

Evaluation of the role of cooperatives services in improved access to inputs by cooperative members: a case study of Koturu cooperative Western province, Rwanda.

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#### ABSTRACT

The role of cooperatives services in improved access to inputs by cooperative members of Koturu cooperative Western province, Rwanda was evaluated. This study was based on the problem statement of determining the role cooperatives can play in the rural development. The Government of Rwanda recognizes the central role that cooperatives have to play in promoting inclusive, sustainable development and economic and has put a lot of effort in supporting cooperatives, but some cooperatives are still encountering challenges both externalities and internal challenges which are caused by lack of good governance skills, misuse of property, members side selling, lack of market linkages, low literacy, inactive membership and poor financial management. The research question was what is the role of cooperatives services in improving access to inputs by cooperative members? Within the basis of the objective: To evaluate the role of cooperatives services in improved access to inputs by cooperative members. Data collection was done among 159 respondents, members of KOTURU cooperative with 60% male and 40% female. Key informant interviews were done cooperative technical and supporting staff (Cooperative Agronomist, sales officer, and the manager) to triangulate results from cooperative members respondents. Results shows that farmers from the time they joined KOTURU Cooperative have received many benefits. Results shows cooperative role into rural development is very important, cooperative provide capacity building, service and market linkage to its members. Therefore, it is recommended for cooperative to use research result in sensitizing new members to join, Government to invest more in their capacity building and coordinating development partners in Cooperative sector to reduce effort duplication.

**Keywords:** Cooperatives services, improved access, inputs and cooperative members

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#### INTRODUCTION

Rwanda is one of the seven countries that constitute East Africa. It is a small country that measures only 26,338 square km, bordering Uganda, Tanzania, Burundi, and the Democratic Republic of the Congo. The results of the Rwanda household survey of 2019/2020 show Rwanda have a total resident population of 12,300,000, mostly populated with a density of 416 people/km<sup>2</sup> and the mean number of persons per household is 4.4. [1].

Administrative divisions of the country include five provinces: Northern Province, Western Province, Southern Province, Eastern Province, and the City of Kigali. Rwanda is further divided into 30 districts, 416 sectors, 2,148 cells and 14,837 villages, which are the smallest politico-administrative entities of the country [2].

The Rwandan economy is mainly based on the service and agriculture sectors. The agriculture sector contributes about 35% to the national GDP, employing about 70%

of the population in Rwanda. [3]. It has been the main driver of growth and poverty reduction, pulling 1.7 million people above the poverty line in only five years. With increased commercialization, the agriculture sector has been the driving force for about 45% of poverty reduction in the last decade. 81.3 percent of all households (about 2,034,942 households) are food secure, have an acceptable diet, and use a low share of their budget to cover food needs. [4].

Between 2000 and 2016, Rwanda's economy grew by 5.9 percent per year on average, and by 2016 it was more than 3.5 times larger than in 2000 [5]. During the same period, the Gross Domestic Product (GDP) per capita increased from USD 242 to USD 729. Exports have seen rapid growth from a low base, with 13.2 percent growth per annum between 2000 and 2016, while imports grew on average by 10 percent per annum, such that imports, and exports increased their combined share of the economy from 31

to 48 percent.

The annual decrease of GDP by six percent throughout 2016 was attributed mainly to bad weather that affected agricultural production and the completion of big infrastructure projects that constrained the performance of the industry sector [6].

Despite solid progress since 2000, poverty remains widespread and pervasive. In 2010/11 (the most recent living standards survey), 45 percent of the population lived below the national poverty line, and 24 percent was considered extremely poor (lived below the national food poverty line). The national poverty line is frugal, witnessed by the large difference between poverty based on the national poverty line (45 percent) and poverty based on the international \$1.25 a day line (63 percent) [7]. To alleviate poverty, Rwandan Government's has developed development plan such as Vision 2020, aims to increase the contribution to GDP of services and industry to 57 percent and 19 percent, respectively, while decreasing agriculture's contribution to 24 percent [8].

As in many countries, poverty has important geographical dimensions. Half of the rural population lives below the poverty line, compared to 22 percent of the urban population. More than 90 percent of the poor live in rural areas [9]. Cooperative movement in Rwanda started in 1949 since then cooperatives remained control under political interest until promotion policy of cooperatives amended by 1988 and in 2018 the policy was revised entitle as National policy cooperative in Rwanda [10]. Three years later, Rwanda Government announced the revised cooperative law of No

#### RESEARCH METHODOLOGY

##### Zone of study

Rwanda is currently composed of two layers of government (central and local) and of six administrative entities. The country is divided into four Provinces and the City of Kigali which are also further divided into 30 districts. Moreover, the districts are further divided into 416 Sectors. Additionally, the sectors are further divided into 2148 cells and lastly, these cells are divided into 14837 villages.

KOTURU Cooperative is in Western zone of Rwanda, this zone is one of the four provinces composing Rwanda. It was created in early January 2006 as part of a government decentralization program that re-organized the country's local

14/5/2021 with the purpose to determines the establishment, organisation and functioning of cooperatives.

[11] stated that most of Rwandans are doing businesses through cooperative, currently number of cooperatives registered are estimated to be 10,103 cooperatives and members estimated to be 5.2 million. People with share capital estimated as 49,797,022,184 Frw and cooperatives are categorized basing on ten main economic sectors in addition to saving and credit. Among the primary cooperative, majority of cooperatives are from agricultural sector which counts 52% and least percentage are fishery cooperative with 0.9%. Union cooperatives counts 1.5%, federations cooperative 0.1% and saving and credit cooperatives (SACCOs) represents 4.4% of cooperative registered in Rwanda.

Rwanda's cooperative sector has grown rapidly over the last ten years. This has been achieved through the support of Government of Rwanda, which has always given emphasis to the development and promotion of cooperatives to facilitate their activities and enhanced the structure of the cooperative movement in Rwanda (Harelimana, 2021). In Rwanda, the law 48/2013 established Rwanda cooperative Agency (RCA) to be a public institution in charge of promotion, registration, and regulation of Cooperatives.

##### Aim of the study

The aim of this research was to evaluate the role of cooperatives services in improved access to inputs by cooperative members: a case study of Koturu cooperative Western province, Rwanda.

government structures. The province is located is western part of Rwanda, neighboring Republic Democratic of Congo in North. Western Province is composed with seven districts, 96 sectors, and 538 cells with a superficies of 5,882 km<sup>2</sup>. Western province accounts for 2408 Cooperatives, among them 1233 are agricultural cooperatives [12].

This study has been carried out to study has been carried out to farmers grouped into KOTURU an horticulture cooperatives in the district of Rubavu and Nyabihu.

##### Data collection method

In this research, the researcher used mixed researcher methodology both quantitative and qualitative and the source of data was both primary and

secondary. Primary data was collected from farmers located in Western provinces those are members of the cooperatives grouped and trained by a horticulture project.

Cooperative's members were asked the questions to capture cooperatives activities they are receiving, benefits of cooperative members, income, activities they do and how covid 19 impacted their cooperative. The questionnaire included production questions, demographics and marketing. For in-depth understanding the researcher used qualitative methods whereby key informant interviews with technicians has been used. (Denzin, 2000) About secondary data, a desk review was used, these are national data about cooperatives and about western region.

### Targeted population

A population is a complete set of individual objectives or measurements having some common observable characteristics. The target population of this study comprised of farmers grouped together in KOTURU cooperative with a shared objective of producing horticulture crops and selling those crops. The crops include mainly carrots, cabbages and broccoli. The targeted population included men, women and youth (with age <30 years). The population of those farmers are 265 members.

### Sample size

According to [13], sampling is the process of collecting a number of individuals or objects from a population such that the selected group contains elements representative of the characteristics found in the entire group. The study used

### Conceptual framework

Independent variables  
Cooperative  
Technical training  
Cooperative services  
Market linkages

Dependent variable Rural Development  
Increased area under production and productivity  
Improved access to inputs  
Income

**Figure 1: Conceptual Framework**  
Source: Researcher (2022)

The conceptual framework (Fig 1) of the study explained the relationship between

descriptively survey design. Descriptive survey design therefore is appropriate because it enabled the researcher to gather information concerning the role of cooperatives in rural development. Simple random technique was used where the entire group in the defined population had an equal and independent chance of being selected as members of the sample.

The sample size is calculated using the following Morgan's formula [14]:

$$n = \frac{N}{1 + N(e^2)}$$

Where:

n is the sample size of the study.

N is the total population of the research and

e (0.05) is sampling error

Using this formula, the researcher calculated the sample size as follows:

$$n = \frac{265}{1 + 265(0.05^2)} = \frac{265}{1 + 0.662} = 159.44 = 159$$

Therefore, the sample of the research is 159 members of KOTURU cooperative. Also, the researcher used a random technique to choose the cooperative's leader and a census to staff for key informant interviews. A census is an attempt to enumerate the entire population; understand that a census is needed for information about every small part of the population. (McLennan, 1999). KOTURU had only 3 staff, these are, 1 agronomist, 1 marketing & sales agent and an accountant. Those people were all interviewed because they are responsible of different unit within the cooperative and those unit were linked to this study objective.

cooperatives (Independent variable) and rural development (dependent variable).

There are number of factors under independent variables such as technical training, cooperative services, and market linkages which affect the dependent variable. Under the dependent variable rural development, there are determinants of that such as increased productivity, improved access to inputs and income.

**Dataset and data processing**

Data has been cleaned to eliminate outliers and verify the accuracy of data collected. Cleaning has been done using excel and Stata 14. Cleaned data stored in a dataset for easy analysis.

The researcher collected data using digital platform Akvo Flow and data were exported in excel. The variables in the dataset include demographics (name of the respondent, age, number of members of the households, sex, locations), farming practices, training attended, area planted before/after joining the cooperatives and on marketing (quantity sold per crop and unit prices). Those variables allowed the researcher to get answers to the research questions.

**Data analysis**

After data cleaning, the qualitative and quantitative analysis happened. With

**RESEARCH FINDINGS**

**Characteristics of respondents.**

**KOTURU Cooperative Description**

KOTURU is a cooperative formed since 19<sup>th</sup> June 2017 and registered under Rwanda Cooperative Agency (RCA). The cooperatives have 255 members and have a purpose of producing and business of leguminous. Men are 60 % and 40% women. The cooperative produce leaks, cabbage, carrot, green pepper and spinach. The marketplace for their produce is from Rubavu to Nyabugogo, Kabuga and their vision is to increase member’s nutrition and target the export market. The general assembly is the key organ in taking all cooperatives decision. The cooperative has also administration committee composed by four people: The

quantitative data, statistical analysis has been performed using Stata 14 to generate descriptive statistics and percentages. Qualitative data collected from technicians who has been involved in the implementation of the activities were interpreted qualitatively [15].

**Ethical Considerations**

Ethical considerations refer to a set of values that are generally acceptable in the course of carrying out a study. One such very crucial value involves the anonymity and confidentiality of respondents. Anonymity refers to when neither the researchers nor the readers of the results can identify a response with a given respondent while confidentiality refers to when the researcher can identify a given person’s responses but promises not to reveal them publicly [16]. The researcher kept anonymous the respondents’ identifications and kept confidential their information as promised during consent forms. Consulted literature has been acknowledged and cited as planned by Nexus International University guides and plagiarism test has been applied at the end of the study.

chairman, Vice Chair, Secretary and 2 advisors. All holds secondary education level. This committee works closely with auditors committee which is responsible of following up the use cooperatives money. The cooperative employs three staff who are paid by the cooperative: the agronomist, market & sales agent, and the accountant.

**Gender**

Gender is about the equal distribution of women and men. Respondents included both men and women. 60% of respondents are men and 40% women. This percentage is sufficient because it is in alignment with the cooperative’s membership of men and women.

**Table 1: Gender representation among respondents**

Gender	Freq.	Percent	Cum.
Male	95	59.75	59.75
Female	64	40.25	100
<b>Total</b>	<b>159</b>	<b>100</b>	

Source: Primary data, 2022

**Age**

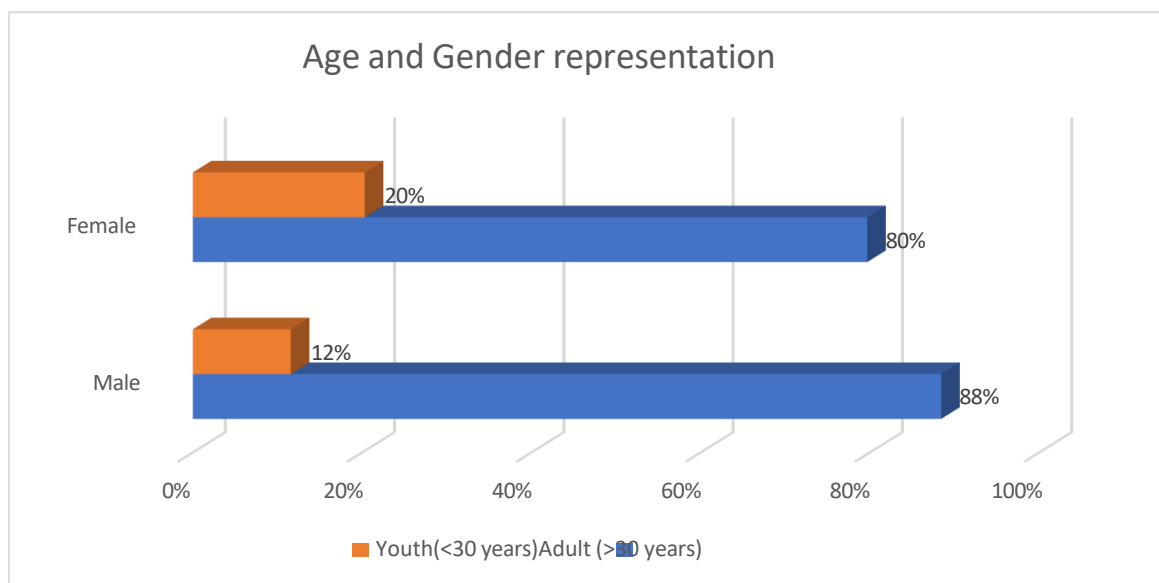
It is important to view the age category of respondents. This help the research to

assess how youth, adult and older population are involved in cooperative activity. Results shows the mean age is 43

years, where the minimum age of respondent is 19 years old and 77 years. Looking at youth, it is defined as population of age less than 30 years. Among respondents by each gender, young female representative is 20% and young male is 12%. The figure below shows the representation. Comparing the demographic data and the youth participation, it shows there is an

opportunity for KOTURU to increase more young ones who participate in horticulture activities, more than 50% of households of respondents has young ones in their families. Therefore, there is an opportunity to bring more young ones into Agri business through awareness. Since young ones are energetic and can easily use technology that will be a value addition to the cooperative.

**Figure 2: Respondent's age and gender representation.**



Source: Primary data, 2022.

**Table 2: Age of respondents**

Variable	Obs	Mean	Std. dev	Min	Max
Age	159	43.01258	12.87918	19	17

Source: Primary data, 2022.

**Household demographic**

From the respondents 61% are households head, and 39% has other relationship with households. 26.4% are spouse, 5.7% daughter, 5.7% mother and 1.3% sister to their household heads. The average size of the households is four people per household. Results shows households has at least one young people. In addition, 50.1% households have children under five, this give KOTURU a responsibility to make sure members are trained on nutrition and especially those

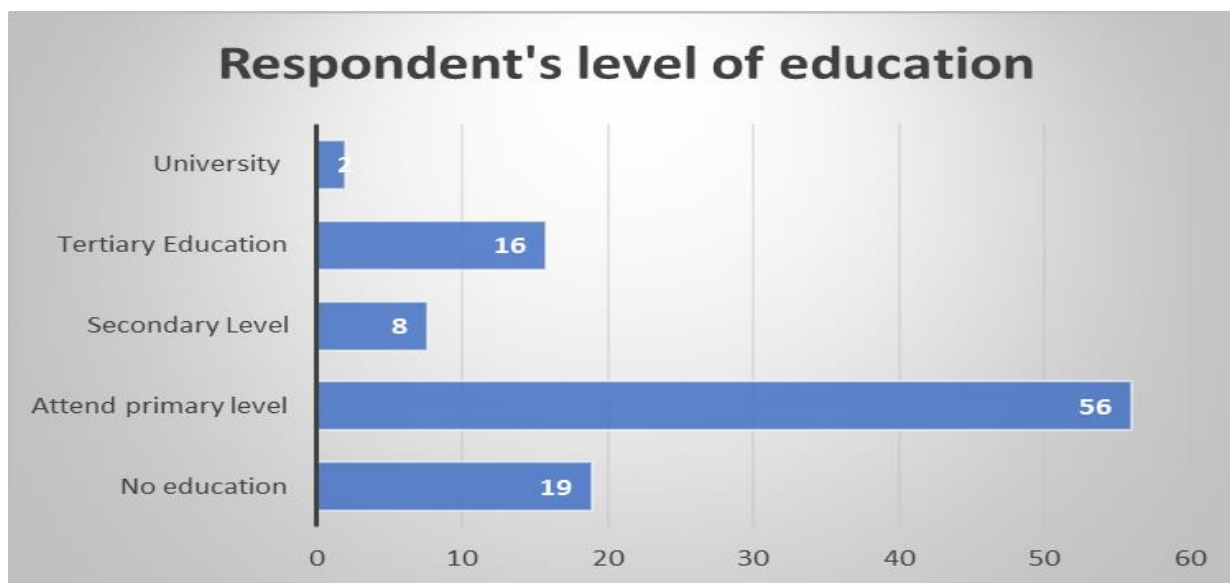
household with under five children to ensure their optimum growth.

**Education level**

Members of KOTURU have different level of education which is not far from other farmers in rural areas. High percentage (56%) has attended primary education, with 19% without any formal education and 2% of people who attended University. The challenges of education remain a problem across many cooperatives.



Figure 3: Respondent’s level of education



Source: Primary data, 2022.

**Cooperatives services provided to members and benefits**

Respondents has explained many benefits they get because they are members of cooperative group KOTURU. Such as learning from other farmers, being members provide the opportunity to participate into various trainings offered at the cooperative, easy to get a

loan from the cooperative, can use facilities of cooperative like storage facility, the cooperative makes quality control of their production, buy inputs together, more market linkage, get money at the end of the year from the cooperative and better price negotiation of the production.

Table 3; Benefit they get as cooperative members

Benefit of Cooperative membership	n	Percent
I am able to use cooperatives resources (storage facility, water pump.)	140	88
I am learning from other members of the cooperatives	159	100
We sell our produce together	159	100
We can negotiate better with the buyers	159	100
I can get a loan from the Cooperative	90	56.60
The cooperative does quality control of my produce	130	81.76
I can join more trainings to improve my skills	159	100.00
I able to have access on inputs	159	100.00
I am able to pay my family health insurance	100	62.89
I am able to get job from my cooperative	115	72.33
My produce sales have increased and income	150	94.34

Source: primary data, 2022

KOTURU Chairperson affirmed in the interview the type of cooperative they provide to the members. They make sure,

members are getting benefit of their membership than non- members. “At the start of the season, we record the

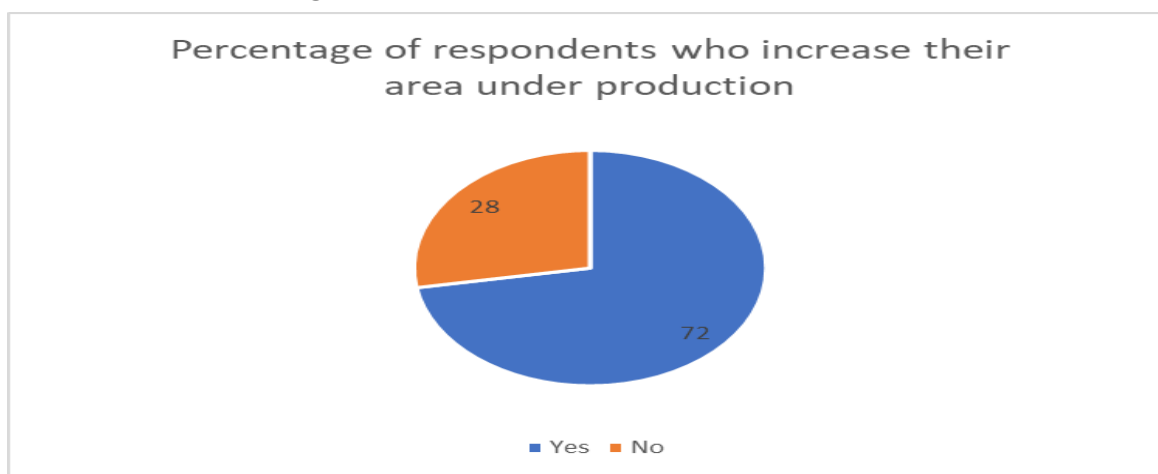
quantity of inputs (seeds and fertilizers) each member will need for the coming season, after that we can go purchase in big amount those inputs on the lower price. We are able to do bargain for a better price. After that we provide inputs to our members, who will pay once they sold their production”.

**Cooperative’s member area under production**

Among the objectives of this research is to assess the benefit of trainings members have received. 72% of confirmed they have increased their area

under production and productivity. While asked on the factors that lead them to increase, they mentioned: “because of the training we received from KOTURU, we have been able to manage well disease which was reducing our production and demotivate us to increase area under production”. Stated by one respondent. Among other reason they mention, as results of more markets secured, the profit increased, and they purchase more land.

**Figure 4: Respondents with increase area**



**Source: Primary data, 2022.**

Since agriculture is the focus of the cooperatives, land under production is an important factor for their production and respondents were requested if the area and their production has changed since their joined the cooperatives. Increase in production resulted in increased sales and income.

From the results, respondents own farm size with a mean of 5778.68 square meters and 1623.77 square meters allocated for vegetables production.

Before joining the cooperative, the average area dedicated to vegetables production was 1059 square meters. There has been an increase of 34.78%. The reasons of area increase because of more markets received after joining the cooperatives, access to inputs become easy and good agricultural training provided resulted in reduction production loses they used to have.

**Table 4: Mean plot size of respondents (after joining cooperatives)**

Descriptive Statistics	N	Minimum	Maximum	Mean	Std. Deviation
The size of farm (in m2)	159	50	100000	5778.68	9528.946
Area under vegetable production (m2)	159	1	10000	1623.77	2083.177
Area under fruit production (m2)	159	0	10000	383.65	1161.391
Area under cereales and other crops (m2)	159	0	140000	2762.7	11330.61
Area not under production: (m2)	159	0	6800	269.7	880.442

**Source: Primary data, 2022**

By going deeper to see land ownership by gender and age, results clearly shows that adult men (>30 years old) occupy 66.30% of the total land, 25.08% being occupied by adult women (> 30 years old), young female (<30 years old) 4.27% and 4.35%

Results of the study showed all members of KOTURU have received services from their cooperatives. 88% confirmed can use cooperative facility such as storage, water pumps, 56% are able to get loan from their cooperative for other purposes outside agriculture and 100% confirmed have been got inputs. As Zepeda stated that agricultural inputs are imperative in farming systems and lack of sufficient

The research shows that the cooperatives provided different services to its members. Those services included trainings, agronomic field visits and it has supported the cooperatives in easy access to inputs. The farmers mentioned through cooperative, there are getting

being occupied by young men. This is a challenge for young ones and women, without an access to land this will be difficult for them to invest in income generating activities.

#### DISCUSSION

investment in inputs results in a reduction of agriculture production growth [17]. This finding is also in line with [18] findings that proved that farmers who use inputs such as fertilizers and irrigation boost their agricultural production and better fulfill household needs as result of increased income.

#### CONCLUSION

improved seeds at affordable prices, pesticides, and insecticides. They mentioned when they are still waiting for the money, the cooperative provide loan. This is the benefit comparing to members who are not members of the cooperative.

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