STATUS AND STRATEGIES TO COMBAT FOOD SHORTAGE IN KYERE SUB-COUNTY, SERERE DISTRICT, EASTERN UGANDA.

Compiled

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A SPECIAL PROJECT RESEARCH SUBMITTED TO THE DEPARTMENT OF AGRICULTURE, FACULTY OF SCIENCE AND EDUCATION IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF BACHELOR OF SCIENCE AND EDUCATION IN BUSITEMA UNIVERSITY.

JANUARY, 2024

DECLARATION

I' Emiku David declare that this is my own original work and has not been submitted by anybody else for any academic award in any institution of higher learning.

Signature; 

Date; 

APPROVAL

This is to certify that this research book has been developed under my supervision and I approve it's submission to the Faculty of Science and Education Busitema University.

Sign ..... **Date**: 22/10/2024

MR. DRAMADRI GERALD AFAYO

(University research supervisor)

ACKNOWLEDGMENT

I extend my special thanks to the Almighty God for his wonderful blessing and guidance. Without God's intervention I would not have reached this far.

My grateful thanks goes to my supervisor (Mr Dramadri Gerald Afayo) for his professional advice and support he rendered to me throughout this research project.

Special thanks go to my respondents from Kyere sub-county for they were so hospitable, Spared their time to give me the data required to accomplish this study.

I thank my lovely parents for their financial support, care, advice and prayers that made me reach great heights.

Special thanks go to all my lecturers at Busitema University specifically the faculty of science and education the department of agriculture headed by Mr Dramadri Gerald Afayo.

DEDICATION

I dedicate this research book to my family members most especially my father (Okiror Gabriel Ekellot), my mother (Akello Susan), my brother (Okaru Emmanuel) and my sister (Akopo Rose Mary). And not forgetting my supervisor (Mr Dramadri Gerald Afayo) and my lovely friend (Apimo phoebe).

ABBREVIATIONS AND ACRONYMS

UN United Nations

FAO Food and Agricultural Organisations

ECHO European Commission Humanitarian Aid Office

MOH Ministry of Health

WFP World Food Program

IFPRI International Food Policy Research Institute

IITA International Institute of Tropical Agriculture

US United States

WB World Bank

FEWS NET Famine Early Warning Systems Network

UNDP United Nations Development Program

NARO National Agricultural Research Organisation

IPCC Intergovernmental Panel on Climate Change

DEWSs Drought Early Warning Systems

HDDS Household Dietary Diversity Score

EFSA Emergency Food Security Assessment

GFPR Global Food Policy Report

SPSS Statistical Package for the Social Sciences

IPC Infection Prevention and Control

SSA Sub-Saharan Africa

UNBS Uganda National Bureau of Standards

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ABSTRACT

The study assessed the status and strategies to combat food shortage in Kyere sub-county, Serere district, Eastern Uganda. The objectives of the study were to ascertain the factors responsible for food shortages in Kyere Sub-County Serere District, To investigate whether people in Kyere Sub-County Serere District have sufficient meals in their daily lives, to examine the effects of food shortage on the livelihood of the people in Kyere Sub-County Serere District and to find out how communities are coping with food shortages in Kyere Sub-County in Serere District.The study used a cross sectional survey design. The population of the study comprised of the local residents and farmers of Kyere sub-county who were drawn from six parishes of Kamurojo, Kangodo, Kelim, Kyere, Olupe and OMagoro. The sample size of the study was 380 respondents. The methodology used was both qualitative and quantitative approaches. The respondents were selected using convenience sampling technique. Data was collected using Questionnaires. The effect of food shortages are equally multi-faceted, ranging from malnutrition of children and emaciation of their parents, fear and panic among people and loss of self-esteem as some families were forced to seek shelter with friends, while others resorted to eating mangoes to survive. Lastly, the communities are coping with food shortages by buying extra food from markets from within and far away, exploring strategies of food storage especially foods that can be dried and kept and growing drought resistant crops, irrigation of crops during dry spells and careful spending and planning of or on food by rationing the available food for one meal a day through the difficult food shortage period. Finally, there is need for them to diversify the mechanisms.

1.0 CHAPTER ONE

1.1 INTRODUCTION

1.1.1 Background to the study

Food insecurity is defined as a situation that occurs “whenever the availability of nutritionally adequate and safe foods, or the ability to acquire acceptable foods in socially acceptable ways, is limited or uncertain. Household food insecurity is inadequate access to a sufficient quantity and quality of food due to financial constraints—is a growing public health concern in Canada. Food insecurity is associated with heightened nutritional vulnerability, as well as a wide spectrum of physical and mental health problems. (Tarasuk et al, 2012)

The issue of food crisis in world is a global phenomenon. The global food crisis is affecting millions of people around the world. In 2023, record levels of acute food insecurity persist due to protracted food crises and new shocks. In 48 countries, 238 million people are facing high levels of acute food insecurity – 10% more than in 2022. The EU is at the forefront of fighting global hunger. The European Commission is a member of the Food Assistance Convention and commits to providing a minimum of 350 million annually to alleviate food insecurity. In 2022, the EU largely exceeded this commitment already allocating approximately 1 billion for humanitarian food assistance and nutrition, which accounted for more than 1/3 of the EU's total humanitarian budget. In 2023, the main drivers were conflict/insecurity, economic shocks, and weather extremes.

In addition to clothes and shelter, food is one of the most essential commodities because it is necessary for human survival. Typically, these three things are considered to be a man's basic necessities (Fawole, Ilbasmis, & Ozkan, 2015). A scenario when people or groups have restricted access to enough, safe, and nourishing food at certain periods of the year is referred d to as seasonal food insecurity. It is a type of food insecurity brought on by seasonal changes in the availability, cost, and accessibility of food. Climate, farming methods, and economic situations are only a few examples of the variables that might have an impact on this sort of food insecurity. Due to several variables, some of which are natural while others are artificial depending on the conditions and the countries concerned, food security in Africa is now seriously threatened. A world where everyone has access to food that is safe, nourishing, and

inexpensive and forms the basis for an active and healthy lifestyle is considered to be one that is in food secure (Akongdit, 2014). Food insecurity is the inability to obtain food in socially acceptable ways or the unpredictable or limited supply of food that is nutritionally appropriate. (Dowler & O'Connor, 2012).

Since 1 billion people worldwide suffer from starvation, malnutrition, and the Food and Agriculture Organization, food security remains a significant global concern (FAO 2009). According to the UN's Food and Agricultural Organization (FAO), there are three primary types of food insecurity. Acute: severe malnutrition and hunger that poses an immediate threat to people's lives (such as famine), Occasionally: This happens when transitory, unique conditions lead to food insecurity, Chronic: Consistent or ongoing danger to ability to meet dietary demands (Barrett & Lentz, 2010). In developing nations, the inability of people to access food owing to poverty is the main source of food insecurity (Wambede, 2022). While the rest of the world has made significant progress towards poverty alleviation, Africa, in particular Sub-Saharan Africa continues to lag behind. Projections show that there will be an increase in this tendency unless preventive measures are taken. Food security on the continent has worsened since 1970 and the proportion of the malnourished population has remained within the 33 to 35 percent range in Sub-Saharan Africa. The prevalence of malnutrition within the continent varies by region. It is lowest in Northern Africa with 4 percent and highest in Central Africa with 40 percent. (Angela, 2014).

Rapid urbanization and increasing urban poverty are shifting the historical locus of food insecurity from the rural areas to the cities of Africa. The lack of access to food is primarily the result of household poverty, high unemployment, and limited income-generating opportunities rather than any absolute food shortages. There is a widespread notion that urban agriculture will resolve the crisis of urban food insecurity in the 21st century. Contemporary policy debates are dominated by the idea that food insecurity among poor households can be mitigated by urban agriculture. African city governments are themselves far from convinced that urban land should be used for food production. They either adopt a laissez-faire attitude to the presence of fields and livestock in cities or actively oppose their presence in the urban environment. (Crush, and Frayne,B, 2011).

The diversity of food crises are interlinked and mutually reinforcing. Food insecurity is caused by a combination of factors that feed off each other and by the interaction between hazards and people specific vulnerabilities. Conflict remains the main driver of food insecurity in 2023. Conflict disrupts income sources and hinders food access due to market disruptions, leading to price spikes and food shortages. In addition, it affects the delivery of humanitarian aid, and warring parties intentionally deny access to food as a weapon of war. Economic shocks are a prominent driver of hunger, exacerbated by repercussions of the Russian invasion of Ukraine. The economic resilience of poor countries has dramatically decreased, and they now face extended recovery periods and less ability to cope with future shocks. Weather extremes: droughts, floods, dry spells, storms, cyclones, hurricanes, typhoons, or the untimely start of rainy seasons remain key drivers of food insecurity. They directly impact crops and livestock, disrupt transportation routes, and hinder market stocking. Many countries are still recovering from the prolonged effects of droughts or floods. The humanitarian crisis is exacerbated by both the absence of humanitarian assistance in the area and the frequent theft of humanitarian supplies (ECHO, 2023)

Uganda, According to the recent survey by The World Bank (2022) it argues that between June to August 2022, it indicated that Ugandan households have been facing significant difficulties in accessing essential goods such as cooking oil, fuel, beef, bread, rice and other food items Lack of money and increased prices were the key reasons behind low access. Food insecurity in Uganda remains stubbornly high. During Round 9 of the survey conducted in August 2022, food insecurity measured by moderate and severe food insecurity indexes were at very high levels of 48 and 11 percent respectively. Region-wide, the highest levels of food insecurity were observed in the poorest Eastern and Northern regions.Kyere is as well vulnerable being located in the Eastern region.

The proportion of food secure population has declined from 83% in July 2016 to 69% in January 2017. An estimated 10.9 million people are experiencing acute food insecurity of which 1.6 million (5%) are in a crisis situation. They are mainly in Central- (0.58 million); Karamoja (0.12 million), Teso (0.2 million), East Central (0.38 million) and South Western (0.31 million) regions. All regions in the country have a combined food security stressed population of 9.3 million (26%). The worsening food security situation is attributed to the effects of the 2016 OF

the prolonged drought and plant pests and animal diseases, which resulted into reduced crop and livestock production. There has also been excessive sale of food resulting into reduced household stocks and high food prices. Resurgence of crop and livestock pests and diseases also contributed to reduction in production. Above all the Covid-19 affected the population and rendered most of them unable to provide food (MoH, 2021).

Despite agriculture being the main economic activity in Uganda, increasing food prices within the country point to the growing challenge of food shortage. In 2016, food shortage was reported in some parts of Uganda (mainly in Karamoja sub region and parts of Serere) and Government resorted to temporary relief distribution of food from other regions of the country (Ssennoga et al 2019). According to the rising level of food shortages in Uganda, much attention should be done to calm down the rising problem in the country specifically Serere district. The sensation of the people about the causes and solutions of food shortages in Uganda should be done in this research so us to increase level of food availability in the district. This problem can be solved if the population in the sub county accepts to follow the measures.

Numerous disaster related issues have hampered development in Serere district and the sub region as a whole (Wambede &Twehayo, 2022) .Serious setbacks resulted cattle rustling and insurrection by the Karmojong warriors between 1985 and 1993.Famine that ensued from 1992 to 1994, was made worse by an epidemic of the cassava mosaic virus sickness that caused the extinction of known types of cassava. Floods in 2007 devastated the whole sub region, claiming lives and destroying property. A severe drought hit the area in 2009, destroying 65% of the crops.Serere was vulnerable to a variety of risks catastrophes since then to date. Such catastrophes are floods, crop and animal epidemics, severe hails storms, land conflicts, pests infestation, environmental degradation and drought, just like other districts in the sub region. This have perpetrated a situation of food insecurity to date.

1.1.2 Problem Statement

Serere district is one of the districts in Teso region having high population experiencing a high cute seasonal food shortage. In terms of magnitude (96,900 people) in Serere experience high level of food shortage. In Kyere, sub-county particularly, people are hard hit and are experiencing serious issues in food shortage. From 2017 to date there have been periods of long drought and scanty rain , that have hampered food production in Serere district , food shortage has affected the population in as far as food availing in concerned (WFP, 2022).The scenario above is presumed to have been caused by a multiplicity of factors , such as floods, land conflict, extended drought and famine, crop and animal disease, pest infestation, hailstorms, lightning, environmental degradation. If no attempt is made to ameliorate the situation, it may lead to disastrous effects, especially given that food is essential for human existence. Therefore, while some of these factors may be known in as far as , Serere district specifically Kyere sub-county is affected , there is need for comprehensive investigation on the possible control measures of food shortage in Kyere sub-county, Serere district , hence the need for this study.

1.1.3 Justication for the research

This study is important because of the following reasons explained below;

(1) It may expose some of the unforeseen causes of food shortages that may be controlled using observations from this study.
(2) Food demand is rising quickly in nations as a result of factors like population growth, incomes, urbanization patterns, poverty levels, climate change, and poor agricultural practices, it is important to carry out this study for purposes of getting equipped with remedies to such a situation.
(3) The study is important because it will expose the causes of food shortages in Kyere Sub County and solicit ways of remedying them so as for the population to be safe from food related problems.
(4) The study is also important in understanding the trend of food insecurity in Kyere Sub County and help sensitize the population or farmers in controlling such crises

1.1.4 Objectives of the study

1.1.4.1 General objective

The general objective of the study was to assess the status and strategies to combat food shortage in Kyere sub-county, Serere district, eastern Uganda.

1.1.4.2 Specific objectives

1. To ascertain the factors responsible for food shortages in Kyere Sub-County Serere District.
2. To investigate whether people in Kyere Sub-County Serere District have sufficient meals in their daily lives.
3. To examine the effects of food shortage on the livelihood of the people in Kyere Sub-County Serere District.
4. To find out how communities are coping with food shortages in Kyere Sub-County in Serere District.

1.1.5 Research questions

1. What are the effects of food shortage on the livelihood of the people in Kyere Sub-County Serere District?
2. What factors are responsible for food shortages in Kyere Sub-County Serere District?
3. Do people in Kyere Sub-County Serere District have sufficient meals in their daily lives?
4. How communities are coping with food shortages in Kyere Sub-County in Serere District?

2.0 CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1 INTRODUCTION

This chapter reviews literature on status and strategies to combat food shortage. The sources of literature are internet and authors of books, Newsletters, scholarly articles and dissertations that have a bearing on the study. Documents such as books, magazines and Journals. The main purpose of reviewing the literature is to understand the status and strategies to combat food shortage causes, being the research problem under study. The literature is reviewed basing on the objectives of the study; to ascertain the factors responsible for food shortages, to investigate whether people have sufficient meals in their daily lives , to examine the effects of food shortage on the livelihood of the people and to find out how communities are coping with food shortages. The review is as follows;

2.1.1 Historical Food Insecurity in Serere District

Serere District, located in the Eastern Region of Uganda, has a history of food insecurity that has had significant impacts on the livelihoods and well-being of its population. This section provides a detailed overview of the historical factors contributing to food insecurity in Serere District, including relevant citations from authoritative sources.

Serere District is predominantly an agricultural region, with the majority of its population relying on subsistence farming for their livelihoods. However, the district has faced numerous challenges related to climate variability, which have had adverse effects on agricultural productivity and food security. According to a study conducted by the International Food Policy Research Institute (IFPRI), climate change has led to increased temperature and changes in rainfall patterns in Uganda, including Serere District. These changes have resulted in prolonged dry spells, erratic rainfall, and increased frequency of extreme weather events such as droughts and floods (Nhemachena et al., 2015). These climatic challenges have significantly impacted crop production and livestock rearing in the district, leading to reduced yields and increased vulnerability to food insecurity.

Another key factor contributing to food insecurity in Serere District is the limited access to productive resources among smallholder farmers. Access to land, credit, improved seeds, fertilizers, and modern farming technologies is crucial for enhancing agricultural productivity and ensuring food security. A report by the Food and Agriculture Organization (FAO), 2017 highlights that land fragmentation is a major issue in Serere District, with smallholder farmers having limited access to sufficient land for cultivation (FAO, 2017). This has hampered their ability to expand production and diversify crops, making them more susceptible to food shortages during periods of low productivity.

Furthermore, access to credit for agricultural investments remains limited in Serere District. Smallholder farmers often lack the financial resources to purchase inputs, such as improved seeds and fertilizers, which can significantly improve crop yields. The lack of access to credit constrains their ability to invest in agricultural activities and adapt to climate change (Nhemachena et al., 2015).

Post-harvest losses and inadequate storage facilities also contribute to food insecurity in Serere District. After harvest, crops are susceptible to spoilage, pests, and diseases if not properly stored. Inadequate storage facilities and poor post-harvest handling practices result in significant losses, reducing the availability of food for consumption and sale. A study conducted by the International Institute of Tropical Agriculture (IITA) found that post-harvest losses in Uganda range from 20% to 30% for cereals and up to 50% for perishable crops like fruits and vegetables (IITA, 2020). These losses exacerbate food insecurity in Serere District, where farmers already face challenges in achieving sufficient yields.

2.1.2 Theoretical Review

Over the past 30 years, food security in Africa has significantly deteriorated due to rapid population expansion and rising food consumption, which continuously outpaces moderate agricultural production growth (IITA, 2020). An estimated 180 million (or 23%) of the 800 million individuals who are food insecure worldwide reside in Sub-Saharan Africa (Pinstrup-Anderson et.al, 2001).

Household food insecurity has had disastrous impacts in a number of African nations. Examples include Cameroon in West Africa, Egypt in Northern Africa, Ethiopia in Eastern Africa, and

South Africa in the far southernmost part of Africa. The World Food Programme (WFP) categorizes Cameroon as a country with food insecurity and has further shown that household food consumption has decreased since the early 1980s. As a result, the nation's child mortality rate is rising rather than decreasing, and 19% of early children are underweight (Oneworld.net (US), 2009). Ethiopia has a severe food shortage problem. Out of Ethiopia's 76.9 million inhabitants, about 7 million are considered to be food insecure, while another 10 million are considered to be drought susceptible. The country's rapid population growth makes food insecurity even worse (Chu, 2009). South Africa has been impacted by the high cost of food in the weakening global economy, while producing bountiful harvests, particularly in the 2007–2008 season. Particularly for the poorest family households, who spend a significant portion of their income on food, high food prices are a source of difficulty. (Oneworld.net (US), 2009).The limited market access and income opportunities further contribute to food insecurity in Serere District. Smallholder farmers often struggle to find reliable markets for their produce, leading to low prices and income levels. This limits their ability to invest in agricultural inputs, diversify production, or purchase food during periods of scarcity. A report by the World Bank highlights that rural areas in Uganda, including Serere District, face challenges related to poor infrastructure, limited transportation networks, and weak market linkages (World Bank, 2019).

2.1.3 The factors responsible for food shortages

Seasonal changes due to climate change remain one of the biggest challenges facing Uganda today. The increasing temperatures, drought, erratic rainfall, and floods adversely affect farmers' yields.This creates an uncertain future for farmers and everyone who depends on agriculture as a source of livelihood. According to the Uganda food security outlook conducted by the Famine Early Warning Systems Network (FEWS NET)(2022) , the full start of the 2022 first bimodal rainy season (March to June) was delayed by 30 to 40 days or more across the country. The season is believed to be among the driest on record since 1981 in large parts of northern Uganda. In most parts of northern and eastern Uganda such as Serere district, it forced farmers to replant when poor conditions at the start of the season failed early planted crops. This meant that crop development was delayed by approximately a month, leading to crop damage and reduced crop yields. This means less food was available to feed households and participate in the crop market. This review gives a general view of the effects of drought in Uganda and makes mention of Serere district. Much as Kyere sub county is located in Serere district, it does not directly pin

evidence on Kyere. This is a gap that this study hopes to fill by understanding the reality of the causes of food shortages in the context of Kyere parish

Further, FEWS NET (2022) highlighted that the greater north and the Teso sub-region were expected to be hit the most with bad outcomes prevailing hot weather through the start of the second season harvest in November/December. Importantly, the worst-affected households were experiencing the third consecutive below-average production season. Considering that such households possess limited coping capacity, they most likely went into a food consumption crisis. As of January 9, 2023, the World Food Program (WFP) Hunger Map shows that 16.4 million Ugandans face insufficient food consumption. This represents an increase of 1.2 million food-insecure persons based on the last three months of 2022. The live map shows chronic malnutrition for 28.9 percent of children under 5 years in Uganda. For instance, poor food consumption has likely contributed to increased levels of acute malnutrition in the Karamoja region, and the Easter region of Uganda covering areas of Serere, Kumi ,Katakwi and Kumi districts. Long spells of drought were therefore the cause of food shortages .The literature evidently mentions the food shortages areas in Eastern Uganda .Although Kyere sub county is embedded in Serere district, there is nothing in the literature referent to it .is only inferential that such factors are related to food shortages in Kyere parish .To unravel this gap the study will establish the reality in the context of what the respondents in the area of study may say, hence a need for this study.

Uganda produces a lot of vegetables and fruits for export, but about 40% of these are wasted, as they do not meet food quality standards. This is besides all food lost at the farm level, mainly because of poor storage and inadequate value-addition infrastructure in rural areas. Farmers lack modern drying and storage facilities for their products, and most rely on the sun to dry their produce. The Food and Agriculture Organization (FAO) (2023) estimates that about UGX 72 billion is lost every season because of limited investment in addressing food waste and losses. It has also attributed this to shortages of food in the rural areas of Uganda .Besides that long spells of dought cause food shortages because of poor harvests . It is worth noting that while there are on-going efforts by both the government and donors to increase agricultural productivity, there have been effects of weather hampering these efforts. For instance, led by the FAO, and the United Nations Development Program (UNDP), the project “Fostering Sustainability and Resilience for Food Security in the Eastern parts of Uganda and Karamoja, by increasing

harvests of maize, sorghum, cassava, sweet potato, vegetables, and beans by 20%, it was affected by long drought patterns .This literature generalizes the Eastern part of Uganda where evidently Kyere sub county. However, it does not pin much evidence in the area of study, hence a gap that this study hope to fill.

NARO (2023) conducted a survey on the causes of food shortages in Uganda .It found that food availability is not a limiting factor in most regions of Uganda except in Karamoja, East Central and West Nile where production and productivity, frequent dry spells inadequate food and lack of extension services that affect production. Though food is largely available, food access and utilization are major limiting factors in three regions of the East, North East and Northern and minor limiting factors in other regions. This has been attributed to natural hazards, low level of incomes, poor storage, inadequate nutritional awareness, cultural food preferences, poor sanitary and food preparation practices and wastage of food during harvest periods due to festivities. Although this study made findings ,the gap is that it generalizes the causes of food shortages without necessarily pinning specific causes to Kyere sub county in general and the parishes of the sub county in particular .This remains agape in understanding what really causes food shortages in Serere district specifically Kyere sub-county , hence a need for the current study.

According to FAO (2023) Food insecurity is a significant challenge in Sub-Saharan Africa contributing to hunger, malnutrition and poverty. The insecurity is mainly due to the prevalence of food production and distribution systems that are vulnerable and sensitive to economic and climate-related shocks. In some other instances, food insecurity is associated with low education levels and low levels of access to information, health or other basic capabilities that constitute people's wellbeing. In Uganda, nearly half of households are currently food insecure. Consistent with many parts of East Africa, food patterns in Uganda (especially in the cattle corridor where this study was carried out) are often characterized by very low amounts of harvest per growing season, small quantities stored by households for consumption, short periods before depletion and a small number of meals taken by several households per day. Ironically, since agriculture is a main source of income, crop failure leaves the affected people unable to buy sufficient food for themselves, hence a vicious cycle of food insecurity. As such, incidences of poverty, famine and hunger, are ubiquitous in such areas.

Furthermore, food production in Uganda is sporadic because, as is the case in many countries in Sub-Saharan Africa where agriculture is primarily rain-fed, crop productivity is largely influenced by inter-annual patterns of rainfall amount and distribution .The significance of rainfall is especially marked in most farmlands in Uganda because they are arid or semi-arid and/or subject to climate variability. Erratic and highly variable rainfall affects farming practices, particularly planting. With the prevailing magnitude of variability and changes in climatic conditions, the effects are more devastating to agriculture–dependent livelihoods than ever before, and are projected to worsen (IPCC, 2020). The increasing climate variability (manifesting as frequent droughts, floods, and erratic unreliable rainfall) is further likely to exacerbate crop failure culminating in food and nutritional insecurity .Drought has been identified as the most challenging climate hazard and food security threat in Uganda through its negative impacts on agricultural production. Drought results in water stress, crop failure and reduced or no crop yield (Sabiti, 2020).

2.1.4 Whether people have sufficient meals in their daily lives

Drought is regarded as a leading cause of food insecurity affecting about 220 million people in sub-Saharan Africa. Drought early warning systems (DEWSs) have the potential to strengthen capacity of communities in managing and reducing drought effects through building preparedness and providing coping strategies. The Karamoja sub region is the only region with a functional DEWS in Uganda. Teso region equally experience food shortages. These sub regions suffer from effects of recurrent episodes of drought with negative impacts on food security. Despite having DEWS in place, the sub region remains the most food insecure in the country. This study determined the effect of DEWS on agro-pastoral household food security in the sub region. A study by (DEWSs) (2020) found that food insecurity was rampant in these areas and people living there did not have enough food to enable them get sustained. The level of food security and nutrition were measured using the household food insecurity access score and household dietary diversity score (HDDS), respectively. The findings indicated that people were in dire need of food.

According to Mafabi (2023) at least 10.9 million Ugandans are facing acute food insecurity with the country risking real disaster. The National Food Security Assessment Report for January June 2023, compiled by an Inter-ministerial team, said the number of food-insecure Ugandans may rise to 11.4 million by this month. The report indicated that the food insecurity that only afflicted 1.3 million people in November 2022, had ravaged 10.9 million people by January 2023, with at least 1.6 million Ugandans already suffering food crisis. The Prime Minister reported that Teso, Karamoja sub-region Kaabong, Nakapiripirit, Moroto, Napak, Amudat, Katakwi, and parts of Serere were facing acute food crisis and were depending on porridge or wild roots and leaves daily without access to a good meal The new report cited most food-insecure sub-regions as Teso, Karamoja, Bukedi, the cattle corridor, parts of Busoga, Lango, Acholi, West Nile and parts of central Buganda. The reports said the food insecurity across the country had also created food consumption gaps with falling dietary diversity and rising malnutrition rates affecting 0.58 million children in central region, 0.12million children in Karamoja, 0.2million children in Teso, 0.38 children in East Central and another 0.31 million children in South Central sub-regions.

A study by Current the Emergency Food Security Assessment (EFSA-2022) conducted in Teso region in July 2022 and revealed the state of food security dimensions – Teso region covering nine districts of Kaberamaido, Kepelebyong , Katakwi , Amuria, Bukedea, Kumi, Ngora, Serere and Soroti. Whereas availability was found to be a major limiting factor during the period of June to August 2022. Evidence from the recent EFSA indicates that close to 95% of households in the region have access to agricultural land and utilise it whenever supportive conditions prevail. During the second season of 2021, crop and livestock production was affected by drought conditions, lack of quality inputs (mainly, drought and pest/disease resistant seed) and increased pest and disease infestation. This low production deprived households of enough harvest from which they would get stock to last them through the pre-harvest period of 2022. Although the first season of 2022 was delayed by the delay in rainfall, estimates from the EFSA show that about 90% and 80% of the households, respectively did not have enough food to take the people through.

According to EFSA (2022) report, about 73% of the households in the Teso region suffer some form of hunger , with the most affected districts being Ngora (97%), Serere(98%), Kapelebyong

(91%) and Kaberamaido (81%). No district can be singled out to have been doing well according to the HHS, as the districts with the lowest proportion of households to have experienced food access problems .The delayed and unevenly distributed rains of 2022 reduced opportunities for typical agricultural casual labor, thus restricting poor households from earning incomes needed for food and thus exposing people to inadequate food supply. This mix of poor harvests, elevated food prices and low income therefore constrains most households from accessing food, yet they did not have any food stocks from own production of the previous season. As a result, the purchasing power of the poor and very poor remained significantly low pushing many of them into crisis and emergency levels of food insecurity as they became increasingly unable to meet their minimum food consumption needs.

2.1.5 The effects of food shortage on the livelihood of the people

Odongo,P(2020) Farmers desperate as floods destroy gardens in Serere district food security: a post-modern perspective. Serere district in Teso region in Eastern part of Uganda could face a major food crisis, as the ongoing heavy rains continue to ravage the sub counties that constitute the district's main food basket. The torrential rains, which began pounding the country in early March, have raised the water level on Lake Kyoga, resulting in floods that have displaced thousands of households and destroyed acres of farmlands in Serere district. The current situation has created panic among the district leaders on how to deal with the resulting crisis. the floods caused by rising water levels in Lake Kyoga have affected more than 10,000 individuals in six sub counties near the lake, including Kateta, Pingire, Atira, Labori, Kagwara and Kadungulu. The affected sub-counties are the most productive in Serere and constitute the district's food basket.This would intern affect other areas lke Kyere sub county ,Atira sub county , which all have been relying on food supplies from these areas In Pingire Sub County alone, about 6,000 gardens have been affected, leaving more than 3,000 residents on the verge of starvation.Several were forced to seek shelter with friends in the uplands, while others have resorted to eating mangoes to ward of the gnawing hunger. Many families are currently starving; people hardly eat two meals a day (Odongo, 2020).

A study by Epero,(2020) examined the agriculture practices, food security and nutritional status of children under in Kateta sub county where malnutrition is on the increase among children. The

methodology employed involved the use of structured questionnaires with both closed and open ended questions which were administered to respondents from sampled households. The anthropometric data for children under five was analyzed using the Epi- info 2019 version enabled the generation of Z scores standard deviations used to provide a direct assessment of malnutrition among the age group. Interviews were conducted with professionals in the fields of agriculture and health and helped to enrich the study especially on recommendations for action. The findings indicated that the average households land holding was low at 1-3 acres yet there is also underutilization and the contribution of production to food is equally low yet there is competition of use of food for consumption and income which is used for other needs; households' involvement in modern agriculture practices is low and traditional practices dominate in the sub- county; children at the age of 0-11 months are more affected by underweight while children at the age of 36- 47 months are more affected by stunting ; there is lack of joint planning between the agriculture and health personnel in order to improve nutritional status of children under five and education levels fairly are good and fairly good and provide a potential for improvement in agricultural practices hence food security and nutrition status. Conclusion and recommendations. In conclusion, poor agricultural practice have contributed to food insecurity in Kateta sub county and this has negative influence on the nutritional status of the under-fives. The study recommends thus; joint planning for agriculture by agriculture and health professionals so as to improve on diets, this is in agreement with the recommendation of the Global Food Policy Report (GFPR) (2011); promote adoption of good agricultural practices; village health teams should handle nutrition support services for children under five through education; improve agricultural extension services; support adequate planning on food utilization.

2.1.6 Communities coping with food shortages

The changing climate has negatively impacted food systems by affecting rainfall patterns and leading to drought, flooding, and higher temperatures which reduce food production. A study by FAO in Uganda (2020) examined the ability of communities to cope with food insecurity due to the changing climate in the Serere and Buyende districts, which are two different agro-ecological zones of Uganda. A questionnaire was administered to 806 households, a sample size which was determined using Yamane’s formula, with the snowball sampling method used to select the households. The questionnaire sought information, including that regarding the respondents’

resources, the effects of climate change on households, and the coping mechanisms employed to reduce the impact of climate change on food security. The data collected was coded and analyzed using the statistical package for the social sciences (SPSS). Agriculture was found to be the main source of income for 42.4% of male adults and 41.2% of female adults in Serere. In Buyende, 39.9% of males and 33.7% of females rely on selling animal, poultry, and food crops. Aggregate results further showed that 58.3% of females and 42.2% of the males from both districts had suffered from the impacts of climate change, and that the effects were more evident between March and May, when communities experienced crop failure. The study further found that the percentage of households who had three meals a day was reduced from 59.7% to 43.6%, while the number of households with no major meals a day increased from 1.3% to 1.6%. It was also found that 34.3% of households reported buying food during periods of crop failure or food scarcity. Moreover, despite reporting an understanding of several coping mechanisms, many households were limited in their ability to implement the coping mechanisms by their low incomes. This reinforced their reliance on affordable mechanisms, such as growing drought-resistant crops (32.7%), rearing drought-resistant livestock breeds (26.1%), and reducing the number of meals a day (14.5%), which are mechanisms that are insufficient for solving all the climate-related food insecurity challenges. All in all communities were coping by reducing on meals and growing drought-resistant crops. Much as the study covered the district of Serere and thus implicitly leading to such findings , it does not directly say much about Kyere sub-county and hence a need for further researcher ,to fill this gap.

Food insecurity is a region–wide problem in Sub-Saharan Africa, exacerbated by severe drought, with devastating impacts at the household level. However, farmers' coping strategies and their determinants remain under–documented. A study by Twongyirwe et al (2019) examined the relationships between perceptions of drought and food insecurity and corresponding household coping responses, compared livelihood characteristics of farmers that perceived food insecurity as a problem and those who did not, and investigated how household-level characteristics correspond to household coping strategies. A questionnaire was administered to 140 farmers in Isingiro district in South-west Uganda whose livelihood is predominantly dependent on crop production. The study employed binomial and multinomial logistic regression models to identify the determinants of the respondents' perceptions, how household characteristics correspond to

household perceptions of food insecurity, and factors that affect coping responses. Data revealed that 68.6% of the respondents perceived food insecurity as a problem in their household. Farmers were more likely to use the credit as a buffer against food insecurity.

With most of the population depending on agriculture for subsistence in Uganda , the immediate effect of drought is on food availability and accessibility, income, and livelihoods in general .The effects of drought on food availability and accessibility depend on levels of vulnerability and the capacity of the households and communities to respond . Drought coping strategies are likely to be more limited for resource-constrained people, for example, those whose livelihoods are heavily dependent on natural resources .Coping response varies depending on the prevailing ecological and socio-economic conditions: these may include local agro-ecology, levels of education, gender, income, availability of support systems and services.These and other capabilities play a key role in determining how individuals and communities are able to cope with the impacts of drought and maintain the functioning of their socio-economic systems .Attempts have been made to investigate the general primary effects of climate related hazards . However, there is a very limited number of studies that have focused attention on the direct relationship between drought and food security. Even where attempts have been made, they are too generalized to provide effective location specific drought adaptation response actions for agricultural productivity and food security (Ampaire et al., 2017). Effective planning and decision making for improved food availability and accessibility related to the effects of climate variability and change requires new, location and time–specific information. Moreover, such information is needed for lesson sharing across regional, national and international levels to facilitate learning processes that can lead to global context support and partnerships , yet these strategies may also be limiting .Therefore, understanding the relationship between drought and food availability and associated perceptions and responses is critical in managing food insecurity. It is with such information that plausible, context specific adaptation strategies in communities could be identified for the desired food security (Mukwaya, 2020).

According to Uganda – Current Acute Food Insecurity Situation (2022) 69% of the total population in the country is minimally food insecure (IPC Phase 1). This population's food security situation is stable and has access to a variety of adequate food both from household stocks and the market. These households still have food stocks from the second harvest that are

expected to last for the next 2-3 months and there is unlikely to be any food shortages for those that depend on market purchase. This proportion of the population have adequate income to purchase food from the markets. However, livestock production for this population is average due to declining pasture and water conditions as dry conditions persist. Where food shortages persist, the population can buy from neighboring communities or markets from far away or near.

According to Wanyama,J et al (2017) policy makers in sub-Saharan African (SSA) countries have identified irrigation as a key ingredient to boosting food security and income as well as a precursor for agricultural development. However, most SSA countries have hardly exploited their irrigation potential. Lessons learned from previous interventions and successes elsewhere from countries comparable to Uganda are drawn and future perspectives to guide effective irrigation planning and development are recommended. it is evident that there is no single blanket solution to constraints of irrigation development in SSA. All strategies should be implemented in a holistic manner dictated by specific local conditions. The key to successful adoption of irrigation lies in building the national irrigation capacity, improving access to reliable water for irrigation in proximity of the farms, streamlining extension services for farmers, addressing economic aspects of irrigation, and streamlining land tenure systems and management. It is recommended to operationalize government policy on irrigation by developing national guidelines on irrigated agriculture

2.1.7 Gaps in the Literature

Food shortage is a complex and multifaceted issue that affects millions of people worldwide. While there has been significant research conducted on the topic, there are still gaps in the literature that need to be addressed. One gap in the literature is the lack of research on the impact of food insecurity on mental health. While there have been studies that have explored the relationship between food shortage and mental health, there is still much to be learned about how food shortage affects individuals' psychological well-being (Tarasuk et al., 2019). Additionally, there is a need for research that examines the impact of food insecurity on specific populations, such as children or seniors. Another gap in the literature is the limited research on the effectiveness of interventions aimed at reducing food shortage. While there have been various interventions implemented to address food insecurity, such as food banks or community gardens, there is a lack of rigorous evaluation of these programs (Gundersen & Ziliak, 2014). Further

research is needed to determine which interventions are most effective and how they can be scaled up to reach more individuals. There is limited research on the effectiveness of interventions to address food shortage: While there are many interventions aimed at addressing food shortage, such as food banks and SNAP programs, there is limited research on their effectiveness in reducing food shortage in the long term (Berkowitz et al., 2017). There is limited research on the impact of climate change on food shortage: Climate change poses a significant threat to global food shortage by affecting crop yields and increasing the frequency and intensity of extreme weather events. However, there is limited research on how climate change specifically impacts food security (Watts et al., 2019).

Finally, there is a need for more research on the root causes of food shortage. While poverty is often cited as a major cause of food shortage, there are other factors at play, such as unemployment or underemployment (Loopstra & Tarasuk, 2013). Understanding these underlying causes can help inform policies and programs aimed at addressing food insecurity.

3.0 CHAPTER THREE: MATERIALS AND METHODOLOGY

3.1 Introduction

This chapter discusses the methodology that was used. It highlights how data was collected and analyzed. This chapter also describes in detail the overall research design adopted by the study, population, sample design, sampling techniques, data collection, interviews, observation.

3.1.1 Research Design

Cross sectional descriptive survey design was used to undertake the study in investigating household food shortage and coping strategies among small scale farmers in Kyere sub-county Serere district. Descriptive research aimed to accurately and systematically describe a population, situation or phenomenon by .answering questions like what, where, when and how. A descriptive research design can use a wide variety of research methods to investigate one or more variables (Shona ,2023). In this study, this survey was used to investigate and cause the understanding of the status of food shortage and measures which the communities are coping with food to reduce food shortages in Kyere Sub-County in Serere District, Eastern Uganda with a view to understand the control measures Qualitative and Quantitative research approaches will be triangulated. Both qualitative and quantitative research approaches were used. The Qualitative approach was hoped to enable the researcher to acquire in depth knowledge and analysis of the problem of under investigation , while the Quantitative approach was useful for generating frequencies, percentages and summary tables that was used to present the data numerically. Triangulation was used for accuracy and reduction of the inherent biases that may accrued if only one approach is relied upon (Amin, 2005).

3.1.2 Study Area

Serere District is located in Eastern Uganda. Formerly, it was part of Soroti District. Physically the District lies approximately between latitudes 1° 33’ and 2° 23’ north and 30° 01’ and 34° 18’ degrees east, and is over 2500 feet above sea level. The Serere district profile ranks endemic hazards in eleven classes: floods, land conflict, extended drought and famine, crop and animal disease, pest infestation, heavy storms, hailstorms, lightning, environmental degradation, vermin,

bush fire, (United Nations Development Programme, 2014). These are all attributed to food shortages in the area. This districts will represent Teso agro-ecological zone to ease my sampling, The study was conducted in Kyere sub-county. Kyere sub-county has six parishes these are;Kamurojo, Kangodo, Kelim, Kyere, Olupe and OMagoro. The study was carried out in kelim parish which was purposively chosen because it is always the most hard hit with food shortages.

3.1.3 Population of study

The population of study comprised of local residents and farmers of Kyere sub-county who were drawn from six parishes of Kamurojo, Kangodo, Kelim, Kyere, Olupe and OMagoro. The population of Kyere sub county is 60300, with the breakdown of; Kamurojo,11300, Kangodo 12.560, Kelim-8700, Kyere-9012, Olupe -10416and OMagoro-7222 (UNBS-2022)

3.1.4 Sample Size

A sample is a smaller set of a population that a researcher chooses or selects from a larger population for a study (Jeovany, 2021). According to Krejcie and Morgan (1970) the appropriate sample for a population of 60300 is 381.Therefore, a sample size of 381 respondents was drawn from the six parishes. Given that the a appropriate sample is 381, the researcher will purposeful select 63 respondents from each parish .They were carefully chosen basing on how informed they are about weather patterns ,experience about the place and information on issues related to agriculture and food in the area under study .

3.1.5 Sampling

Sampling is a process in statistical analysis where researchers take a predetermined number of observations from a larger population. Sampling allows researchers to conduct studies about a large group by using a small portion of the population. The method of sampling depends on the type of analysis being performed, but it may include simple random sampling or sampling. In this study, the researcher used convenience sampling (Alicia & Mansa, 2023).

3.1.5.1 Convenience Sampling

According to Market Research (2022) Convenience sampling method depends on the ease of access to subjects such as surveying customers at a mall or passers-by on a busy street. It is usually termed as convenience sampling because of the researcher’s ease of carrying it out and

getting in touch with the subjects. Researchers have nearly no authority to select the sample elements, and it's purely done based on proximity and not representativeness. It is a non-probability sampling method used when there are time and cost limitations in collecting feedback. In situations with resource limitations, such as the initial stages of research, convenience sampling is used. In this study this sampling procedure was appropriate because of dealing with the unpredictable nature of respondents especially in respecting appointments .Therefore the researcher used those respondents who were conveniently be accessed.

3.1.6 Data collection instruments

Data was collected through using questionnaires. A questionnaire is a research instrument that consists of a set of questions for the purpose of gathering information from respondents through survey or statistical study. A research questionnaire is typically a mix of close-ended questions and open-ended questions (Tegan, 2023).This study used a closed ended questionnaire for gathering information because it was quick to administer and as well analyze. The group is chosen due to predefined demographic traits, and the questions were designed to shed light on a topic of interest (Tegan, 2023).

3.1.7 Data Analysis

Data was collected using the questionaires. The researcher used responses from questionnaires for analysis. Data was coded basing on each response and the special codes entered in to the computer system using the SPSS for analysis in order to obtain percentage responses from frequency counts. Other responses from data regarding the variables under study were presented qualitatively using tables which were drawn to present the responses for interpretation.

4.0 CHAPTER FOUR: DATA PRESENTATION, ANALYSIS, INTERPRETATION AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter presents the data that was collected, analyzed and interpreted. It is divided into two sections. The first section is the background information about the respondents, the second section presents the findings on the factors responsible for food shortages in Kyere Sub-County Serere District. The second section investigated whether people in Kyere Sub-County Serere District have sufficient meals in their daily lives. The third section examined the effects of food shortage on the livelihood of the people in Kyere Sub-County Serere District and the fourth section investigated how communities are coping with food shortages in Kyere Sub-County in Serere District. The details are here below:

4.1.1 Bio Data of the Respondent

The study solicited the Bio data of respondents from the parameters of Age, Sex, Educational background bearing of respondents and their marital status. The details are given below;

4.1.1.1 Gender of Respondents.

The gender of respondents is summarized as presented in the table 4.1 below.

Table 4.1: Sex of the respondents

Response	Frequency	Percentage
Male	285	75
Female	95	25
Total	380	**100**

Source: Primary Data 2023

In the table, the study used a sample of 380 respondents and the distribution by gender was as follows, 75% of the respondents were male and 25% were females. This implies that majority of the respondents were males and the minority were females. This meant that the male participants overwhelmed the female.

4.1.1.2. Age of Respondents

The study used respondents from varying age groups. In the table below the distribution was as follows;

Table 4.2: Age distribution of respondents.

Response	Frequency	Percentage
20-30	131	52
31-40	128	34
41- Plus	121	14
Total	**380**	**100**

Source: Primary Data 2023

In the above table, 52% of the respondents were between 20-30, 34% of the respondents were between 31-40, 14% of the respondents were 40 years and above . This implies that the majority of the respondents with 52% were between 20-30 and it is evident that as farmers aged the number engaged in farming and other agricultural practices reduced.

4.1.1.3 Marital status of Respondents.

Similarly respondents were categorized as married or not married. The table below gives the details.

Table 4.3: Marital Status of the respondents

Response	Frequency	Percentage
Single	78	21
Married	302	79
Total	**380**	**100**

Source: Primary Data 2023

In the table 4.3 above, 21% of the respondents were single and 79% were married. This implies that majority of the respondents were family men. This meant that there were more participants from the people who had families and thus were aware of family- food challenges.

4.1.1.4 Educational Status of Respondents

In order to understand the educational status of the respondents, they were put in three categories, primary school level, and secondary level and above secondary school (Diploma level and bachelor level). The distribution is indicated in table 4.4 below.

Table 4.4: Education level of the respondents.

Response	Frequency	Percentage
Primary school	168	44
Secondary school	113	30
Above secondary school	99	26
Total	**380**	**100**

Source: Primary Data 2023

In the above table, 44% of the respondents were of primary school background, 30 % of the respondents were of secondary school background and 26 % of the respondents were above secondary school level, thus implying that they had diplomas and degrees but participated in farming .This implies that 74% of the respondents were typically farmers. It was noted that the majority of the respondents were from the primary and secondary level and could have primarily embraced farming for livelihood and thus, had a lot of information about farming generally. The Educational Status of respondents revealed that all the respondents were in position to understand the variables under the study and give appropriate responses.

4.1.2 The factors responsible for food shortages in Kyere Sub-County Serere District.

Below are the views got from the respondents in relation to their views in responding to the first objective of the inquiry of this study .The objective was to investigate the factors responsible for food shortages in Kyere Sub-County Serere District.

Respondents were asked in order to find their opinion on whether there is food shortages in Kyere Sub County or not. The respondents given are summarized in the table 4.5 below.

Table 4.5: Opinion on food shortages in Kyere Sub County

Response	Frequency	Percentage
Strongly Agree	220	58.0
Agree	121	32.0
Strongly Disagree	07	2.0
Disagree	32	8.0
Total	**380**	**100**

Source: Primary Data 2023

In the above table, 90% of the respondents agreed that there is food shortages in Kyere Sub County because the people did not harvest what was enough to keep them going and so were faced with the constant strain of famine and hunger. However, 10% disagreed on the tends of food shortages in homes and families in Kyere Sub County .This revealed that while a majority were suffering because of food shortages, there were some very few families that chanced to cultivate their farms and still have what was enough, such families could be associated with few family members or were located near swampy areas where they could still continue farming even during dry seasons. The findings agree with the view of Famine Early Warning Systems Network (FEWS NET)(2022) that posited that seasonal changes due to climate change remained one of the biggest challenges facing Uganda today and Kyere Sub county as well because increasing temperatures, drought, erratic rainfall, and floods adversely affect farmers' yields. In most parts of northern and eastern Uganda such as Serere district, it forced farmers to replant when poor conditions at the start of the season failed early planted crops. This meant that it led to crop damage and reduced crop yields and hence causing food shortages in the area.

The study found that Drought is a factor in food shortage in Kyere Sub County This view was at because of the details indicated in table 4.6 which showed that a majority of the respondents felt so.

Table 4.6: Views on drought as a factor.

Response	Frequency	Percentage
Strongly Agree	380	100.0
Agree	-	0.0
Strongly Disagree	-	0.0
Disagree	-	0.0
Total	**380**	**100**

Source: Primary Data 2023

In the above table, 100% of the respondents agreed that the major cause of food shortages in Kyere Sub County was persistent drought and absence of rain in Kyere Sub County .This had burnt all the crops planted by the farmers and made yield not to be good or if not very poor and disappointing .At the end of it affected the people in form of persistent famine where homes

were virtually left without food. As found by the study in the context Kyere Sub County, the findings reflect the views of FEWS NET (2022) that highlighted that the greater north and the Teso sub-region were hit most with bad outcomes of prevailing hot weather through the start of the second season harvest, usually in periods of November/December. The worst-affected households were experiencing below-average production and such households were exposed food shortages.

The study found that Unpredictable weather patterns were responsible for food shortages in Kyere Sub County. The details are indicated in 4.7 which showed that a majority of respondents felt so.

Table 4.7: Unpredictable weather patterns as a cause for food shortages

Response	Frequency	Percentage
Strongly Agree	295	78.0
Agree	60	16.0
Strongly Disagree	15	4.0
Disagree	10	2.0
Total	**380**	**100**

Source: Primary Data 2023

In the above table, 4% of the respondents agreed that unpredictable weather patterns were responsible for food shortages in Kyere Sub County. This was reported 94% of the respondents. However, 6% said the contrary by disagreeing .The results above showed that one of the serious causes of shortages in Kyere Sub county area was linked to unpredictable weather patterns. The findings agree with the views of IPCC (2020) that posited that erratic and highly variable rainfall affects farming practices, particularly planting, changes in climatic conditions, the effects are more devastating to agriculture–dependent livelihoods .Thus the increasing climate variability in terms of frequent droughts, floods, and erratic unreliable rainfall , exacerbated crop failure hence culminating in to food and nutritional insecurity.

The study also noted that the Poor timing of seasons is the causes of famine and food shortages. The details on such views from respondents are recorded in table below;

Table 4.8: Views on poor timing of seasons as the causes of famine

Response	Frequency	Percentage

Strongly Agree	137	36.0
Agree	91	24.0
Strongly Disagree	81	21.0
Disagree	71	19.0
Total	**380**	**100**

Source: Primary Data 2023

In the above table as a cause of famine, 60% of the respondents agreed that poor timing of seasons as the causes of famine while 40% of the respondents disagreed. From this findings, it showed that while famine was caused by poor timing of seasons, there were some people who either timed rightly or accidentally planted and got good harvests while it was a major cause, it did not affect every body, for some people still managed to have some food. The findings agree with the views of FAO (2023) that posited that food insecurity was a significant challenge in Sub-Saharan Africa contributing to hunger, malnutrition and poverty because of mainly due to the prevalence of food production and distribution systems that are vulnerable and sensitive to climate-related shocks. In some other instances, food insecurity is associated with short periods rain before depletion and a small number of meals taken by several households per day. Besides that was erratic and highly unreliable rainfall with the prevailing magnitude of variability and changes in climatic conditions, and drought resulting into water stress, crop failure and reduced or no crop yield (Sabiti, 2020).

The study found that pests and diseases is are the major cause of food shortages in Kyere Sub County. The table below summarizes the details obtained from the respondents.

Table 4.9: The major cause of food shortages in Kyere Sub County.

Response	**Frequency**	**Percentage**
Strongly Agree	99	26.0
Agree	78	21.0
Strongly Disagree	106	28.0
Disagree	97	25.0
Total	**380**	**100**

Source: Primary Data 2023

In the above table, 47% of the respondents agreed that pests and diseases is are the major cause of food shortages in Kyere Sub County, 53% disagreed over such a view. The findings showed that while some people were affected by pests and disease which reduced food yields, others were not .Besides that there could have been other factors other than pest and disease; such as inadequate rain, poor soils and miscalculation of rain patterns , the reason they disagreed .The finding agree with NARO (2023) that conducted a survey on the causes of food shortages in Uganda .It found that food shortages were caused by frequent dry spells and lack of extension services that affect production. Though food is largely available, food access and utilization were major limiting factors in three regions of the East, North East and Northern. This has been attributed to natural hazards, low level of incomes, poor storage, inadequate nutritional awareness, cultural food preferences, poor sanitary and food preparation practices and wastage of food during harvest periods due to festivities. Thus, in relation to this literature pests and diseases alone cannot be taken as the major cause.

It was established that poor soils and infertility was not the only cause of food shortages in Kyere Sub County because of the existence of other factors as indicated in the respondents views in the table below;

Table 4.10: Views on a variety of factors causing food shortages in Kyere Sub County

Response	Frequency	Percentage
Strongly Agree	34	10.0
Agree	47	12.0
Strongly Disagree	199	52.0
Disagree	100	26.0
Total	**380**	**100**

Source: Primary Data 2023

In the above table, 22% of the respondents agreed that poor soils and infertility was the cause of food shortages in Kyere Sub County .However, 78% did not agree so, citing other factors .Such factors could be unpredictable rain patterns, drought, poor storage and inadequate value-addition infrastructure in rural areas. Farmers lack modern drying and storage facilities for their products, and most rely on the sun to dry their produce, natural hazards, low levels of income, inadequate nutritional awareness, cultural food preferences, poor sanitary and food preparation practices and

wastage of food during harvest periods due to festivities. The findings agree with the views of FEWS NET (2022) , Food and Agriculture Organization (FAO) (2023) and NARO (2023) that raised a number of causes for food shortages in Uganda as not only being pests and diseases but a multiplicity characterized by long spells of drought ,food lost at the farm level, mainly because of poor storage , inadequate value-addition infrastructure in rural areas, food waste and losses ,poor harvests, natural hazards, low level of incomes, poor storage, inadequate nutritional awareness, cultural food preferences, poor sanitary and food preparation practices , wastage of food during harvest periods due to festivities , low education levels , low levels of access to information that constitute people's wellbeing and small quantities of food stored by households for consumption.

4.1.3 Whether people in Kyere Sub-County Serere District have daily sufficient meals

Below are the views got from the respondents in relation to their views in responding to the second objective of the inquiry of this study .The objective was to investigate whether people in Kyere Sub-County Serere District have daily sufficient meals. Respondents were asked to comment on the food they eat daily and suggest if it was enough or not. The study found the following responses as tabulated below;

Table 4.11: Views over daily sufficient meals

Response	Frequency	Percentage
Strongly Agree	69	18.0
Agree	60	16.0
Strongly Disagree	132	35.0
Disagree	118	36.0
Total	**380**	**100**

Source: Primary Data 2023

In the above table, 34% of the respondents agreed that they had daily sufficient meals and were able to survive .However, the majority, 66% said the contrary. implying that in Kyere Sub-County Serere District, a majority of the people did not really have enough to eat on daily basis. There was therefore an acute food shortage affecting a number of people .The finding agree with the views of (DEWSs) (2020) that found that food insecurity was rampant in the East and

Northern areas in Uganda where people living there did not have enough food to enable them get sustained. The findings indicated that people were in dire need of food

It was established that the food farmers planted and harvested did not give enough yields to take them across the year, till the next season except in very few families , implying that the food was insufficient in majority of the families as indicated in the table below;

Table 4.12: Inadequacy of food in Kyere

Response	Frequency	Percentage
Strongly Agree	14	4.0
Agree	17	5.0
Strongly Disagree	165	43.0
Disagree	184	48.0
Total	**380**	**100**

Source: Primary Data 2023

In the above table, 9% of the respondents agreed that the food that farmers planted and harvested gave enough yields to take them across the year. This was a very minimal percentage response which showed that some farmers were very keen to keep food till the following season. However these results were negligible compared to the majority response of 91% that said that the food planted and harvested overall did not give enough yields to take households across the year. The implication of this is that food was not enough and so persistent famine in Kyere Sub County. The findings agree with the views of Mafabi (2023) who argued that at least 10.9 million Ugandans were facing acute food insecurity with the country risking real disaster. The National Food Security Assessment Report for January June 2023, compiled by an Inter-ministerial team, said the number of food-insecure Ugandans would rise to 11.4 million by this month. The report indicated that the food insecurity that only afflicted 1.3 million people in November 2022, had ravaged 10.9 million people by January 2023, with at least 1.6 million Ugandans already suffering food crisis in Teso, Karamoja sub-region Kaabong, Nakapiripirit, Moroto, Napak, Amudat, Katakwi, and parts of Serere were facing acute food crisis and were depending on porridge or wild roots and leaves daily without access to a good meal.The report also cited areas of Bukedi, the cattle corridor, parts of Busoga, Lango, Acholi, West Nile and parts of central Buganda as additional areas.

The study found that the food that is currently available in families was not enough for families and children to survive and children were not well taken care of. This view was arrived at because of the details given below.

Table 4.13: Inadequacy of food for families and children

Response	Frequency	Percentage
Strongly Agree	-	0.0
Agree	-	0.0
Strongly Disagree	221	58.0
Disagree	159	42.0
Total	**380**	**100**

Source: Primary Data 2023

In the above table, all respondents, 100% disagreed on food that is currently available in families being enough for families and children to survive and stressed that children were not well taken care of The finding agree with EFSA (2022) report, that argued that about 73% of the households in the Teso region suffer some form of hunger, with the most affected districts being Ngora (97%), Serere (98%) Kapelebyong (91%) and Kaberamaido (81%). No district can be singled out to have been doing well according in as far as food availability is concerned because of the delayed and unevenly distributed rains pushing many farmers and people into crisis and emergency levels of food insecurity.

4.1.4 The effects of food shortage on the livelihood of the people

Below are the views got from the respondents in relation to their views in responding to the third objective of the inquiry of this study .The objective was to find out the effects of food shortage on the livelihood of the people. The study found the following responses as tabulated below;

Respondents indicated that food shortage caused starvation of the people of Kyere Sub county and they kept relying on one meal , irregular meals or no meals on daily basis **.**The summary of their views is given in the table 4.14 below .

Table 4.14: Views over the number of meals per day

Response	Frequency	Percentage
Strongly Agree	180	47.0

Agree	130	34.0
Strongly Disagree	40	11.0
Disagree	30	8.0
Total	**380**	**100**

Source: Primary Data 2023

From the findings in the above table, 81% of the respondents agreed that food shortage caused starvation of the people of Kyere Sub County and they kept relying on one meal, irregular meals on daily basis. That means that their plight was very serious .This showed that in times of food shortage the effect was very serious for the people of Kyere sub County .On the contrary, there were few families that were very prepared to manage the situation of food crisis and seemed to sail through, either because of good planning or blessings to have something to eat .Those amounted to what the respondents indicated by 19% , they seemed to manage through the difficult time. All in in food shortage had disastrous effects on the people of Kyere Sub County.

The finding agree with the views of Odongo (2020) who posited that the people of Eastern Uganda such as where Serere district is located were experiencing gnawing hunger and many families were starving and people hardly ate two meals a day.

Another effect of food shortage in Kyere Sub County as found by the study was that it caused malnutrition of children and emaciation of their parents. Below are the views got from the respondents in relation to such a perception as summarized in the table.

Table 4.15: Views on malnutrition as an effect

Response	**Frequency**	**Percentage**
Strongly Agree	169	44.0
Agree	180	47.0
Strongly Disagree	22	6.0
Disagree	9	3.0
Total	**380**	**100**

Source: Primary Data 2023

In the above table, the findings reveal that 91% of the respondents agreed that effect of food shortage in Kyere Sub County caused malnutrition to the children and emaciation of their

parents. From the responses, the effect was very adverse and indicated by the majority response .However, the minority response that disagreed was 9%. This was an indicator that while famine was adverse in the area, it did not affect everybody, some people still managed to meet food requirements that did not put them to levels of malnutrition and emaciation. It means that some families were prepared for such tough times. The findings agree with the recommendations of the Global Food Policy Report (2011) that argued that there ought to be joint planning for agriculture by Agriculture and Health professionals so as to improve on diets, promote adoption of good agricultural practices and village health teams should handle nutrition support services for children under five through education; improve agricultural extension services; support adequate planning on food utilization.

The study also found that food shortages causes fear and panic among people especially given that they were heading for tough times and yet they needed to survive as summarized below;.

Table 4.16: Views on food shortages causing fear and panic

Response	**Frequency**	**Percentage**
Strongly Agree	145	38.0
Agree	160	42.0
Strongly Disagree	40	11.0
Disagree	35	9.0
Total	**380**	**100**

Source: Primary Data 2023

As indicated in the above table, the findings show that 80% of the respondents agreed that food shortages causes fear and panic among people especially given that they were heading for tough times and yet they needed to survive. The fear of lacking what to eat was real among the people of Kyere Sub County .The fear of the unknown future and food guarantee was evident and so panic was normal among the people as the go through food shortage spell. On the contrary some people remained stable with less fear or nothing at all. Those few could have had food stores kept to manage the tough times or were families that had working children who could help in buying food for their parents and families as constituted by 20% response, as few as those were not in a situation of fear or panic during the food shortage period.The finding agree with the views of Odongo,P(2020) who argued that Serere district in Teso region in Eastern part of

Uganda could face a major food crisis, as the ongoing heavy rains continued to ravage the sub counties that constitute the district's main food basket.The situation had created panic among the district leaders on how to deal with the resulting crisis.

As an effect the study found that food shortage led to loss of self-esteem as some families were forced to seek shelter with friends, while others resorted to eating mangoes to survive. Below are the views got from the respondents in relation to their views on this variable.

Table 4.17: Views on food shortage and loss of self-esteem

Response	Frequency	Percentage
Strongly Agree	222	58.0
Agree	158	42.0
Strongly Disagree	-	0.0
Disagree	-	0.0
Total	**380**	**100**

Source: Primary Data 2023

In the above table, all respondents, 100 % agreed that food shortage led to loss of self-esteem as some families were forced to seek shelter with friends, while others resorted to eating mangoes to survive. It was just chance that the mangoes season was on and there were also families ready to help by taking on an extra burden of feeding neighbors .However in the Teso culture this was shame and loss of self-esteem. The finding agree with the views of Odongo (2020) who argued that Serere district in Teso region in Eastern part of Uganda faced a major food crisis and several were forced to seek shelter with friends in the uplands, while others resorted to eating mangoes to ward of the gnawing hunger.

4.1.5 How communities are coping with food shortages in Kyere Sub-County in Serere District

Below are the views got from the respondents in relation to their views in responding to the forth objective of the inquiry of this study on how communities are coping with food shortages in Kyere Sub-County in Serere District.

The study found the following responses as tabulated below on how communities are coping with food shortages .Respondents said that communities were standing up to the task of fighting

food shortages in Kyere sub county by buying extra food from markets from within and far away as showed in the table below;

Table 4.18: Views on strategy of buying extra food

Response	Frequency	Percentage
Strongly Agree	299	79.0
Agree	81	21.0
Strongly Disagree	-	0.0
Disagree	-	0.0
Total	**380**	**100**

Source: Primary Data 2023

The findings in the above table reveal that 79% of the respondents said that communities responded to the plight of food shortages in Kyere Sub County by buying extra food from markets from within and far away. That was the only feasible move since no respondent disagreed .They had to look beyond their village or area confines to explore other ways of getting food .The finding agree with the views of Uganda – Current Acute Food Insecurity Situation (2022)that posited that 69% of the total population in the country was minimally food insecure and were purchasing food from the markets and where food shortages persisted , the population could buy from neighboring communities or markets from far away or near.

In another instance, the study found that communities of Kyere Sub County coped by exploring strategies of food storage especially foods that can be dried and kept and growing drought resistant crops. The details are given in the table below;

Table 4.19: Views on foods that can be dried and kept and growing drought resistant crops

Response	Frequency	Percentage
Strongly Agree	380	100.0
Agree	-	0.0
Strongly Disagree	-	0.0
Disagree	-	0.0
Total	**380**	**100**

Source: Primary Data 2023

The findings in the above table reveal that all respondents 100%, said that communities responded to the plight of food shortages in Kyere sub county by exploring strategies of food storage especially foods that can be dried and kept and growing drought resistant crops .Such foods could resist drought and could be harvested to provide food later and hence cushioning the effects of starvation .The finding agree with the views of FAO in Uganda (2020) examined the ability of communities to cope with food insecurity due to the changing climate in the Serere and Buyende districts and established that relying on mechanisms, such as growing drought-resistant crops was a feasible way of sustaining food shortage spells.

The study also found t hat some communities irrigated crops during dry spells so that they could be harvested to provide food. Other people could not do that because they were far from water bodies and swampy areas. The details are given in the table below;

Table 4.20: Views on communities irrigating crops

Response	Frequency	Percentage
Strongly Agree	30	8.0
Agree	50	13.0
Strongly Disagree	300	79.0
Disagree	-	0.0
Total	**380**	**100**

Source: Primary Data 2023

The findings in the above table reveal that 21%, said that communities responded by irrigating the crops, but this was possible for people near water bodies and swamps and was not possible for everyone. This the reason why the majority 79% disagreed on such mechanisms. The finding agree with Wanyama (2017) who argued that policy makers in sub-Saharan African (SSA) countries have identified irrigation as a key ingredient to boosting food security and income as well as a precursor for agricultural development. However, most SSA countries have hardly exploited their irrigation potential.

The study found that in some instances the people of Kyere Sub County responded by rationing the available food for one meal a day through the difficult food shortage period until the period of plenty of harvest. The summary is indicated in the table below;

Table 4.21: Views on rationing the available food for meals

Response	Frequency	Percentage

Strongly Agree	288	76.0
Agree	92	24.0
Strongly Disagree	-	0.0
Disagree	-	0.0
Total	**380**	**100**

Source: Primary Data 2023

The findings in the above table reveal that all respondents, 100%, said that communities responded by rationing the available food for one meal a day through the difficult food shortage period until the period of plenty of harvest. The reason why the majority agreed on such mechanism was to enable them keep going to the next harvest. The finding agree with Mukwaya, (2020) who argued that understanding the relationship between drought and food availability and associated perceptions and responses were critical in managing food insecurity.

5.0 CHAPTER FIVE: SUMMARY OF THE FINDINGS, CONCLUSSIONS AND RECOMMENDATIONS, AREAS FOR FURTHER RESEARCH

5.1 Introduction

This chapter presents the conclusions and recommendations of the study. The conclusions and recommendations are based on the objectives of the study.

5.1.1 Summary of the findings

The key findings of the study include the following:

About the status of food shortage in the table 4.5, 90% of the respondents agreed that there is food shortages in Kyere Sub County because the people did not harvest what was enough to keep them going and so were faced with the constant strain of famine and hunge. However, 10% disagreed on the tends of food shortages in homes and families in Kyere Sub County .This revealed that while a majority were suffering because of food shortages , there were some very few families that chanced to cultivate their farms and still have what was enough , such families could be associated with few family members or were located near swampy areas where they could still continue farming even during dry seasons.

On the question of whether drought is the major cause of food shortage in the table 4.6, 100% of the respondents agreed that the major cause of food shortages in Kyere Sub County was persistent drought and absence of rain in Kyere Sub County .This had burnt all the crops planted by the farmers and made yield not to be good or if not very poor and disappointing .At the end of it affected the people in form of persistent famine where homes were virtually left without food.

Whether people in Kyere Sub-County Serere District have daily sufficient meals, In the table 4.11, 34% of the respondents agreed that they had daily sufficient meals and were able to survive .However, the majority, 66% said the contrary implying that in Kyere Sub-County Serere District, a majority of the people did not really have enough to eat on daily basis. Therefore an acute food shortage affecting a number of people.

How communities are coping with food shortages in Kyere Sub-County in Serere District, The findings in table 4.18 reveal that 79% of the respondents said that communities responded to the plight of food shortages in Kyere Sub County by buying extra food from markets from within and far away. That was the only feasible move since no respondent disagreed .They had to look beyond their village or area confines to explore other ways of getting food .The finding agree with the views of Uganda – Current Acute Food Insecurity Situation (2022)that posited that 69%

of the total population in the country was minimally food insecure and were purchasing food from the markets and where food shortages persisted, the population could buy from neighboring communities or markets from far away or near.

5.1.2 Conclusions

The study concludes that the causes of food shortages in Kyere Sub County are multi-faceted and there is drought as a factor in food shortage in Kyere Sub County and unpredictable weather patterns. Other factors are floods, and erratic unreliable rainfall, exacerbated crop failure hence culminating in to food and nutritional insecurity. In addition are factors like poor timing of seasons , pests, diseases and poor soils.

The study concludes that the people in Kyere Sub County do not have sufficient food on daily basis. Farmers planted and harvested what could not give enough yields to take them across the year. The food that is not enough for families and children to survive and children were not well taken care of.

The study concludes that the effect of food shortages are multi-faceted, ranging from County to malnutrition of children and emaciation of their parents, fear and panic among people especially given that they were heading for tough times and loss of self-esteem as some families were forced to seek shelter with friends, while others resorted to eating mangoes to survive.

The study concludes that the communities are coping with food shortages in Kyere Sub-County in Serere District by buying extra food from markets from within and far away, exploring strategies of food storage especially foods that can be dried and kept and growing drought resistant crops, irrigation of crops during dry spells and careful spending and planning of or on food by rationing the available food for one meal a day through the difficult food shortage period.

5.1.3 Recommendations

The study recommends that since the causes of food shortages are known to the community, there is need for them to identify mechanisms of mitigating such causes early enough, to avoid getting dipped into food shortages, especially the causes that are controllable by human nature such as pests and diseases, poor timing or poor soils by getting alternative fertile land and they

can mitigate the natural causes by being early prepared for them and discovering alternative remedies.

The study recommends that the people in Kyere Sub County should diversify alternative ways of getting enough food through buying from well-endowed, appealing for food aid from the Government and planting fast maturing crops or those that are drought resistant.

The study recommends that communities can think, plan and act early enough to reduce shocks of food shortages to counter malnutrition of children, emaciation of their parents, fear and panic among people because of food shortages

The study recommends that communities should continue using the current coping mechanisms of buying extra food from markets from within and far away, exploring strategies of food storage especially foods that can be dried and kept and growing drought resistant crops, irrigation of crops during dry spells and careful spending and planning of or on food by rationing the available food for one meal a day through the difficult food shortage period. However there is need for them to diversify the mechanisms.

5.1.4 Areas for further research

There is need to examine the causes of food shortages in Serere district because this study has been limited to Kyere Sub County.

There is need to investigate contribution of non government organizations towards the improvement of the food shortage conditions.

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APPENDICES

APPENDIX A : DATA COLLECTION TOOL (RESAERCH QUESTIONNAIRE)

Dear respondents

I Emiku David, a student of Busitema University in the faculty of science and Education pursuing Bachelors of Science Education

This questionnaire is purely set to facilitate a study on "**Status and Strategies to combat food shortage in Kyere Sub-County, Serere District, Eastern Uganda".**

Please take a few minutes of your precious time and answer them. Your responses will be used for academic purposes only and will be treated with utmost confidentiality.

I would like to know whether you are ready to participate in this exercise;

Ready…….……not ready……..

In this section, you are kindly requested to tick that alternative response that fits your opinion.

SECTION A: - DEMOGRAPHIC INFORMATION OF RESPONDENTS (Tick)

1) **Sex** Male ☐ Female ☐

2) **Age** 20-30 ☐ 30-40 ☐ 40-50 ☐ Other (Specify)……..

3) **Marital Status** ☐ Single ☐ Married

4) **Educational Qualification** ☐ Diploma ☐ Degree ☐ Masters Others (Specify) e.g None ……..

5) **Occupation** .Practicing Farmer …….Part Time Famer……Traditional Farmer……

SECTION B

B1: the factors responsible for food shortages in Kyere Sub-County Serere District.

S/	Questions	Response

N		SA	A	SD	D
(1)	There is food shortages in Kyere Sub County.				
(2)	Drought is a factor in food shortage in Kyere Sub County.				
(3)	Unpredictable weather patterns are responsible for food shortages in Kyere Sub County.				
(4)	Poor timing of seasons is the causes of famine and food shortages.				
(5)	Pests and diseases is are the major cause of food shortages in Kyere Sub County				
(6)	Poor soils and infertility is the cause of food shortages in Kyere Sub County				

B2: Whether people in Kyere Sub-County Serere District have daily sufficient meals

S/N	Questions	Response			
		SA	A	SD	D
1	The people in Kyere Sub County have enough food on daily basis.				
2	The food farmers plant and harvest gives enough yields to take people across the year, till the next season.				
3	The food that is currently available is enough for families and children to survive and children are well taken care of.				

B3: The effects of food shortage on the livelihood of the people in Kyere Sub-County Serere District

S/N	Questions	Response			
		SA	A	SD	D
1	Food shortage cause starvation of the people of Kyere Sub county relying on one meal , irregular meals or no meals on daily basis.				
2	Food shortage causes malnutrition of children and emaciation of their parents.				
3	Food shortages causes fear and panic among people.				
4	Food shortage leads to loss of self-esteem as some families are forced to seek shelter with friends, while others resort to eating mangoes to survive.				

B: How communities are coping with food shortages in Kyere Sub-County in Serere District.

S/N	Questions	Response			
1	Communities are standing up to the task of fighting food shortages in Kyere sub county by buying extra food from markets from within and far away .				
2	Communities are exploring strategies of food storage especially foods that can be dried and kept and growing drought resistant crops .				
3	Communities are irrigating crops during dry spells so that they can				

	harvest something in a long run.				
4	Communities ration the available food for one meal a day through the difficult food shortage period until the period of plenty of harvest.				

THANKS FOR YOUR PARTICIPATION

GOD BLESS YOU