

**COFFEE GROWING ON THE ECONOMIC WELFARE OF RURAL
FARMERS IN UGANDA CASE STUDY OF BUSHIKA SUBCOUNTY,
BUDUDA DISTRICT**

BY

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**A RESEARCH REPORT SUBMITTED TO THE DEPARTMENT OF
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THE REQUIREMENTS FOR THE AWARD OF A BACHELORS DEGREE OF
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DECLARATION

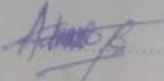
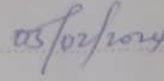
I watsemba Mary hereby declare that this research report on the impact of coffee growing on the economic welfare of Bushika farmers in Bududa district is my original work and has been submitted for the reward of a degree at Busitema University.

signature.......... Date..... 05th Feb 2024.....

WATSEMBA

APPROVAL

This research on the impact of coffee growing on the economic welfare of the rural farmers of Jato-Bushika sub-county in Bududa district is my original work that has never been submitted by anybody. It's therefore my work submitted for examination with my approval as the candidate's university supervisor.

Signature.......... Date..........

Mr ADAIGA MASUD

SUPERVISOR

DEDICATION

I dedicate this research report to my beloved parents Mr.Nangoli Davies Wekhoola and Ms. Nambuba Grace not forgetting lecturers of Busitema university especially from the Economics department (2019/20-2021/22) who have been undeniably supporting me and encouraging me financially, emotionally, psychologically among others towards the completion of this research within the allocated time.

ACKNOWLEDGEMENT

Glory to the Almighty God, the highest who has given me the gift of life and endless mercy towards whatever I have gone through in completing my studies and ready for the award of a degree. I also extend my sincere appreciation to Busitema university specifically the faculty of science and education for the knowledge provided to me while at the university. In a special way I would like to appreciate my supervisor, mentor, and as well my lecturer Mr. Adiaga Masuudi for his tireless support and guidance given unto me during my research, may the Almighty Lord reward him abundantly.

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ABSTRACT

Coffee is Uganda's first traded tropical commodity in the world. Coffee is the major cash crop both in terms of foreign exchange and employment opportunities. Uganda ranks the second in Africa after Ethiopia and eighth in the whole world. It contributes 20 to 30% of the foreign exchange earnings. It is vital for both consumers and producers to understand its influence on their welfare. The situation of farmers growing coffee varies from region to region but generally, the farmers are at a disadvantage in international markets and often sell their products at low prices. Farmers have not only to deal with the unpredictable force of Mother Nature, but also with "the boom and bust cycles in prices of commodities," political control and inadequate income. Often the examination of the market for coffee can be widespread and focused on economic efficiency other than the local influence of market changes which often result in "the marginalization of small scale farmers, increased environmental degradation, and general rural deterioration and poverty". With market changes, not only are the shifts seen at the economic level but also on lives of farmers at the local level. Farmers growing coffee ought to consider the worth of their crops because their access to social services such as health, education, meals and their entire livelihood is dependent on the production of their crops. Coffee farmers now sell a pound of coffee for the market price of about one dollar globally.

Most of the farmers had their own land with the percentage of 80 and the rest rent with a percentage of 20, most of the farmers practice coffee growing on more than an acre with 75% and the rest on less than an acre with 25%, 75% of the farmers were married, few were single with 18% and very few were divorced with 7%, most of the farmers were males with a percentage of 78 and the rest were females with a percentage of 22, most of the farmers reached primary level with a percentage of 40, 19% o level 18% illiterates and others with the lowest percentage as shown above and most of the farmers were in the age range 18 to 30 years with a percentage of 34, followed by those between 31 to 40 years with a percentage of 25 and the rest lie in the remaining percentages. most of farmers strongly agree that there is a higher level of coffee growing among the rural farmers of Bushika sub county Bududa district, most of the farmers strongly agree that indicators of economic welfare among the rural farmers and , most of the farmers strongly agree that there is a relationship between coffee growing and economic welfare in rural farmers of Bushika sub county in Bududa district.

Coffee growing has the potential to significantly impact the economic welfare of rural farmers in Uganda. However, several factors need to be addressed to optimize the benefits for farmers. Government support, market linkages, value addition, farmer cooperatives, income diversification, and infrastructure development are crucial aspects that need attention. A holistic approach focusing on these recommendations can contribute to improving the economic well-being of coffee farmers, making them more resilient to market fluctuations and improving their overall quality of life.

CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.0 introduction

This chapter presents the; background of the study, problem statement, objectives of the study, research questions and the significance of the study

1.1 background

Coffee is Uganda's first traded tropical commodity in the world (Verter, Bamwesigye, & Darkwah, 2015). Coffee is the major cash crop both in terms of foreign exchange and employment opportunities. Uganda ranks the second in Africa after Ethiopia and eighth in the whole world. It contributes 20 to 30% of the foreign exchange earnings (Hinrichsen et al., 2022). It is vital for both consumers and producers to understand its influence on their welfare. The situation of farmers growing coffee varies from region to region but generally, the farmers are at a disadvantage in international markets and often sell their products at low prices (Jha et al., 2011). Farmers have not only to deal with the unpredictable force of Mother Nature, but also with "the boom and bust cycles in prices of commodities," political control and inadequate income. Often the examination of the market for coffee can be widespread and focused on economic efficiency other than the local influence of market changes which often result in "the marginalization of small scale farmers, increased environmental degradation, and general rural deterioration and poverty" (Watson, 2012). With market changes, not only are the shifts seen at the economic level but also on lives of farmers at the local level. Farmers growing coffee ought to consider the worth of their crops because their access to social services such as health, education, meals and their entire livelihood is dependent on the production of their crops. Coffee farmers now sell a pound of coffee for the market price of about one dollar globally, which can retail for around ten dollars (Krisztina, 2017). The enormous majority of coffee production is traced in colonialism, during which colonialists or missionaries commonly imported coffee (Duncan, 2018). Coffee then became a "cash crop, planted and harvested by serfs on large plantations in African countries like; Ghana, Uganda among others and then exported to imperial countries" (Van Melkebeke, 2020). Ethnic relations, governments and general ways of life were transformed in these countries due to the shift to the new dependence on production of coffee (West, 2012). The market for exporting coffee has expanded with the growth of the United States economy (West, 2012). Therefore, coffee became a main source of income for most countries in

Africa, Central and South America and South Asia where colonialism existed and the environment was conducive for coffee trees.

Coffee is grown by 1.7 million farmers in addition to the industrial sector employing 5 million people through coffee value chain related activities (Ansari, Agus, & Nunoo, 2021). It is the country's target to achieve lower income status by 2040 through targeting an income level of about 20 million Ugshs per household and Arabica coffee will contribute to this achievement.

Coffee is a perennial cash crop traditionally grown in eastern Uganda along the Lake Victoria basin (Odenyo, 2018). However coffee growing is also carried out in Bududa district and the contribution of coffee growing on the welfare of people of Bududa district has encouraged the Uganda Coffee Development Authority (UCDA) to finance Arabica coffee growing to improve household incomes of Bududa rural farmers and studies by (Appleton, 2012) attached the relatively low level of poverty in these regions of Uganda to growing of coffee. Similarly, UBOS (2010) found out that the vast portion (46 percent) of households in Western Uganda were regarded as poor compared to only 11 percent and 23 percent in Central and Western Uganda respectively. UBOS (2010) strongly attributed the well-being of households in Western and Eastern Uganda to growing of coffee. The intermediate term objective of UCDA was to offer an alternative source of earning to the poor and on the other hand, the long term objective was to preserve coffee exports of Uganda, which were on a downward trend because of the coffee wilt disease (CWD) in the traditional regions of Uganda growing coffee

1.2 problem statement

Coffee is an important cash crop to the people of Bushika in Bududa District. It is produced on a large scale and it's mainly Arabica coffee. With the coffee growing in Bushika sub county Bududa district, the wellbeing of the farmers is improving in terms of housing amenities, sanitation, healthy facilities and this is succeeding therise in incomes from growing of coffee. The Bugisu cooperative union (BCU) is funding coffee growing through looking for market, improving on the varieties and providing loans to the farmers. However amidst all these most farmers of Bushika Bududa district are still under the poverty line that to say their children still go through the universal Education which is of low quality and are still failing to get the

scholastic materials. The research therefore is aiming at investigating the reasons as to why with an increasing coffee growing and production by rural farmers, they are still having low incomes that cannot support their wellbeing.

1.3 Purpose of the study

The purpose of the study is to investigate the impact of coffee growing on the economic welfare of rural farmers in Bushika Sub County in Bududa district

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1.4 Objectives of the study

- (i) To identify the level of coffee of coffee growing among the rural farmers in Bushika sub county in Bududa district
- (ii) To investigate the indicators of economic welfare among the rural farmers in Bushika sub county in Bududa district
- (iii) To establish the relationship between coffee growing and economic welfare in rural farmers of Bushika sub county in Bududa district.

1.5 Research questions

- (i) What is the level of coffee growing among the rural farmers of Bushika Sub County in Bududa district?
- (ii) What are the indicators of economic welfare among the rural farmers of Bushika Sub County in Bududa District?
- (iii) What is the relationship between coffee growing and economic welfare of the farmers of Bushika Sub County in Bududa district?

1.6 Scope of the study

The scope concentrated on the content scope, Geographical and time scope

1.7 Content scope

The study focused on coffee growing on the rural farmers and economic welfare of the people of Bushika Sub County in Bududa district.

1.8 Geographical scope

Bushika Sub County is located in Eastern region in Bugisu sub region in Bududa district bordering Kenya in the west

1.9 Time scope

The research study was carried out within a time period of November to January where by relevant information was collected from the respondents.

1.1.0 Significance of the study

The research findings will be used by other researchers that to say academicians, government, policy makers and farmers to make adjustments

(i) The government

The government will formulate new policies in relation to Agriculture basing on my research findings on how to increase incomes of rural farmers in order to be at the same level by 2040.

(ii) Academicians

Future scholars will use the study to enhance their research as far as coffee growing is concerned

(iii) Policy makers

Policy makers like the ministry of finance planning and economic development will use it design appropriate programs aimed at improving the standards of rural farmers in the country.

(iv) Rural farmers

Rural farmers will base on the research findings to develop methods and procedures of how to improve on their economic status and welfare of coffee growing farmers.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

The purpose of this chapter is to provide a detailed overview with reference to other scholars, including the meaning of Economic welfare, income of the farmers linked with objectives, problem statement, and research questions

2.1 Level of coffee growing on economic welfare of rural farmers.

A study conducted by Teuber (2010) found out that the level of coffee growing is gradually increasing together with improved quality so as to win the word market. There had been confusion about the origin of *C. Arabica* L. (Arabica coffee) (Duressa, 2018). The first belief that this plant was of Arabic origin was due to the fact that the first knowledge of the beverage and the tree was obtained from Arabia, hence the scientific name given, by Linnaeus (El-Seedi et al., 2019). At present, however, most authorities agree that Arabica coffee originated in Ethiopia. According to Yadessa, Burkhardt, Bekele, Hundera, and Goldbach (2020), all botanists who have explored the forests of the southwestern highlands of Ethiopia agree that Ethiopia is the center of diversity of Coffee Arabica.

The Intergovernmental Panel on Climate Change (IPCC, 2019) warned that humans have damaged a quarter of land on Earth (2 billion hectares) through land degradation and agriculture, which are responsible for almost a quarter of the world's greenhouse gas (GHG) emissions (Dupar, 2020). The IPCC (2018) report suggests that global emissions must halve by 2030 and be net zero by 2050 if global temperature rise is to be kept to 1.5°C (Rogelj et al., 2018). Agriculture will play an important role in managing the land and reducing GHG gas emissions.

Now, commercial important species of coffee, both of which originated in tropical Africa, are grown in some 80 countries in four continents (Africa, America, Asia and to a lesser extent Australia), of which some 50 export coffee (Melese & Kolech, 2021). Judged by total value, coffee is one of the leading commodities in international trade, currently providing revenue of over 10 billion US Dollars annually to the producing countries, and work for an estimated 20 million people who grow, process and distribute the crop throughout the world.

A study conducted by Ngarukiye (2023) found out that many South and Central American countries, including Colombia and El Salvador, and many African nations, including Uganda, Burundi, Rwanda and Ethiopia, coffee is their major source of foreign exchange

Although the original home of Arabica coffee is Ethiopia, the major producers of the crop are countries found in Latin America. Brazil is the world's largest producer and a major determinant of world supply (Deribe, 2019).

A study conducted by Nab and Maslin (2020) found out that Coffee is a luxury agricultural commodity, sometimes referred to as a “drug food,” as it provides no nutritional value. In 2018, coffee was the World's 121st most traded product, representing 0.17% of total world trade (OEC). Between 2017 and 2018 coffee exports grew by 1.49%. Coffee is the world's 70th most traded agricultural commodity (International Coffee Organization [ICO], 2019), with over 9.5 billion kg produced in 2018 with a total trade value of \$30.9 billion (OEC).

Coffee is grown in tropical regions where the ecosystems are considered fragile due to other human pressures (Hameed, Hussain, & Suleria, 2020). Coffee cultivation can play a crucial role in maintaining and providing ecosystem services at a local and national level and has a substantial role to play in mitigating the agricultural sector's environmental impact. With demand for coffee expected to triple by 2050 (Conservation International, 2019b), the increasing global demand for environmentally friendly products has pushed a rapid acceleration of sustainability initiatives among coffee producers and retailers (Noponen, 2012)

According to Pilcher (2023), the use of coffee as solid was introduced from Africa to Arabia in pre-Islamic days, where it was eaten as a compressed product much as chocolate bars are consumed in the modern world.

During the latter half of the fifteenth century coffee beverage became a much desired luxury of royalty and nobles and the test for it spread among the wealthy and even the common people (McCabe, 2014). The spreading of coffee drinking to many countries created a lucrative trade for the Arabians, which they guarded jealously for many years (Fregulia, 2019).

All botanists who have visited the coffee growing areas have reported that there is only one species of Coffee , i.e. C. Arabica which is of great value. The presence of numerous

land races (types) of coffee has been recognized for a number of years, although a thorough modern taxonomic survey is lacking (Sylvian, 1958; Wellman, 1961; Meyer, 1965; FAO, 1968; Melaku, 1982a, b; Watkins, 1985, 1987; Tewolde, 1990; Demel&Assefa, 1994; Meseret, 1996).

Traditionally, problems in coffee research have largely been confined to the cultivation, disease and pests as well as economic aspects associated with marketing of the crop (Krishnan, 2017). However, the great variability of the species, especially of Arabica coffee, in Ethiopia deserves taxonomic studies to identify and establish the different varieties/cultivars/land races (types) which will help to conserve its genetic diversity. The number of traditionally recognized land races of Arabica coffee in Ethiopia is very large. No scientist has as yet fully and systematically described and documented them (Adem, 2019).

2.2 indicators of economic welfare among the rural farmers

A study conducted by Bartl (2020) found out that for many smallholder farmers in the Mount Elgon region of Uganda, Arabica coffee cultivation is the major income-generating activity. Although it is widely known that smallholder coffee farmers often live under conditions that barely assure their survival, research to date has failed to examine the composition and distribution of wellbeing within this group

The individual indicators for the physical component of wellbeing show a very high Percentage of HHs (84.4% to 97.8%) with floor and wall materials consisting of earth (floors) and mud/soil (walls) that indicate the lowest level of welfare. In consequence, percentages for indicators showing mid-to high-valued housing materials are low (0.0% to 15.6%), which could also explain the presence of extreme values. HH access to belongings ranges from farm equipment, which nearly all HHs (97.45%) have access to, to consumer durables (mainly radio) (79.58%), cellphone (70.30%), bicycle (ranging from 37.78% to 7.03%) all the way down to motorbikes, which are only present in 8.35% of Households.

Most of the research to date dealing with the wellbeing of coffee farmers has measured the impacts of participation in specialty markets or cooperatives and focused on how certification programs affect specific aspects of coffee farmers' wellbeing (e.g., Ahmed and Mesfn 2017, Bacon et al. 2005, Ruben and Fort 2012). Even recent studies on coffee producers' wellbeing

refer to concepts of wellbeing that have been challenged or developed further, or equate wellbeing with welfare. Ahmed and Mesfn (2017), for example, use the equivalent of consumption per adult as a wellbeing indicator. The analysis of a single dimension of wellbeing such as income or expenditure has been criticized by authors in other research fields including Decancq and Lugo (2012), who investigated inequality of wellbeing in Russia. Although some researchers have used questionnaires containing direct questions about farmers' wellbeing to assess the impacts thereof (e.g., Frank et al. 2011), these studies do not clarify how farmers themselves understand wellbeing. Other authors have used related terms, such as "quality of life" (see Bacon et al., 2005), in their research on the impacts of participation in certification programs among coffee farmers in Nicaragua. However, results like those of Bacon et al. (2005) show that most coffee

2.3 Relationship between coffee growing and economic welfare

A shift of focus from growth to people's well-being was recommended by the Stieglitz commission (Oswald, 2010), which urged development of welfare indicators "beyond GDP" and more attention to the welfare indicators already included in the System of National Accounts 2008 (SNA). Indicators of inequality, sustainability and the environment, and other aspects of well-being were also called for by the United Nations' Sustainable Development Goals (SDGs). Separately, the emergence of the digital economy led to a debate over the accuracy and adequacy of the welfare indicators of the SNA. Digitalization is therefore one of the topics being addressed in the work on updating the SNA, work which also includes inequality, environmental accounts, unpaid household activities and time use and health (Reinsdorf, 2020).

A study conducted by Petit (2007) found out that the coffee industry employs about 100 million workers globally, most of whom live in low developing countries. Numerous small-holder farmers lack the business skills needed to consistently produce quality coffee for the global market. Certifiers and roasters have invested in education programs since better farming husbandry usually yields better coffee harvests and sold at higher prices from companies looking for a constant and lasting supply of coffee. Farmers then use this money to acquire health care, education and food supply thus raising their entire standard of living. Programs of training also support farmers diversify their crops so as to endure price variations that have historically hurt communities heavily dependent on a sole commodity

Since cultivated and wild coffee is often in the same general vicinity, it is hardly surprising that a large genetic variability exists in cultivated Ethiopian coffee (Melese & Kolech, 2021). According to Sylvian (1958), one of the most detailed classifications of Ethiopian land races (types) among the earlier works was that of Splatter. He based his classification almost uniquely upon the beans and recognized four main varieties. Sylvian (1955, 1958) cited 12 land races (types) in his tentative classification of coffee in Ethiopia. He considered habit of trees, size and color of leaves, calyx characteristics, size and shape of fruits and seeds as well as yielding ability in his classification.

CHAPTER THREE: RESEARCH METHODOLOGY

3.0 INTRODUCTION

This chapter explains the methods that were used to collect, organize and analyze data.

It presents the research design, population and sample size determination, data types and sources, data collection methods, data analysis, validity and reliability, ethical consideration and limitations of the study.

The tools and methods of research that were used are questionnaires, observation, and review of quantitative and qualitative documented information, books, maps and journals

3.1 Research design

Research design refers to the overall plan or strategy chosen to integrate different components of the study in a coherent and logical way. It is a framework that outlines the methods and procedures for collecting and analyzing data.

Both quantitative and qualitative approaches were used in the research. That is to say the researcher employed both primary and secondary techniques of data collection. Secondary data was got from the Bushika sub county and compared with the one that was collected and conclusions being drawn.

3.2 Target population

The information was carried from different categories of people that is to say of Bushika sub county, Business men of Bushika and farmers of coffee of Bushika sub county Bududa district
Targeting 120 farmers

3.3 Sample size

A sample of 120 respondents was used including the local leaders like the area chairperson local council three (L.C III) area councilors, businessmen and women, peasants and some other residents of Bushika subcounty. The study adopted simple random sampling where each member has equal chances of participation.

3.4 Sampling technique

Both probability and non-probability sampling technique was used to obtain the real values and the amount of coffee planted and how it has improved on the status of the farmers. Collection

Farmers were allowed to ask me any clarifications about the study. Each interview was completed in approximately 20 minutes. While the data which was collected and all the events going on in the area that might impact a farmer were recorded carefully.

The methods of data collection were questionnaires, interviews and observations.

3.5.1 interview

This is a method of data collection which involved the researcher (interviewer) asking oral questions to the respondent (interviewee) who also gives oral answers on spot. Therefore here, the researcher discussed physically with the peasants and business community of Bushika sub county in relation to the objectives of the study.

3.5.2 Observation

This is a method of data collection which involved the use of naked eyes and other body senses to collect data about the given geographical phenomena. This method therefore enabled the researcher to see some of the coffee classes produced by the rural farmers in relation to other objectives.

3.5.3 Recording

This is a method of data collection which involved capturing data for example on papers, cameras thus on memory cards, flash disks, etc. Here, the researcher captured the required data information of photographs using the camera, and also write using pen and paper where necessary.

3.5.4 Questionnaire method

A questionnaire is a tool for data collection which involves a set of questions prepared by the researcher, and these are sent to the respondents who fill the blank spaces and then collected back by the researcher. The questions are prepared according to the objectives which the researcher intends to achieve. The researcher employed this method because it saves time, covers a wider area of study hence more data can be collected.

The questionnaires with simple language were prepared so as to ease comprehension by the target audience for example the local council leaders, area councilors, businessmen among others. These had multiple choice questions, open and close ended questions.

3.6 Data analysis

According to the study objectives, Graphs, pie chart and tables will be used for presentation and finally a report will be written and submitted to the department of economics and entrepreneurship Busitema University

3.7 Ethical considerations

Informed consent is a fundamental ethical principle in research involving human subjects. It requires that participants are fully informed about the nature of the study, its purpose, procedures, potential risks and benefits, and their rights as participants. Researchers must obtain voluntary and informed consent from individuals before they can participate in the study. I was given an introductory letter from Busitema university and I took it to LC1 chairmen seeking for permission.

Confidentiality; Maintaining confidentiality is essential to protect the privacy of research participants. Researchers must take measures to safeguard the identity and personal information of individuals involved in the study. This includes using anonymized data whenever possible and ensuring that only authorized personnel have access to identifiable information. Respecting confidentiality helps build trust between researchers and participants and minimizes potential harm or negative consequences for individuals.

Data Management; Ethical research involves responsible data management practices. Researchers should handle data with integrity, accuracy, and transparency. This includes securely storing and maintaining research data, using it only for its intended purpose, and adhering to relevant data protection regulations. Proper data management also involves addressing issues such as data ownership, sharing, and retention in a manner that upholds ethical standards and respects the rights of participants.

Potential Risks and Benefits; Researchers must carefully assess and communicate the potential risks and benefits associated with participating in the study. This involves identifying any foreseeable harms that participants might encounter and taking steps to minimize or mitigate these risks. Additionally, researchers should consider the potential benefits of the research both for individual participants and for society as a whole. Balancing risks and benefits is essential in making ethical decisions throughout the research process.

CHAPTER FOUR

DATA PRESENTATION, INTERPRETATION AND ANALYSIS

4.0 introduction

This chapter presents the results and findings from the research carried out from Bushika sub county in Bududa district. Results from the level of coffee growing among the rural farmers of Bushika sub county Bududa district, indicators of economic growth among the rural farmers of Bushika Sub County and the relationship between coffee growing and economic wellbeing. The information was collected by the use of questionnaires, observation, interviewing, recording, investigating and tabulation.

4.1 SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE FARMERS

TABLE 1: shows famers' socio-demographic characteristics

Sex	Males	90	75.0
	Females	30	25.0
age range	Below 18 years	0	0.0
	(18-30)	40	33.3
	(31-40)	30	25.0
	(41-50)	20	16.7
	(51-60)	10	8.3
	Above 60	10	8.3
level of education	Illiterates	20	16.7
	Primary	50	41.7
	O'level	20	16.7
	A 'level	5	4.2

	Tertiary	15	12.5
	University	10	8.3
marital status	Married	90	75.0
	Single	20	16.7
	Divorced	10	8.3
land size	More than an acre	90	75.0
	less than an acre	30	25.0
land tenure	Owner	98	81.7
	Rent	22	18.3
Occupation	self employed	70	58.3
	government	30	25.0
	NGO	20	16.7

From the table above, most of the farmers had their own land with the percentage of 80 and the rest rent with a percentage of 20, most of the farmers practice coffee growing on more than an acre with 75% and the rest on less than an acre with 25%, most of the farmers were married with a percentage of 75, few were single with 18% and very few were divorced with 7%, most of the farmers reached primary level with a percentage of 40, 19% o level 18% illiterates and others with the lowest percentage as shown above, most of the farmers were in the age range 18 to 30 years with a percentage of 34, followed by those between 31 to 40 years with a percentage of 25 and the rest lie in the remaining percentages, most of the farmers were males with a percentage of 78 and the rest were females with a percentage of 22.

4.2 The level of coffee growing among the rural farmers of Bushika sub county Bududa district.

The respondents were asked on how many kilograms of coffee they are able to harvest at the end of every harvest. Here questionnaires were used in that they were given to the chairperson LCIII. More questionnaires were used to collect data from the LCI chairpersons of various villages within Bushika sub county Bududa district.

The interview method was also used to collect data from residents and business persons of different villages within Bushika sub county.

The results were tabulated as shown below in table 2.

TABLE 2

N o	Question		Strongly disagree	Disagree	Not sure	Agree	Strongly agree	Tota l
1	coffee growing is the major economic activity carried out	Frequenc y	5	15	10	30	60	120
		%	4.2	12.5	8.3	25	50	100
2	only one type of coffee grown is known by farmers	Frequenc y	15	10	5	10	80	120
		%	12.5	8.333333 33	4.16666 7	8.33333 3	66.666666 67	100
3	Grinded coffee earns more money after sale	Frequenc y	5	10		30	75	120
		%	4.1666666	8.333333	0	25	62.5	100

			67	33				0
4	Most of the farmers plant coffee on less than an acre	frequency	5	10	5	10	90	120
		%	4.16666667	8.33333333	4.166667	8.333333	75	100
5	There is an improvement on the quality of coffee produced	Frequency	20	30	5	5	60	120
		%	16.66666667	25	4.166667	4.166667	50	100
6	farmers of Bushika are not sure of the exact fixed price	Frequency	4	6	10	30	70	120
		%	3.33333333	5	8.333333	25	58.333333	100

From the table above, most of farmers strongly agree that there is a higher level of coffee growing among the rural farmers of Bushika sub county Bududa district.

4.3 Indicators of economic welfare among the rural farmers of Bushika sub county Bududa district.

The respondents from Bushika were tasked to express some of the indicators of economic welfare as a result of coffee growing. Here, interview guides were used to get the views especially from the locals who included the business community and other residents of Bushika as on the appendix ii question 4. Namome Irene and Nashimusi Vincent aired out the indicators of coffee growing and said coffee growing has improved on their standards of living in a way that there has been a provision of money through coffee sales after harvests. This helped in the payment of school fees for their children, acquisition of food and collection of scholastic materials.

Nangoli Davies the chairperson LC1 Bunabaana village Bumushiso parish Bushika sub county said the rural farmers have been in position to construct both permanent and temporary houses used for both shelter and business centers where other business activities are being carried out. Therefore attracting growth and development of the place.

Another respondent emphasized that coffee growing has promoted economic relationships among coffee traders in a way that coffee traders of Bushika in Bududa are in position to trade with those of Mbale. In addition cooperatives have been formed for example Konokoyi coffee cooperative union which works as the main small coffee selling point. This has finally been transported to Bugisu cooperative union where massive sales are carried out. Through these economic interactions international markets have been discovered with attractive prices therefore improving on the economic welfare of the rural farmers.

Growing coffee growing has enabled most farmers to sell some and access investments and savings.

Helps rural farmers in finance in terms of accessing loans or micro credit finances. This is through use of their business unit as collateral security in order to be given loans to further finance their businesses.

Table 3

N o	Question		strongly disagree	disagree	not sure	Agree	strongly agree	Tot al
1	coffee is the only source of income to rural farmers	Freque ncy	10	30	10	20	50	120
		%	8.333333 333	25	8.3333 33	16.666 67	41.66666 667	100
2	coffee growing has boosted early marriages	Freque ncy	30	20	15	25	30	120
		%	25	16.6666 667	12.5	20.833 33	25	100
3	coffee growing has Improved standards of living	Freque ncy	10	15	20	30	45	120
		%	8.333333 333	12.5	16.666 67	25	37.5	100
4	coffee growing has improved on the education sector	Freque ncy	15	15	25	40	25	120
		%	12.5	12.5	20.833 33	33.333 33	20.83333 333	100
5	coffee growing led to improvement of infrastructures	Freque ncy	5	15	20	30	50	120
		%	4.166666 667	12.5	16.666 67	25	41.66666 667	100
6	coffee growing has Created employment opportunities	Freque ncy	10	8	2	20	80	120
		%	8.333333 333	6.66666 667	1.6666 67	16.666 67	66.66666 667	100

From the table above, most of the farmers strongly agree that indicators of economic welfare among the rural farmers of Bushika sub county Bududa district is due to coffee growing.

4.4 The relationship between coffee growing and economic welfare in rural farmers of Bushika sub county in Bududa district.

Table 4

No	Question		strongly disagree	disagree	not sure	Agree	strongly agree	Total
1	coffee growing has increased savings among farmers	Frequency	0	0	40	20	60	120
		%	0	0	33.3333	16.6667	50	100
2	coffee growers have paid school fees for their kids	Frequency	15	15	20	30	40	120
		%	12.5	12.5	16.6667	25	33.333333	100
3	Incomes from the coffee sales have been used to pay dowry	Frequency	30	20	10	20	40	120
		%	25	16.666667	8.333333	16.6667	33.333333	100
4	coffee has promoted trade among the rural farmers	Frequency	15	20	30	20	35	120
		%	12.5	16.666667	25	16.6667	29.166667	100
5	Coffee has led to infrastructural development	Frequency	10	20	10	20	60	120
		%	8.33333333	16.666667	8.333333	16.6667	50	100
6	farmers have improved on their health through sale of coffee	Frequency	0	0	20	30	70	120
		%	0	0	16.6667	25	58.333333	100

From the table above, most of the farmers strongly agree that there is a relationship between coffee growing and economic welfare in rural farmers of Bushika sub county in Bududa district.

4.5 DISCUSSION OF RESULTS

4.5.1 socio-demographic factors

4.5.1.1 Sex and gender

The gender disparity in coffee farming can be attributed to various socio-cultural and economic factors. In many societies, traditional gender roles have assigned men as the primary breadwinners and women as caregivers and homemakers. This division of labour has influenced the participation of men and women in different sectors, including agriculture. Historically, coffee farming has been considered physically demanding and labour-intensive work, which has been associated with male-dominated activities. Additionally, cultural norms and stereotypes may discourage women from engaging in agricultural activities outside the household.

However, it is important to note that the gender gap in coffee farming is not universal and varies across regions and countries. In some areas, women play a significant role in coffee production, particularly in small-scale or subsistence farming systems. Efforts are being made to promote gender equality in agriculture by providing training, resources, and support to empower women farmers.

4.5.1.2 Level of education

The involvement of less educated individuals in coffee growing can be attributed to several factors. Firstly, coffee farming often requires practical skills and knowledge that can be acquired through hands-on experience rather than formal education. Many small-scale farmers have gained expertise through generations of family farming or apprenticeships with experienced farmers.

Secondly, less educated individuals may face limited employment opportunities in other sectors, leading them to engage in agriculture as a means of livelihood. coffee farming can provide a relatively stable income source for those with limited educational qualifications.

Lastly, the barriers to entry in coffee farming may be lower for less educated individuals due to factors such as access to land or financial resources. Starting a small-scale coffee farm may

require less capital investment compared to other agricultural enterprises, making it more accessible for individuals with limited financial means.

4.5.1.3 *Marital status*

The higher involvement of married people in coffee growing can be attributed to several reasons. Firstly, marriage often signifies a transition into adulthood and increased responsibilities, including the need for a stable income source to support a family. Engaging in coffee farming can provide a means of livelihood that can support the financial needs of a household.

Secondly, marriage may provide access to additional resources and support networks that can facilitate engagement in coffee farming. For example, married individuals may have access to family-owned land or receive support from their spouse in managing the farm.

Lastly, the division of labour within a household can influence the involvement of married individuals in coffee growing. In some cases, one spouse may take on agricultural activities while the other focuses on other income-generating activities or household responsibilities. This division of labour can be influenced by cultural norms, personal preferences, or practical considerations.

4.5.1.4 *Land size*

The majority of farmers having less than an acre of land can be attributed to several factors. Firstly, land fragmentation is a common phenomenon in many agricultural regions, particularly in densely populated areas. As land is passed down through generations, it is often divided among heirs, leading to smaller landholdings over time.

Secondly, limited access to land is a significant barrier for aspiring farmers, particularly in areas where land tenure systems are complex or where land is concentrated in the hands of a few large-scale landowners. Small-scale farmers may have limited options for acquiring larger plots of land, resulting in smaller holdings.

Additionally, economic factors such as high land prices or limited availability of suitable agricultural land may also contribute to smaller farm sizes. Small-scale farmers may focus on maximizing productivity within their limited landholdings through intensive cultivation practices.

4.5.1.5 Kind of farming

The prevalence of commercial farming over subsistence farming among coffee growers can be attributed to several factors. Firstly, commercial farming allows farmers to generate higher incomes compared to subsistence farming. By producing coffee for the market, farmers can access larger consumer bases and benefit from economies of scale.

Secondly, commercial farming often requires specialized knowledge and skills related to market demand, quality standards, and post-harvest handling. Farmers engaged in commercial coffee production may invest in training and technology to optimize their yields and meet market requirements.

Furthermore, commercial farming is often associated with access to credit, infrastructure, and market information. These resources enable farmers to invest in inputs, such as improved varieties, fertilizers, and irrigation systems, which can enhance productivity and profitability.

4.6 Coffee attributes

4.6.1 Objective one: The level of coffee growing among the rural farmers of Bushika sub county Bududa district.

From the table 2, most of farmers strongly agree that there is a higher level of coffee growing among the rural farmers of Bushika sub county Bududa district.

There are several reasons why most farmers strongly agree that there is a higher level of coffee growing among rural farmers. These reasons can be categorized into economic, geographical, and cultural factors.

Economic Factors: Coffee cultivation is often more prevalent in rural areas due to the economic benefits associated with it. Coffee farming can be a lucrative business, especially for small-scale farmers who can sell their produce locally or in the global market. It provides a stable source of income and employment opportunities for rural communities. Moreover, coffee farming often complements other agricultural activities, allowing farmers to diversify their income streams.

Geographical Factors: The geographical suitability of rural areas for coffee cultivation is another reason for its higher prevalence. Coffee plants prefer specific climatic and environmental conditions such as an altitude range, temperature, rainfall, and soil quality. Rural regions, especially those with elevated terrains or specific microclimates, often offer ideal conditions for

the successful growth of coffee crops. Such areas may have the right combination of temperature, altitude, water availability, and soil composition required for coffee farming.

Cultural Factors: Coffee cultivation has historical and cultural significance in many rural communities. In some regions, coffee farming has been a traditional occupation passed down for generations, embedded deeply within the cultural fabric of the community. Rural farmers often possess the expertise and knowledge related to coffee cultivation and processing techniques, which have been handed down through the ages. This cultural heritage and intergenerational learning make coffee growing more prevalent among rural farmers.

Supportive Infrastructure: The presence of supportive infrastructure can also contribute to a higher level of coffee growing in rural areas. Many coffee-growing regions have established processing mills, cooperatives, and marketplaces that aid farmers in harvesting, processing, and selling their coffee beans. Additionally, government agencies, NGOs, and private organizations may provide training, technical assistance, and financial support specifically tailored to rural farmers engaged in coffee production. These support mechanisms create an enabling environment for coffee cultivation in rural areas.

Market Demand and Global Supply Chains: The growing global demand for coffee and the existence of established supply chains and networks often favor rural farmers. Coffee companies and buyers frequently seek out rural farmers, recognizing the quality and unique flavors that can be found in coffees from specific regions. This market demand incentivizes rural farmers to specialize in coffee cultivation and encourages their continuous commitment to maintaining high-quality production.

It is important to note that while most farmers strongly agree on the higher prevalence of coffee growing among rural farmers, this doesn't imply that coffee farming is solely limited to rural areas. There are also instances of coffee cultivation in peri-urban or even urban environments, especially with the rise of urban gardening and specialty coffee movements. This agrees with Bacon et al. (2005)

4.6.2 objective two: Indicators of economic welfare among the rural farmers of Bushika sub county Bududa district.

From the table 3, most of the farmers strongly agree that indicators of economic welfare among the rural farmers of Bushika sub county Bududa district is due to coffee growing.

There are several reasons why most farmers strongly agree that there are indicators of economic welfare among rural coffee growers.

Income generation: Coffee farming provides a significant source of income for rural farmers. As a cash crop, coffee can be sold at local markets or exported, generating revenue and improving economic conditions for farmers. The income earned from coffee cultivation contributes to improving their standard of living, meeting basic needs, and investing in education, healthcare, and other essential services.

Employment opportunities: Coffee farming often requires intensive labor, providing job opportunities for rural communities. From cultivation and harvesting to processing and packaging, coffee production creates employment throughout the value chain, benefitting both farmers and local workers. This helps reduce unemployment rates in rural areas and contributes to the overall economic development of the region.

Market demand and price stability: Coffee is one of the most globally traded commodities, with a consistent demand in many countries. This demand leads to price stability, ensuring that farmers can earn a reliable income from their coffee crops. As long as there is a steady market for coffee, farmers can expect a fair return on their investment, which positively impacts their economic welfare

Access to credit and finance: Coffee cultivation often requires upfront investments in land, equipment, and infrastructure. However, lenders and financial institutions are more likely to provide credit and finance options to coffee farmers due to the potential profitability of the crop. Access to these financial resources allows farmers to expand their operations, increase productivity, and invest in modern agricultural techniques, which ultimately improves their economic conditions.

Value addition and diversification: Coffee farming can lead to additional economic opportunities through value addition and diversification. Many farmers engage in processing and roasting their coffee beans to sell them as specialty or branded products, commanding higher prices and increased profitability. This added value enhances their economic welfare and strengthens their position in the market.

Development initiatives and support: Governments and international organizations often provide support, training, and resources to coffee farmers to boost their economic welfare. These initiatives aim to improve agricultural practices, enhance productivity, promote sustainability, and develop infrastructure in coffee-growing regions. Such support plays a crucial role in strengthening the economic welfare of rural farmers engaged in coffee cultivation.

Overall, the positive economic impact of coffee farming, including income generation, employment opportunities, price stability, access to finance, value addition, and development support, leads most farmers to strongly agree that indicators of economic welfare are present in the coffee-growing sector. These results agree with those of Frank et al. (2011)

4.6.3 objective three: The relationship between coffee growing and economic welfare in rural farmers of Bushika sub county in Bududa district.

From the table 4, most of the farmers strongly agree that there is a relationship between coffee growing and economic welfare in rural farmers of Bushika sub county in Bududa district.

Most farmers strongly agree that there is a relationship between coffee growing and economic welfare in rural areas due to several reasons:

Market demand: Coffee is one of the most widely consumed beverages globally, creating a consistent demand for coffee beans. This demand provides farmers with a stable income source, ensuring economic stability and contributing to overall economic welfare in rural farming communities.

Employment opportunities: Coffee cultivation requires a significant amount of labor for various tasks such as planting, harvesting, processing, and packaging. This creates employment opportunities for local farmers and their families, reducing unemployment rates and increasing income levels in rural areas.

Income generation: Coffee farming can be highly profitable if done efficiently and with high-quality coffee produce. Farmers can earn substantial income through the sale of coffee beans, allowing them to improve their living standards, invest in education, healthcare, and other basic necessities.

Market integration: Coffee cultivation often involves participation in global supply chains. This integration enables farmers to access international markets and potentially receive higher prices for their coffee. This direct connection to global markets enhances economic welfare and exposes farmers to export opportunities, increasing revenue generation.

Infrastructure development: The economic benefits derived from coffee production can fund infrastructure development in rural areas, such as roads, irrigation systems, and improved access to resources and essential services. This development enhances the overall economic infrastructure of the region, attracting further investments and development projects.

Diversification of income: Many coffee farmers also grow other crops alongside coffee, allowing for crop diversification and multiple revenue streams. This diversification minimizes risks associated with solely relying on one crop, further contributing to economic resilience and welfare.

Community development: The economic impact of coffee farming extends beyond individual farmers. It supports the development of local communities by creating a demand for services and businesses, such as cafes, coffee processing facilities, and transportation services. These businesses generate employment and stimulate economic growth, benefitting the entire community. These results agree with those of Oswald, 2010

Overall, coffee cultivation contributes significantly to economic welfare in rural areas by providing market demand, income generation, employment opportunities, market integration, infrastructure development, diversification of income, and community development. It is the belief in this relationship that strengthens the conviction of farmers regarding the positive impact of coffee growing on their economic well-being.

Chapter 5

5.0 Recommendations and conclusion

5.1 Objective one; the Level of Coffee Growing among Rural Farmers in Bushika Sub County

Firstly, providing access to technical training and resources for coffee cultivation can significantly enhance the knowledge and skills of rural farmers. This could include workshops on best practices for planting, harvesting, and processing coffee, as well as guidance on sustainable farming methods. Additionally, offering financial support in the form of microloans or grants can help farmers invest in their coffee-growing operations, such as purchasing quality seeds, fertilizers, and equipment.

Furthermore, establishing cooperative networks among rural coffee farmers can enable them to collectively negotiate better prices for their produce and gain access to larger markets. This could involve creating cooperatives or farmer associations that provide shared resources and marketing opportunities. Moreover, promoting diversification in agricultural activities alongside coffee cultivation can help mitigate risks associated with fluctuations in coffee prices and yields. Encouraging the cultivation of complementary crops or engaging in agroforestry practices can contribute to a more resilient and sustainable livelihood for rural farmers.

5.2 Objective two; Indicators of Economic Welfare among Rural Farmers in Bushika Sub County

When assessing the economic welfare of rural farmers, it is essential to consider various indicators that reflect their overall well-being. One key recommendation is to evaluate household income levels, including income from both agricultural activities and non-farm sources. Monitoring changes in income over time can provide insights into the economic progress of rural households. Additionally, analyzing access to basic amenities such as clean water, sanitation facilities, and healthcare services is crucial for understanding the living standards of rural farmers.

Furthermore, measuring food security indicators such as dietary diversity, access to nutritious food, and prevalence of malnutrition can offer valuable insights into the nutritional well-being of rural communities. Assessing education levels and literacy rates among rural farmers is also important for understanding their human capital development and potential for economic advancement. Moreover, tracking land ownership and tenure security can provide indications of asset accumulation and resilience against economic shocks.

5.3 Objective three; the Relationship between Coffee Growing and Economic Welfare in Rural Farmers in Bushika Sub County

In examining the relationship between coffee growing and economic welfare among rural farmers, it is important to consider specific recommendations that address this connection. Firstly, promoting sustainable coffee production practices that prioritize environmental conservation and resource efficiency can contribute to long-term economic stability for farmers. Implementing agroecological approaches that minimize chemical inputs and enhance biodiversity can lead to improved soil fertility and reduced production costs.

Additionally, fostering market linkages that connect smallholder coffee producers to fair trade or specialty coffee markets can enhance their income opportunities. Supporting initiatives that facilitate direct trade relationships between farmers and buyers can result in higher prices for quality coffee products. Furthermore, investing in infrastructure development such as road networks and storage facilities can reduce transportation costs and post-harvest losses, thereby improving the economic returns for coffee-growing communities.

Moreover, integrating gender-inclusive strategies that empower women in coffee-growing regions through training programs, access to land rights, and participation in decision-making processes can contribute to enhanced economic welfare within rural households.

5.2 Conclusion:

Coffee growing has the potential to significantly impact the economic welfare of rural farmers in Uganda. However, several factors need to be addressed to optimize the benefits for farmers. Government support, market linkages, value addition, farmer cooperatives, income diversification, and infrastructure development are crucial aspects that need attention. A holistic approach focusing on these recommendations can contribute to improving the economic well-being of coffee farmers, making them more resilient to market fluctuations and improving their overall quality of life.

However because of limited time and money, I was unable to find out control measures of coffee pesticides and ways of improving on the quality of coffee so other researchers can find out more about these aspects.

REFERENCES

- Adem, M. W. (2019). *Quality control, quality determinants and indication of geographic origin of Ethiopian coffee*. Ghent University,
- Ansari, N. A., Agus, C., & Nunoo, E. K. (2021). Foundations of ‘SDG15–LIFE on Land’: Earth, Forests and Biodiversity. In *SDG15–Life on Land: Towards Effective Biodiversity Management* (pp. 7-48): Emerald Publishing Limited.
- Bartl, A. L. (2020). The wellbeing of smallholder coffee farmers in the Mount Elgon region: a quantitative analysis of a rural community in Eastern Uganda. *Bio-Based and Applied Economics*, 8(2), 133.
- Deribe, H. (2019). Review on Factors which Affect Coffee (*Coffea Arabica* L.) Quality in South Western, Ethiopia. *International Journal of Forestry and Horticulture*, 5(1), 12-19.
- Duncan, J. S. (2018). Embodying colonialism? Domination and resistance in nineteenth-century Ceylonese coffee plantations. In *Culture and Society* (pp. 317-338): Routledge.
- Dupar, M. (2020). The IPCC’s Special Report on Climate Change and Land: What’s in it for Africa?
- Duressa, E. L. (2018). Discourse Analysis of Origin and Distribution of Coffee Arabica. *American Research Journal*, 4(1), 10.
- El-Seedi, H. R., Khalifa, S. A., Yosri, N., Khatib, A., Chen, L., Saeed, A., . . . Verpoorte, R. (2019). Plants mentioned in the Islamic Scriptures (Holy Qur’ân and Ahadith):

- Traditional uses and medicinal importance in contemporary times. *Journal of ethnopharmacology*, 243, 112007.
- Fregulia, J. M. (2019). *A Rich and Tantalizing Brew: A History of How Coffee Connected the World: Food and Foodways*.
- Hameed, A., Hussain, S. A., & Suleria, H. A. R. (2020). “Coffee bean-related” agroecological factors affecting the coffee. *Co-evolution of secondary metabolites*, 641-705.
- Hinrichsen, E., Walakira, J. K., Langi, S., Ibrahim, N. A., Tarus, V., Badmus, O., & Baumüller, H. (2022). Prospects for Aquaculture Development in Africa: A review of past performance to assess future potential.
- Jha, S., Bacon, C. M., Philpott, S. M., Rice, R. A., Méndez, V. E., & Läderach, P. (2011). A review of ecosystem services, farmer livelihoods, and value chains in shade coffee agroecosystems. *Integrating agriculture, conservation and ecotourism: examples from the field*, 141-208.
- Krishnan, S. (2017). Sustainable coffee production. In *Oxford research encyclopedia of environmental science*.
- Krisztina, P. C. (2017). The global coffee commodity chain: coffee farmers in Costa Rica and its “ups and downs”. *Journal of Globalization Studies*, 8(2), 92-107.
- McCabe, I. B. (2014). *A history of global consumption: 1500-1800*: Routledge.
- Melese, Y. Y., & Kolech, S. A. (2021). Coffee (*Coffea arabica* L.): Methods, objectives, and future strategies of breeding in Ethiopia. *Sustainability*, 13(19), 10814.
- Nab, C., & Maslin, M. (2020). Life cycle assessment synthesis of the carbon footprint of Arabica coffee: Case study of Brazil and Vietnam conventional and sustainable coffee production and export to the United Kingdom. *Geo: Geography and Environment*, 7(2), e00096.
- Ngarukiye, N. (2023). Economic Analysis of the Coffee Market in Rwanda. *Asian Journal of Advances in Agricultural Research*, 23(1), 10-40.
- Odenyo, V. (2018). ENVIRONMENTAL IMPACTS OF POPULATION AND CULTIVATED ECOSYSTEMS ON THE WATER RESOURCES OF THE LAKE VICTORIA BASIN: A REVIEW IN RELATION TO WATER RESOURCES PLANNING AND MANAGEMENT. *Journal of Environmental Sustainability Advancement Research*, 4.
- Oswald, A. J. (2010). Emotional prosperity and the Stiglitz Commission. *British Journal of Industrial Relations*, 48(4), 651-669.

- Petit, N. (2007). Ethiopia's coffee sector: A bitter or better future? *Journal of Agrarian Change*, 7(2), 225-263.
- Pilcher, J. M. (2023). Food in world history.
- Reinsdorf, M. M. B. (2020). *Measuring economic welfare: what and how?* : International Monetary Fund.
- Rogelj, J., Popp, A., Calvin, K. V., Luderer, G., Emmerling, J., Gernaat, D., . . . Marangoni, G. (2018). Scenarios towards limiting global mean temperature increase below 1.5 C. *Nature Climate Change*, 8(4), 325-332.
- Teuber, R. (2010). Geographical indications of origin as a tool of product differentiation: The case of coffee. *Journal of International Food & Agribusiness Marketing*, 22(3-4), 277-298.
- Van Melkebeke, S. (2020). Mobilizing Coffee-Cultivating Labor. In *Dissimilar Coffee Frontiers* (pp. 151-195): Brill.
- Verter, N., Bamwesigye, D., & Darkwah, S. A. (2015). *Analysis of coffee production and exports in Uganda*. Paper presented at the International Conference on Applied Business Research.
- West, P. (2012). *From modern production to imagined primitive: The social world of coffee from Papua New Guinea*: Duke University Press.
- Yadessa, A., Burkhardt, J., Bekele, E., Hundera, K., & Goldbach, H. (2020). The major factors influencing coffee quality in Ethiopia: the case of wild Arabica coffee (*Coffea arabica* L.) from its natural habitat of southwest and southeast afro-montane rainforests. *African Journal of Plant Science*, 14(6), 213-230.

Chapter six: APPENDICES

6.1 QUESTIONNAIRE

BUSITEMA UNIVERSITY

FACULTY OF SCIENCE AND EDUCATION

NAGONGERA CAMPUS

DEPARTMENT OF ECONOMICS AND ENTREPRENEURSHIP

SAMPLE QUESTIONNAIRE FOR THE LOCAL COUNCIL LEADERS (LC 1 CHAIR PERSONS OF VARIOUS VILLAGES WITHIN BUSHIKA SUB-COUNTY)

My name is WATSEMBA MARY a student of Busitema University, pursuing a Bachelors' Degree in Science Education. Currently undertaking my research work on the, **“Impacts of coffee growing on the economic wellbeing of rural farmers of Bushika sub-county in Bududa district”**. Therefore, you have been selected to take part of this research in answering these questions as a leader in this society. All answers provided in this study will be kept strictly confidential, so feel free to give your views.

GUIDELINES:

Please tick on the response appropriately

SECTION A

DEMOGRAPHIC

1. Sex: male ☐ female ☐

2. Respondent's contact.....

3. Age: below 18 ☐ 18-30 ☐ 31-40 ☐ 41-50 ☐ 51-60 ☐ 60 above ☐

4. Marital status: Married ☐ Single ☐ Divorced ☐

5. Level of education: primary ☐ O'level ☐ A 'level ☐ Tertiary ☐

University ☐

6. Are you a coffee grower? Yes ☐ No ☐

7. Land size: Less than an acre ☐ Greater than an acre ☐

8. Plantation size: Less than an acre ☐ Greater than an acre ☐

9. Land tenure: Owner ☐ Rent ☐

10. Occupation: farmer ☐ Self-employed ☐ government employed ☐ NGO ☐

Please indicate to the extent to which you agree or disagree with each of the following statements.

Please indicate your preference by marking with a tick the appropriate block provided.

1. Strongly disagree SD

2. Disagree D

3. Not sure NS

4. Agree A

5. Strongly agree SA

SECTION B

6.2 INTERVIEW GUIDE

TO RESIDENTS/BUSINESS COMMUNITY IN BUSHIKA SUB-COUNTY

LEVEL OF COFFEE GROWING ON THE ECONOMIC WELFARE OF RURAL FARMERS OF BUSHIKA SUB-COUNTY IN BUDUDA DISTRICT

Hello, my name is Watsemba Mary, a student of Busitema University, pursuing a Bachelors' Degree in Science Education. Currently undertaking my research work on the, **“the level of coffee growing on the economic welfare of rural farmers sub-county in Bududa district”** which is related towards addressing the low-income levels amidst the continuous coffee growing in Bushika subcounty. Therefore, you have been selected to take part in this research in answering these questions. All answers provided in this study will be kept strictly confidential,

<i>o</i>	<i>Question</i>	<i>SD</i>	<i>D</i>	<i>NS</i>	<i>A</i>	<i>SA</i>
1.	coffee growing is the major economic activity carried out in Bushika sub county Bududa district					
2.	Coffee growers of bushika know only one type of coffee grown					
3.	Which class of coffee earns farmers more money after sale and is less tiresome					
4.	Most of the farmers plant coffee on less than an acre apart from a few farmers					
5.	There is an improvement on the quality of coffee produced by the farmers of Bushika sub county					
6.	Coffee growers of Bushika are not sure of the exact fixed price at which they should sell their coffee					

APPENDIX III

TO RESIDENTS/BUSINESS COMMUNITY IN BUSHIKA SUB-COUNTY

INDICATORS OF COFFEE GROWING ON THE ECONOMIC WELFARE OF RURAL FARMERS OF BUSHIKA SUB-COUNTY IN BUDUDA DISTRICT

<i>o</i>	<i>Question</i>	<i>SD</i>	<i>D</i>	<i>NS</i>	<i>A</i>	<i>SA</i>
1.	COFFEE growing is the major economic activity in Bushika sub county town Bududa district					
2.	early marriages as farmers are able to acquire basic needs after selling coffee					
3.	Improved standards of living through construction of good houses for accommodation					
4.	coffee growing has improved on the education sector in Bushika sub county Bududa district					
5.	coffee growing led to improvement and construction of infrastructures in Bushika sub county					
6.	Creation of employment opportunities of youth in kyangalanyi in Bushika which has earned them a living.					

Hello, my name is Watsemba Mary, a student of Busitema University, pursuing a Bachelors' Degree in Science Education. Currently undertaking my research work on the, **“indicators of economic welfare of rural farmers sub-county in Bududa district”** which is related towards addressing the low-income levels amidst the continuous coffee growing in Bushika subcounty. Therefore, you have been selected to take part in this research in answering these questions. All answers provided in this study will be kept strictly confidential, so feel free to participate.

TO RESIDENTS/BUSINESS COMMUNITY IN BUSHIKA SUB-COUNTY

RELATIONSHIP BETWEEN COFFEE GROWING AND THE ECONOMIC WELFARE OF RURAL FARMERS OF BUSHIKA SUB-COUNTY IN BUDUDA DISTRICT

Hello, my name is Watsemba Mary, a student of Busitema University, pursuing a Bachelors' Degree in Science Education. Currently undertaking my research work on **the relationship between the coffee growing and the economic welfare of rural farmers sub-county in Bududa district**" which is related towards addressing the low-income levels amidst the continuous coffee growing in Bushika subcounty. Therefore, you have been selected to take part in this research in answering these questions. All answers provided in this study will be kept strictly confidential, so feel free to participate.

<i>estion</i>	<i>SD</i>	<i>D</i>	<i>NS</i>	<i>A</i>	<i>SA</i>
1.	coffee growing has increased savings among farmers				
2.	coffee growers have paid school fees for their kids				
3.	Incomes from the sale of coffee have been used to pay dowry by the male farmers of bushika sub county				
4.	coffee has [promoted trade among the rural farmers of bushika sub county				
5.	Coffee has led to infrastructural development in a way that farmers have been able to construct houses				
6.	coffee farmers through the sale of coffee have improved on their health conditions because of balanced diet after coffee sales				

THANKS FOR THE PARTICIPATION