respondents agreed with the statement that coffee cooperative helps members to access micro credit, 42% strongly agreed with the statement while 1% disagreed. Nineteen percent of the respondents strongly agreed that cooperative members are comfortable with loan repayment period, 60% just agreed while 21% disagreed. Majority (61%) of the study respondents strongly agreed with the statement that interest rate of borrowed loan is friendly to cooperative members, 37% just agreed while 2% disagreed. The table also shows that 25% of the respondents strongly agreed with the statement that penalties on delay in making repayment of loan is fair for members, 38% agreed while 37% disagreed with the statement. Majority (64%) of the respondents strongly agreed with the statement that the cooperative acts as an intermediary between farmers and financial institutions while 36% just agreed. Majority (83%) strongly agreed with the statement that Coffee Corporative encourages members to take loans while 13% just agreed with the statement. The table also shows that 64% of the study respondents strongly agreed with the statement that Corporative members has managed to reduce cost of coffee farming through credits while 36% only agreed. Also the table indicates that 71% of the study respondents strongly agreed with the statement that Most of the corporative members can afford education for their children, 20% just agreed while 9% disagreed. Majority (42%) of the respondent strongly agreed with the statement that Money borrowed is give depending on member's coffee production, 43% just agreed while 15% disagreed.

Martínez-Torres (2006) argues that key aspect of coffee cooperatives is to provide coffee farmers with credit facilities which would help farmers improve their production. This is consistent with the current study.

		Member's welfare	Access to microcredit
Member's welfare	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	112	
Access to microcredit	Pearson Correlation	.441**	1
	Sig. (2-tailed)	.000	
	N	112	112

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

Table 4: Correlation between access to micro-credit and cooperative member's welfare

Table 4 indicate that access to micro credit and cooperative member's welfare had a positive and significant correlation ( $r = 0.441$ ,  $p$  value  $< 0.01$ ). This implies that the more the cooperative members access credit the more their welfare improves. These findings are in agreement with Tilahun (2007) who found a significant relationship between cooperatives and welfare of coffee farmers in Ethiopia

#### 4.4. Training Cooperative Members

The study also determined the effect of trainings on the welfare of cooperative members

Statement	Strongly agree	Agree	Disagree
Welfare of cooperative members improves when trainings are offered by the cooperatives	37(33%)	72(64%)	3(3%)
Your cooperative offer training sessions for their members	56(50%)	45(40%)	11(10%)
Trainings offered have been relevant	45(40%)	67(60%)	
Skills gained through trainings been helpful with regard to member's welfare	38(34%)	74(66%)	
Your cooperative offers adequate training sessions for their members	31(28%)	46(41%)	35(31%)
Trained members perform better than untrained one in terms of coffee production	78 (70%)	34(30%)	
Cooperative members can request for training depending on their needs	47(42%)	48(43%)	17(15%)
Only the farmers who are members of cooperatives are allowed to attend trainings	47(42%)	64(57%)	1(1%)
Coffee corporative do a need assessment survey before they launch trainings	72(64%)	40(36%)	
Cooperative members are trained on how to invest money generated from coffee farming	28(25%)	43(38%)	41(37%)

Table 5: Effect of training on member's welfare

Table 5 indicates that 33% of the respondents strongly agreed with the statement that welfare of cooperative members improves when trainings are offered by the cooperatives, 64% just agreed while 3% disagreed. Majority (50%) of the respondents strongly agreed with the statement that their cooperative offers training sessions for their members, 40% just agreed while 10% disagreed. Forty percent of the study respondents strongly agreed that the trainings offered by their cooperatives were relevant while 60% just agreed. The table also shows that 34% of the respondents strongly agreed with the statement that skills gained through trainings were helpful with regard to member's welfare while 66% just agreed. Further the findings indicate that 28% of the study respondents strongly agreed with the statement that their cooperative offered adequate training sessions for their members, 41% just agreed while 31% disagreed. Majority (70%) strongly agreed with the statement that trained members performs better than untrained one in terms of coffee production while 30% just agreed with the statement. The table also shows that 64% of the study respondents strongly agreed with the statement that coffee corporative do a need assessment survey before they launch trainings while 36% only agreed. Also the table indicates that 25% of the study respondents strongly agreed with the statement that cooperative members are trained on how to invest money generated from coffee farming, 38% just agreed while 37% disagreed. Majority (42%) of the respondent strongly agreed with the statement that cooperative members can request for training depending on their needs, 43% just agreed while 15% disagreed. Majority (57%) of the respondents agreed with the statement that only the farmers who are members of cooperatives are allowed to attend trainings, 42% strongly agreed with the statement while 1% disagreed.

These findings agree with Birshall (2003) argument that cooperative members benefit from training in bio-intensive farming techniques. This has helped them to increase production and acquire skills learnt in farm to better their living standards. Tilahun (2007) found that through the training provided by the coffee cooperative, men and women are trained to share income equally; especially the coffee revenue for improvement of belonged to all family wellbeing and poverty reduction.

		Member's welfare	Trainings
Member's welfare	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	112	
Trainings	Pearson Correlation	.528**	1
	Sig. (2-tailed)	.000	
	N	112	112

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

Table 6: Correlation between trainings and member's welfare

Table 6 indicates that there was positive and significant relationship between member's welfare and trainings ( $r = 0.528$ ,  $p$  value  $< 0.01$ ). This indicates that any increase in the level of members training would result to improvement of their welfare. A study conducted by Birshall (2003) reported that training has a significant relationship with welfare of coffee farmers. The study conducted by Issa and Ngabitsinze (2015) to determine the role of cooperative in rural development revealed that training of farmers through cooperatives had a positive and significant relationship with the living standards of the farmers. This implied that the more farmers are trained on various aspect of farming the better their standards of living. This is in agreement with the findings of the current study.



#### 4.5. Access to Inputs

The study sought the opinion of the respondents regarding the effect of access to inputs on the welfare of cooperative welfare.

Statements	Strongly agree	Agree	Not sure	Disagree
Access of inputs through coffee cooperative has positive effect of member's welfare	61(55%)	51(45%)		
Your cooperative offer inputs to their members	48(43%)	64(57%)		
Cooperative members access inputs at subsidized prices	33(30%)	49(44%)	16(14%)	14(12%)
Inputs are readily available for cooperative members	24(21%)	32(29%)	16(14%)	40(36%)
Use of inputs provided by the cooperative result to increased coffee production	37(33%)	60(54%)	15(13%)	
Coffee farmers access fertilizers in time through their cooperatives	70(63%)	30(27%)	12(10%)	
Coffee farmers access chemicals in time through their cooperatives	61(54%)	42(38%)	9(8%)	
Coffee farmers access spraying equipments through their cooperatives	72(64%)	40(36%)		
Extension services are provided for free to cooperative members	30(26%)	82(74%)		
Coffee farmers get inputs basing on their coffee production	78(70%)	34(30%)		
Farmers who are in cooperatives save more of their money generated through coffee production due to subsidized inputs	40(36%)	72(64%)		

Table 7: Effect of access to inputs on member's welfare

Table 7 indicates that 55% of the study respondents strongly agreed with the statement that access of inputs through coffee cooperative has positive effect of member's welfare while 45% just agreed. Majority (57%) of the respondents agreed that the cooperative offered inputs to their members while 43% strongly agreed. Thirty percent of the respondents strongly agreed with the statement that cooperative members access inputs at subsidized prices, 44% just agreed, 14% were not sure while 12% disagreed with the statement. The table also shows that 21% of the respondents strongly agreed that inputs are readily available for cooperative members, 29% agreed, 14% were not sure while 36% disagreed. Also, 33% of the respondents strongly agreed with the statement that the use of inputs provided by the cooperative result to increased coffee production, 54% just agreed while 13% were not sure of the statement. Majority (63%) strongly agreed with the statement that Coffee farmers access fertilizers in time through their cooperatives, 27% just agreed while 10% disagreed with the statement. The table also shows that 54% of the study respondents strongly agreed with the statement that Coffee farmers access chemicals in time through their cooperatives, 38% only agreed while 8% disagreed with the statement. Also the table indicates that 64% of the study respondents strongly agreed with the statement that Coffee farmers access spraying equipments through their cooperatives while 36% just agreed. Majority (74%) of the respondent agreed with the statement that Extension services are provided for free to cooperative members while 26% strongly agreed. Majority (70%) of the respondents strongly agreed that coffee farmers get inputs basing on their coffee production while 30% just agreed. The table also shows that 36% strongly agreed with the statement that farmers who are in cooperatives save more of their money generated through coffee production due to subsidized inputs while 64% just agreed. Gisaro (2013) links provision of inputs such as pesticides, fertilizers, seedlings and extension services to coffee farmer with increased coffee production. Income generated by the sales of the much produced coffee are translated into wealth within the households which in turn improves welfare of farmers.

		Member's welfare	Access to inputs
Member's welfare	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	112	
Access to inputs	Pearson Correlation	.219*	1
	Sig. (2-tailed)	.020	
	N	112	112

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

Table 8: Correlation between trainings and member's welfare

Table 8 shows that there is a significant relationship between member's welfare and access to inputs ( $r=0.219$ ,  $p$  value  $<0.05$ ). This implies that the welfare of the cooperative members improves with increased access to inputs. Study conducted by Morgen (2007) realized a significant relationship between agricultural cooperatives and farmer's welfare. These findings are consistent with the current study.

#### 4.6. Effect of Coffee Cooperative on Member's Welfare

The study sought to determine the effect of coffee cooperative on member's welfare. The respondents were requested to respond to questions which sought to extract information of on the effect. Analyses of the response are presented in the table 8;

Statements	Yes %	No %
Would you consider this coffee cooperative to have improved your welfare as a member	108(96%)	4 (4%)
Coffee cooperative improves the standards of living for cooperative members	96(86%)	16 (14%)
Coffee cooperative has a role in empowering women who are members	97(87%)	15(13%)
Coffee cooperative has a role in enhancing member's social economic development	101(90%)	11(10%)
Considering your income before joining the cooperative, would you say the cooperative has improved your income?	105(94%)	7(6%)
Would you encourage other coffee farmers to join cooperatives?	110(98%)	2(2%)
Do you feel that the loan you take helps you better your coffee production	97(87%)	15(13%)
Are the inputs you get from the cooperatives sufficient?	60(54%)	52(46%)

Table 9: Effect of Coffee cooperative on member's welfare

Table 9 indicates that majority (96%) of the respondent considered their cooperative to have led to the improvement of their welfare while 4% did not. Additionally, the findings show that 86% against 14% of the respondents felt that the cooperative improves the standards of living for members. Majority (87%) of the respondents were of the opinion that coffee cooperative has a role in empowering women who are members while 13% did not have the same opinion. Coffee cooperative has a role in enhancing member's social economic development as indicated by 90% of the respondent. Considering income before joining the cooperative majority (94%) the respondents stated that cooperative had improved their income level. The table also shows that 98% of the respondents stated that they would encourage other coffee farmers to join cooperatives while 2% would not. Also majority (87%) of the study respondents stated that they felt that the loan they took helped them better their coffee production while 13% stated it didn't. Unlike 46% of the respondents, 54% considered the inputs they got from the cooperatives sufficient. These findings are in agreement with the findings by Morgen (2007) that membership in agricultural cooperatives give members full empowerment while at the same time giving them the opportunity to exchange ideas between them that result to improved livelihoods of farmers

#### 4.7. How the Cooperative Improved Welfare of Members

The study sought to determine how the cooperative members perceived their cooperative to have contributed to their welfare. The data was collected through interview with the cooperative members. Analysis of the responses is indicated in Table 9.

Statement	Frequency	Percentage
Improved income	67	60%
Acquired assets	45	40%
Afforded education for children	89	79%
Meet family needs	108	96%

Table 10: How the cooperative improved welfare of members

Table 10 shows the distribution of the responses of the respondents regarding their perceived attributes of cooperatives to its members. Sixty percent of the respondents stated that their income had improved, 40% had acquired assets and 79% had managed to educate their children while 96% of the respondents were able to meet family need. Morgen (2007) asserted that access to loans through cooperatives enables farmers to meet financial needs of their family as well as investing in education as a way of alleviating poverty.

#### 4.8. Challenges Facing Coffee Cooperative

Statement	Frequency	Percentage
Leadership	72	64%
Financial management	86	77%
Low membership rate	101	90%

Table 11: Challenges facing coffee cooperative

Table 11 shows that 64% of the respondents stated poor leadership, 77% stated poor financial management while 90% indicated low memberships rate as the challenge facing coffee cooperatives in Rwanda. Kelly and Foote, (2013) argued that financial management and leadership and political interferences are the major challenges facing agricultural cooperatives. This is consistent with findings of the current study.

#### 4.9. Improving Membership

Statement	Frequency	Percentage
Training farmers on cooperatives	9	75%
Cooperatives to low prices for inputs considerable	8	67%
Cooperatives to provide adequate extension services	11	91%
Reduce interest rate for loan by cooperative members	10	83

Table 12: Suggestions for improving membership

Table 12 shows that 75% of the respondents suggested training farmers on cooperatives, 67% stated lowering of inputs prices by cooperatives, 91% indicated provision of provide adequate extension services and 83% reduction of interest rate for loan by cooperative members as the strategies for improving membership to coffee cooperatives in Rwanda.

## 5. Summary, Conclusions and Recommendations

### 5.1. Introduction

This chapter provides the summary of the findings, conclusions made from the summary and recommendations derived from the conclusions of the study.

### 5.2. Summary of the Findings

This study sought to determine the effect of coffee cooperatives on member's welfare. Descriptive study design was used in order to achieve the study objectives. The target population comprised of 230 members from COCAMU cooperative in Kirehe District. The sample size for the study was 146 members determined using Slovin's formula for sample size determination random sampling technique was used to select the study respondents. The study utilized questionnaires as instrument for data collection. The collected data was analyzed quantitatively using descriptive statistics, which include frequencies and percentages. Inferential statistics specifically Pearson correlation was done to establish relationship between the study variables. Findings of the study were presented using frequency distribution tables, pie charts and bar graphs.

The study findings indicated that COCAMU cooperative has more male members compared to female. However, the percentage of gender representation in the cooperative membership does not vary greatly. Further the study showed that majority (53%) of the members aged between 41-50 years, 21% aged between 31-40, 25% aged between 51-60 years while only 1% of the respondent aged above 61 years. Findings also indicated that majority of the cooperative members had primary level education with only 7% having attained university education level. Further the findings showed that 11% of the respondents had been members of COCAMU cooperative for less than two years, 63% 2-3 years while 27% had been members for more than five years. The findings showed that majority (80%) of the coffee farmers involved in the cooperative were married. However, there were a few single and separated members. Access to loans, access to inputs, search for employment and access to technical support were the reasons why coffee farmers joined cooperatives.

#### 5.2.1. To Determine the Effect of Micro-Credit Accessibility on Welfare of Coffee Cooperative Members

The Findings further showed that 42% of the respondent strongly agreed with the statement that access to micro credit through coffee cooperatives helps improve the welfare of cooperative members, 43% just agreed while 15% disagreed. Majority (57%) of the respondents agreed with the statement that coffee cooperative helps members to access micro credit, 42% strongly agreed with the statement while 1% disagreed. Nineteen percent of the respondents strongly agreed that cooperative members are comfortable with loan repayment period, 60% just agreed while 21% disagreed. Majority (61%) of the study respondents strongly agreed with the statement that interest rate of borrowed loan is friendly to cooperative members, 37% just agreed while 2% disagreed. The table also showed that 25% of the respondents strongly agreed with the statement that penalties on delay in making repayment of loan is fair for members, 38% agreed while 37% disagreed with the statement. Majority (64%) of the respondents strongly agreed with the statement that the cooperative acts as an intermediary between farmers and financial institutions while 36% just agreed

#### 5.2.2. To Examine the Effect of Trainings on Welfare of Coffee Cooperative Members

The findings indicated that 33% of the respondents strongly agreed with the statement that welfare of cooperative members improves when trainings are offered by the cooperatives, 64% just agreed while 3% disagreed. Majority (50%) of the respondents strongly agreed with the statement that their cooperative offers training sessions for their members, 40% just agreed while 10% disagreed. Forty percent of the study respondents strongly agreed that the trainings offered by their cooperatives were relevant while 60% just agreed. The table also showed that 34% of the respondents strongly agreed with the statement that skills gained through trainings were helpful with regard to member's welfare while 66% just agreed. Further the findings indicated that 28% of the study respondents strongly agreed with the statement that their cooperative offered adequate training sessions for their members, 41% just agreed while 31% disagreed.

#### 5.2.3. To Establish the Effect of Access to Inputs on Welfare of Coffee Cooperative Members

Study findings showed that 55% of the study respondents strongly agreed with the statement that access of inputs through coffee cooperative has positive effect of member's welfare while 45% just agreed. Majority (57%) of the respondents agreed that the cooperative offered inputs to their members while 43% strongly agreed. Thirty percent of the respondents strongly agreed with the statement that cooperative member's access inputs at subsidized prices, 44% just agreed, 14% were not sure while 12% disagreed with the statement. The table also showed that 21% of the respondents strongly agreed that inputs are readily available for cooperative members, 29% agreed, 14% were not sure while 36% disagreed. Also, 33% of the respondents strongly agreed with the statement that the use of inputs provided by the cooperative result to increased coffee production, 54% just agreed while 13% were not sure of the statement.

#### 5.2.4. To Determine the Relationship between Coffee Cooperatives and Member's Welfare

The findings indicated that access to micro credit and cooperative member's welfare had a positive and significant correlation ( $r=0.441$ ,  $p$  value  $<0.01$ ). Findings also showed a positive and significant relationship between member's welfare and trainings ( $r=0.528$ ,  $p$  value  $<0.01$ ). Additionally, there was a significant relationship between member's welfare and access to inputs. Further the findings indicated that majority (96%) of the respondent considered their cooperative to have led to the improvement of their welfare while 4% did not. Additionally, the findings showed that 86% against 14% of the respondents felt that the cooperative improves the standards of living for members. Majority (87%) of the respondents were of the opinion that coffee cooperative has a role in empowering women who are members while 13% did not have the same opinion. Coffee cooperative has a role in enhancing member's social economic development as indicated by 90% of the respondent.

#### *5.3. Conclusion*

This study concluded that old farmers are more likely to join cooperative than younger coffee farmers. Additionally, the study concluded that training of farmers through the coffee cooperatives is important. This will ensure that farmers as well as cooperative staff are up to date with the changing environment and will be able to handle upcoming risks and challenges as far as coffee growing is concerned. COCAMU cooperative members lack skills and knowledge which would lead to improved coffee production. The cooperative should therefore ensure adequate trainings.

This study concluded that access to credit facilities, access to inputs, search for employment and access to technical support from the cooperatives were factors that influence the decision by coffee farmers of joining coffee cooperatives.

#### *5.4. Recommendation*

This study found that old farmers are more likely to join cooperative than younger coffee farmers. Therefore, the government and the managers of cooperatives should focus on sensitization of coffee farmers, especially younger farmers, on the benefits of being members of cooperatives so that they can have a clear understanding and be fully informed on the potential of cooperatives.

Coffee farmers are more likely to join the cooperatives in expectation of access to cheap credit which helps them to meet costs related to coffee processing. Government should promote policies aimed at supporting credit facilities for cooperatives so that coffee farmers can benefit from such supportive facilities, including access to farm inputs such as fertilizer and pesticides.

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