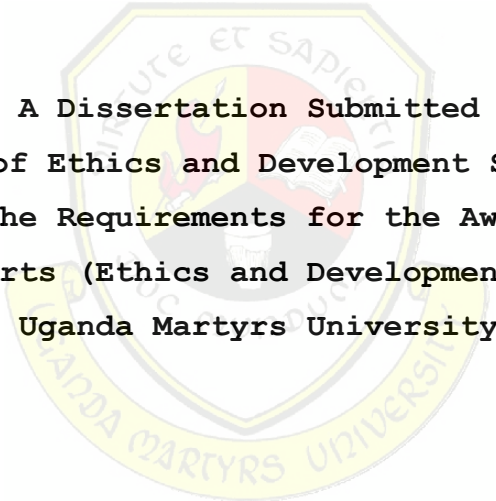


**ASSESSING THE FACTORS AFFECTING FOOD SECURITY IN ADROPI SUB-
COUNTY, ADJUMANI DISTRICT**

**A Dissertation Submitted
To the Institute of Ethics and Development Studies in Partial
Fulfillment of the Requirements for the Award of Degree of
Bachelor of Arts (Ethics and Development Studies) Of
Uganda Martyrs University**



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DEDICATION

With humility, I dedicate this report to Adjuman District local Government more especially the Sub-County Chief, Agriculture Officers of Adropi Sub-County for ensuring the success of this reaserch. I pray that this manuscript may add value to the work of Africulture officers, and Community development work.

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First and fore Most, I thank the High God for giving me life, care, wisdom, and resources that made it possible for me to under take this study to complétion. I thank my beloved parents, Otiku Flaminio, my mom Opia Bienika and my Brother Adiga Stéphane and my beloved wife Maia Florence for their Financial and social support provided to me without reservations.

In a spécial way, I thank my supervisor Dr. Tukundane Cuthbert for the dévotion hé has Shawn in guiding me through this study. The value of your technical guidance in conduct of this study is priceless. I pray that Almighty God continue blessing the Works of your hands as You continue building human ressource capacity in food Security.

I sincerely thank all the respondents who participated in this study. The farmers, Agricultural Officers, and the community leaders and friends like Olima Martine, Mawa Chales and Onen Julius

Finaly, I thank Ms Dipio Frances for her secretarial support especial, editing this Works. May the Almighty God bless all of You abundantly.

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List of Aabbreviations and Acronyms

CFSVA:	Comprehensive Food Security and vulnerability analysis
FAO:	Food and Agriculture
FCS:	Food Consumption Score
IFAD:	International Fund for Agricultural Development
IFPRI:	International Food Policy Research Institute IFPRI
NAADS:	National Agricultural Adversary Services
OPM:	Office of Prime Minister
UBOs:	Uganda Bureau of Statistics
UN:	United Nations
WFP:	World Food Program
WHO:	World Health Organization

Abstract

The food security status in Uganda remains a great concern, especially in northern Uganda. Northern Uganda is still suffering from food insecurity, with 59% of the population in the region being food insecure and 12% having a single meal a day. It is not clear why the situation remains like this in spite of many programmes put in place to address the food security situation. The purpose of this study was to assess the factors affecting food security in Adropi Sub-County, Adjumani District. The assessment was based on the pillars of food security developed by the World Food Programme (WFP), namely, food availability, food accessibility and food utilization.

The study was conducted using a case study design and was qualitative in nature. Simple random and purposive sampling methods were employed to obtain the sample for this study. The study used interviews, focus group discussion and observation to collection data. The data were then analyzed thematically following the objectives of the study and key themes that emerged from the data.

The study revealed that the main factors affecting food availability were population growth, climatic change, and lack of improved agricultural inputs, soil fertility and poor attitudes towards agricultural activities.

The research further revealed that food accessibility was affected by increase in food prices in the market, distance to the cheapest markets, high transportation cost and inadequate cash circulation within the community.

The study also indicated that food utilization is affected by limited food diversity, with cassava, maize, potatoes, ground nuts, vegetables and beans being the major foods crops. Households lack adequate energy for food preparation due to heavy depletion of forests for charcoal and poles for building grass thatched houses. Purchase of firewood and charcoal remains a challenge as well as limited safe water coverage associated with poor hygiene.

The study concludes that the issue of food security requires participation of all stakeholders in addressing the above factors affecting food security. The study makes the following recommendations: reviving black smiths to supplement agricultural implements, using granaries for storage, creating a farmers' union in the area to provide loans to farmers, improvement of extension service, and sensitization of the community on importance of agriculture and hygiene practices. There is also need to strengthen smallholder farming to move from subsistence farming to commercial farming which would help to address some of these problems affecting food availability, and cultivating drought resistant crops, and practicing irrigation farming.

CHAPTER ONE

GENERAL INTRODUCTION

1.1 Introduction

This study assessed the factors affecting food security in Adropi Sub-county, Adjumani district. Chapter one provides information on the background to the study, statement of the problem, purpose of the study, research objectives, research questions, and scope of the study, significance of the study, justification of the study and conceptual framework.

1.2 Background to the study

This section describes the context from which the research idea emerged. It presents coherently the historical, theoretical, conceptual and contextual background of the study

Agriculture is the backbone of Uganda's economy on which other sectors are dependent. This is because it employs the largest proportion, 65.6 percent in 2010, of the population aged 10 years and above (UBOS, 2010). In 2010/11, the sector accounted for 22.5 percent of total GDP. Agricultural exports accounted for 46 percent of total exports in 2010. Agricultural products contribute nearly all of Uganda's foreign exchange earnings, with coffee contributing the largest percentage of 19% of the country's exports. Exports of non-traditional products, including hides, skins, vanilla, vegetables, fruits, cut flowers, and fish are growing, while traditional exports such as cotton, tea, and tobacco continue to be mainstays.

Although the contribution of agriculture to the total Gross Domestic Product (GDP) has been declining over the years, the sector has continued to dominate the Ugandan economy. Further, about 85 percent of the population lives in the rural areas where they derive their livelihood from the agricultural

sector (UBOS, 2010, p. 40). Real growth in agricultural output has declined steadily, from 7.9 percent in 2000/01 to 0.7 percent in 2007/08 (although it did show signs of recovery in 2008/09, with a 2.6 percent growth rate). With 73 percent of all households and the majority of the poor in Uganda depending directly on agriculture for their primary livelihood, this is a serious challenge in the drive to eradicate poverty (DSIP, 2010). One can then argue that agriculture plays an important role in Uganda's economy.

Food security basically refers to a situation where all people in a given location have access to adequate food both in quantity and quality at all times. As contained in International food Policy and Research Institute (IFPRI, 1995) and Von Braun et al. (1995), food security is the access by all people at all times to the food required for a healthy life. Whereas Menghestab (2007) define food security as the condition in which a population has physical, social and economic access to sufficient, safe and nutritious food to support for an active life. The above definitions imply that at household level, a house is considered food-secure when it has access to enough food to ensure adequate dietary intake for all its members.

The Theory that underpins the study is "Malthusian Theory of Population" founded by Rev. Malthus Thomas (1766-1834). Thomas Malthus believed that the human population exhibits exponential growth, which is when the increase is proportional to the amount already present. With exponential growth the rate of increase becomes more rapid in proportion to the increasing total size.

Thomas Malthus found that food production did not increase at an exponential rate but instead increased more slowly. As a result of these differences in population and food growth rates, Malthus predicted that the human population would

eventually grow too large to be sufficiently supported by the food available.

As a result of the growing population and limited food, Thomas Malthus thought that the world would begin a downward spiral. Overall, he predicted that the uncontrolled population growth would lead to a depletion of resources, increased pollution, overcrowding, and increased unemployment. He thought these problems would then lead to larger problems, such as; starvation, increased diseases, crime, poverty, and eventually war. Malthus predicted that these unfortunate circumstances would be how the Earth would control the human population. He thought that these problems would lead to increased death rates and lower birth rates, which would help return the human population to a manageable size where there would be enough resources to support the entire population.

It has often been argued that future pressures on food production, combined with threats to other aspects of the earth's habitat such as global warming, make overpopulation a still more serious threat in the future.

He argued that increases in population would eventually diminish the ability of the world to feed itself and based this conclusion on the thesis that populations expand in such a way as to overtake the development of sufficient land for crops.

The concept of food security has evolved substantially since it was introduced into the development discourse in the 1970s. Devereux (1999) and Maxwell (2001) have argued that the most significant aspect of this empirically and theoretically driven advancement was the awareness that food security was no longer seen simply as failure of agriculture to produce sufficient food at the national level but instead a failure of

livelihoods to guarantee access to sufficient food at the household level.

Sub-Saharan Africa's agricultural production performance has been described as the world's foremost global food challenge according to the United Nations (1997) and it's still far behind the rest of Africa. Odulaja (1990) and Kiros (1996) have both argued that, Low food production and high population growth rates inevitably led to problem of per capita consumption hence causing hunger to people living in sub-Saharan Africa.

Food security exists when all people, at all times, have physical and economic access to enough safe and nutritious food to meet their dietary needs and food preferences for an active and healthy lifestyle (World Food Summit, 1996). To be food secure means that food is available, the amount and quality of food available globally, nationally and locally can be affected temporarily or for long periods by many factors including climate, disasters, war, civil unrest, population size and growth, agricultural practices, environment, social status and trade. Food is affordable when there is a shortage of food prices increase and while richer people will likely still be able to feed themselves, poorer people may have difficulty obtaining sufficient safe and nutritious food without assistance. Food is utilized at the household level, sufficient and varied food needs to be prepared safely so that people can grow and develop normally, meet their energy needs and avoid disease.

International Food Policy and Research Institute (IFPRI) and the Food and Agricultural Organization (FAO) suggest that the supply of food will need to rise by 70% by the year 2020 if the 6.5 billion people are to be food secure (Leisenger, 1996).

At national level, a country and population are food-secure when food production, availability and accessibility are met. Any condition or situation that causes a shortfall in food availability due to internal disturbance, natural disasters or form of social insecurity leads to a food insecurity situation. World-over, people have access to food through two basic mechanisms, namely, by producing or buying it.

Food security exists when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO, 2000).

There are both external and internal factors affecting farmers in Uganda, including Adjumani district, such as drought and flood which are well beyond the control of the farmers are part of the factors causing food insecurity while other external factors such as poor crop, animal, and fisheries farming technologies, and bad government policies could also be considered partisan in influencing food insecurity. Internal factors such as pests, soil infertility, land fragmentation, and population increase with subsequent rise in the demand for food although controllable but they also cause food insecurity (Wilson, 2001).

West Nile Region where Adjumani is located is composed of the following Districts: Adjumani, Arua, Koboko, Maracha, Moyo, Nebbi and Yumbe. The region shares borders with the Acholi region to the East, DRC to the West, South Sudan to the North and Bunyoro region to the South.

The main economic activities in the region are agriculture (crop farming and livestock keeping), fishing and trading in various commodities. The cross border trade with South Sudan and Democratic Republic of Congo is on the increase. The main staple crops cultivated are Cassava, Maize, Beans, ground nuts, sweet potatoes, rice and sorghum, among others. Cash

earning crops include tobacco, coffee, banana, Simsim, beans, cassava, ground nuts, sun flower, cotton, soya beans and Irish potatoes.

The region has a refugee influx from southern Sudan as result of a civil conflict that erupted in December 2013. By February 2014, 60,000 new refugees were located in reception centers and settlements in Adjumani District. This had a bearing on food security in the district, according to tracking report from UNHCR and OPM (2014).

1.3 Statement of the problem

Food security remains a challenge in northern Uganda. The Comprehensive Food Security and Vulnerability Analysis [CFSVA] (2013) shows that 59% population in northern Uganda are food insecure and 12% households survive on a single meal as compared to 6.3% at national level. As such, 17.5 million Ugandans in 3.1 million households were unable to meet the minimum caloric requirement (Ssewanyana, 2010). Because of above problems, government has introduced programmes such as NUSAF II, NAADS and international NGOS also came in which aimed at improving food security and ultimate economic empowerment. In spite of these programmes, food security remains elusive (Adjumani District Production Report, 2015). One wonders why after implementation of these programmes food security cannot be achieved. Therefore this study aimed at assessing factors affecting food security in Adropi Sub County.

1.4 Objective to the Sstudy

1.4.1. General Objective

The general objective of this study was to assess the factors affecting food security in Adropi Sub County.

1.4.2. Specific Objectives

- i. To identify factors affecting food availability in Adropi Sub County.
- ii. To assess factors affecting food accessibility in Adropi Sub County
- iii. To find out the factors affecting food utilization in Adropi sub county.

1.6 Research Questions

- i. What are the factors affecting food availability in Adropi Sub County?
- ii. What are the factors affecting food accessibility in Adropi Sub County?
- iii. What are the factors affecting food utilization in Adropi Sub county?

1.7 Scope of the Study

This section has put boundaries to the research in terms of the content scope, geographical scope, and time scope.

1.7.1 Conceptual scope

The study was limited to factors affecting food security in Adropi Sub-county in Adjumani district. The study aimed at investigating factors affecting food security and ways to

reduce food difficulties in the sub county and sought the views of affected communities on how to improve on food security among the population.

1.7.2 Geographical Scope

The study was conducted in Adropi Sub-county, Adjumani district. Adropi Sub-county was selected for its unique features such as piloting NAADS, potential area for agriculture, with stable security and easy access to farmers. The researcher was interested in investigating how the study can be helpful to optimize the livelihood of the population with sustainable food production/availability, adequate food utilization and accessibility.

1.7.3 Time Scope

The study, using a qualitative investigation approach examined factors affecting food security using information available for a period of 10 years (2006-2016). It is was anticipated that this period provides adequate and relevant current food security information through the suggested respondents and documentations that are easily obtained

1.8 Significance of the Study

This study would be relevant since it is expected to be beneficial to a number of stakeholders. These include the following categories:

The study was intended to be of benefit to the local community and leadership of Adropi sub-county, Adjumani District since its findings would help the local leadership to understand the better ways of addressing food security and increasing household incomes in the sub-county and perhaps at the district level.

To the study also shall provide additional information and options to the baseline surveys of the district to enable the district planning unit to propose development programmes intended to address food security challenges at both district and sub county levels. It would further inform farmers on the ways to reduce food insecurity and hence help in transforming agriculture productivity and value chain.

Furthermore, the policy and delivery system ought to be re-examined in order to foster quality services to the rural population to meet the desired developmental objectives. Therefore, the findings from the study would be used to improve on other programs like NAADS in Adjumani District.

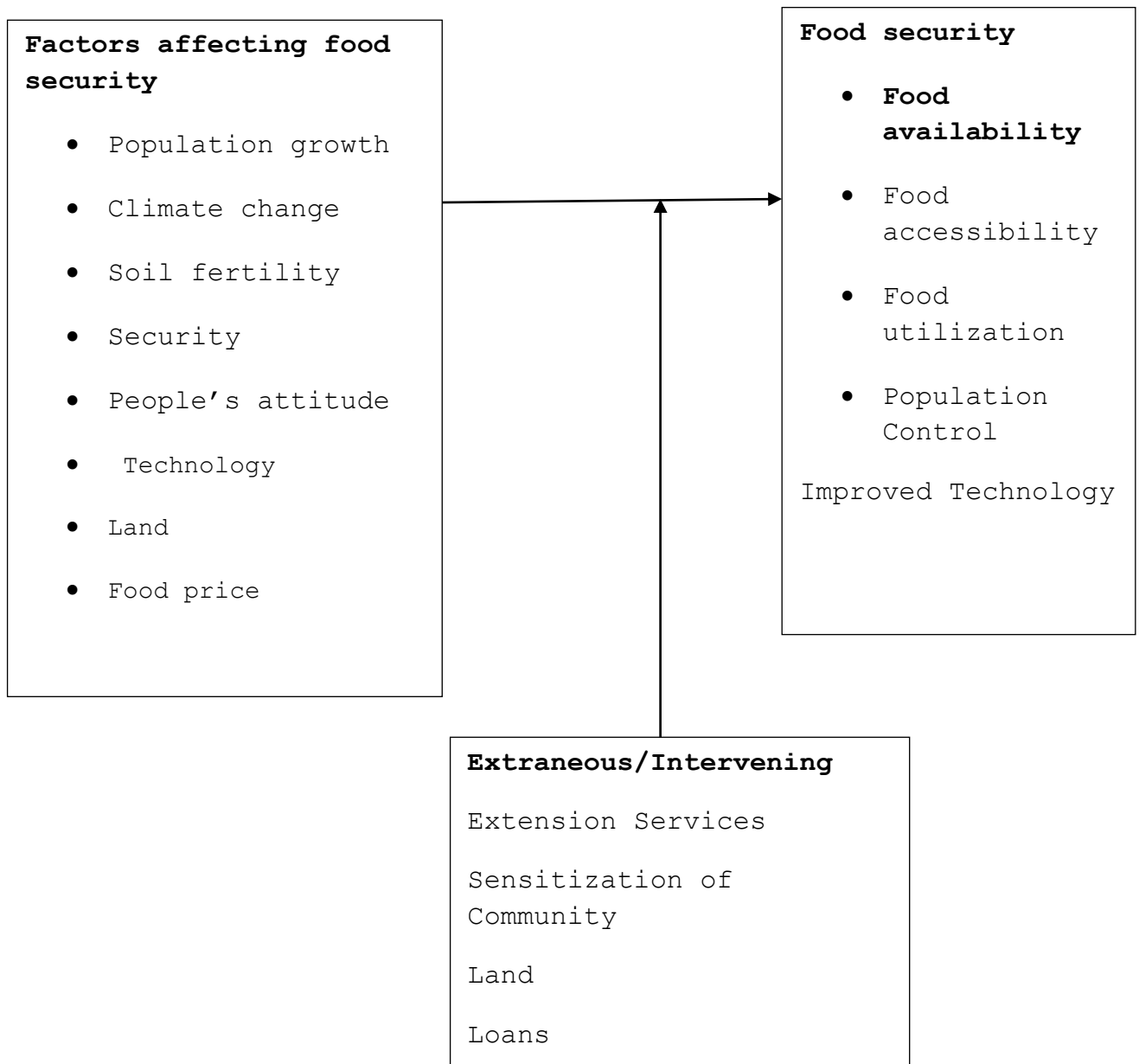
The study shall also provide literature which shall be used by future researchers.

1.9 Justification

Food security is an important sector simply because it employs almost 60% of rural population in Uganda, when the country is food secure, the country cuts off expenses which otherwise could have been used for medical expenses and food aid to respond on emergencies. Government earns revenue from farmers through sales of agricultural products both finished goods and raw materials and hence boosts the economy of the country. Therefore carrying out this study in Adropi Sub-County would help to support community and the findings would provide vital views to all stakeholders to make lasting decisions to address factors affecting food security in the study areas.

Figure 1: Conceptual Framework

The conceptual framework below demonstrates the relationships between the different variables of this study. These variables are conceptualized as consisting of the independent variable, the dependent variable and the extraneous/intervening variables.



Food security has been affected by several factors such as population growth, climatic change, soil fertility, security, people's attitude, agricultural technology, land shortage and food price. However for households to be food secure there

should be government programmes such as extension services, sensitization of community towards agricultural activities , availing land for cultivation and provision of loan scheme for farmers to acquire farm inputs to improve food availability ,access and food utilization.

1.10 Definition of Key Terms and Concepts

Food security exists when all people at all times have physical, social and economic access to sufficient, safe and nutritious food. Food security is built on four pillars: availability, access, utilization and stability. Food and nutrition security embraces meeting energy, protein and nutrient needs for healthy life (UN FAO/AGN, 2011)

Food availability: This is the extent to which adequate quantity and quality of food is physically present in an area for population to access and utilize it. This includes food produced from subsistence farms, national, food found in markets at regional level and food provided as food aid or gifts.

Food access: This refers to the physical and financial means through which households obtain food.

Food Utilization: This refers to the ability of individuals in a household to consume food as result of combining nutritional knowledge, skills such as preparation, storage and other conditions that relate to food security like safe drinking water and sanitation.

According to this study, household food security means, all members or Individuals who lives in the family have stable income to acquire money to ensure the family members are food secure and do not live in hunger or fear of starvation at all times.

Food insecurity: for the purpose of this study refers to a situation of limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.

Poverty: Poverty has many dimensions and many definitions. However, for the purpose of this study, poverty was defined as the lack of means to satisfy basic social needs as well as a feeling of powerlessness and insecurity of person and property (Todaro, 2000).

Agricultural Advisory Services: Services offered to farmers usually by the government in the form of transmitting information, new ideas, methods and advice about, for instance, the use of fertilizers, control of pests and weeds, appropriate technology, soil conservation methods, simple accounting etc. in a bid to stimulate high farm yields (Anderson, 2008).

Subsistence farming: Farming in which crop production, livestock rearing and other farm activities are characterized by low input, low productivity, risk and uncertainty (Todaro, 2000).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the available literatures about the related topics under study thus, enabling the researcher obtain understanding on the topic, get familiar with the work already done by other writers and also learn how ideas related to the topic have been researched, practical and developed. Also key issues close to the topic and the core criticisms were cited. The review of literatures was particularly focused on the food security concepts, general areas in line to the specific objectives of the study.

2.2 Food Security Concepts

According to world summit on food security, Rome, (16-18 November 2009) the definition of food security is based on three important pillars; food availability, food access and food utilization.

Food availability in a global, national, regional or local area means that food is physically present because it has been grown, manufactured, imported or transported there. For example: food is available because it can be found on markets, because it is produced on local farms, land or home gardens, or because it arrives as part of food aid, etc. This is food that is visible and in the area.

Food access is the way different people can obtain the available food. Through combination of home production, stocks, purchase, barter, gifts, borrowing or food aid. Food access is ensured when communities and households and all individuals within them have adequate resources, such as money, to obtain appropriate foods for a nutritious diet. Access depends on income available to the household, on the

distribution of income within the household and on the price of food. It also depends on market, social and institutional entitlement/rights to which individuals have access. Food access can be negatively influenced by physical insecurity such as conflict, loss of coping options, such as border closure preventing seasonal job migration, or the collapse of safety net institutions that once protected people with low incomes.

Food utilization focuses on the way people use food depends on the quality of the food, its preparation and storage method, nutritional knowledge, as well as on the health status of the individual consuming the food. Certain diseases do not allow maximum absorption of nutrients and growth requires increased intake of certain nutrients. Food utilization is often reduced by endemic disease, poor sanitation, lack of appropriate nutrition knowledge or culturally prescribed taboos that affect access to nutritious food by certain groups or family members according to age or gender. Any of the above mentioned factors can cause food insecurity. International Federation of Red Cross and Red Crescent Society assessment report 2006

2.3 Food Availability

According to United States Department of Agriculture [USDA] (2012), adequate and safe foods or uncertain ability to acquire acceptable foods is socially acceptable. Food security incorporates a measure of resilience to future disruption or unavailability of critical food supply due to various risk factors including droughts, shipping disruptions, fuel shortages, economic instability, and wars. In the years 2011-2013, an estimated 842 million people were suffering from chronic hunger. The Food and Agriculture Organization of the United Nations, or FAO, identified the four pillars of food security as availability, access, utilization, and stability. The United Nations (UN) recognized the Right to food in the

Declaration of Human Rights in 1948, and has since noted that it is vital for the enjoyment of all other rights.

According to Yeldah (2011), food insecurity occurs whenever a household or individual lacks predictable access to foods in sufficient quantity and quality to maintain an active and healthy lifestyle. The concept rests on three pillars: availability, access, and utilization which are further discussed in the text.

According to Kasirye (2010), there have been attempts in the past to examine the nature, extent, and impacts of food insecurity in Uganda. Examples of empirical studies in the recent and past include:

Simler et al. (2010), based on nationally representative surveys, focused on the potential impacts of rising global prices on the food security situation in Uganda. The author found that although the majority of households are net food buyers, they nevertheless consume a variety of staples majority of which are traded only locally. As such, because Uganda is not a net importer of food commodities, it is unlikely to be affected by the global rise in food prices.

On contrast, the 2009 comprehensive food security and vulnerability analysis for Uganda by WFP (2009) shows, more than half of all households in Uganda depended on the market in order to meet their food needs. In addition, May-August is the period of the year where most households report facing the worst food challenges whereas households in Karamoja are chronically food insecure for most parts of the year.

This is very low figure linked to indicator of food security used i.e. a household's food consumption score based on the nutritional density of major food groups of: staples, pulses, vegetables, fruits, meats, dairy products, sugar, and oil. Given that the indicator used does not capture food

quantities, at best it is a measure of food diversity rather than food availability or utilization.

Apart from the recent interest in food insecurity issues due to the 2009 food famine, there are other important reasons for undertaking an assessment of the food security situation in Uganda. First, in Uganda like other developing countries, nutritional adequacy has long lasting impacts especially on children's cognitive outcomes. For example, evidence from a randomized, Northern Uganda shows that school feeding programs significantly boost children's learning achievements. Adelman (2008) and Behrman (1993) have both shown the evidences from other developing countries on nutritional intake, also impacts on the labor productivity of poor households.

Second, the previous studies were unable to link information on household incomes and caloric intakes to other indicators of nutrition status such as stunting, wasting, and underweight status. Such a link is important to understand why nutritional indicators have stagnated, while income poverty has declined. This gap in the literature is mainly due to the paucity of data. Most of the indicators of children's nutritional status are from the regular DHS surveys which however do not capture household food utilization. On the other hand, the regular household surveys which are the main source of caloric information, rarely capture anthropometric information. It is only the United Humanitarian Services Report (UNHS) (1999/2000) which has captured both indicators of child nutritional status and income poverty. Apart from this particular survey, the 2005/06 is the other survey that can be linked to nationally representative anthropometric information from the demographic survey.

From the related literature review, food availability in Uganda situation has not been linked to household income poverty which holds more in-depth inquiry to this study.

The International Fund for Agricultural Development [IFAD] which collaborates to produce 'The State of Food Insecurity in the World', described improvements made by the FAO to the prevalence of undernourishment indicators was important in the measurement of the rates of food insecurity (IFAD, 2012). New features include revised minimum dietary energy requirements for individual countries, updates to the world population data, and estimates of food losses in retail distribution for each country. Measurements that factor into the indicator include dietary energy supply, food production, food prices, food expenditures, and volatility of the food system. The insecurity ranges from food secure situations to full-scale famine. Rates

World Health Organization [WHO] and world food summit (2009, p.3-10) states that there are three pillars that determine food security; "food availability, food access, and food use". The FAO adds a fourth pillar; the stability of the first three dimensions of food security over time. The World Summit on Food Security Report (2009) stated that the four pillars of food security are availability, access, utilization, and stability.

Food availability relates to the supply of food through production, distribution and exchange. Food production is determined by a variety of factors including land ownership and use, soil management, crop selection, breeding, and management, livestock breeding and management and harvesting. Crop production can be affected by changes in rainfall and temperatures. The use of land, water, and energy to grow food often competes with other uses, which can affect food production. Land used for agriculture can be used for urbanization or lost to desertification, salinization, and soil erosion due to unsustainable agricultural practices. Crop production is not required for a country to achieve food security. Nations don't have to have the natural resources

required to produce crops in order to achieve food security, as seen in the examples of Japan and Singapore

Because food consumers outnumber producers in every country, food must be distributed to different regions or nations. Food involves the storage, processing, transport, packaging, and marketing of food. Food-chain infrastructure and storage technologies on farms can also affect the amount of food wasted in the distribution process. Poor transport infrastructure can increase the price of supplying water and fertilizer as well as the price of moving food to national and global markets. Around the world, few individuals or households are continuously self-reliant for food. This creates the need for a bartering, exchange, or cash economy to acquire food. The exchange of food requires efficient trading systems and market institutions, which can have an impact on food security. Per capita world food supplies are more than adequate to provide food security to all, and thus food accessibility is a greater barrier to achieving food security

In ensuring food availability, Pretty et al. (2010), FAO (2009a; 2009b) and Godfrey et al, (2010) work with the 70% figure, others such as Tilman et al. (2011) have forecasted that a much higher increase in global crop supply will be needed, i.e. 100-110 per cent increase from 2005 to 2050. It is worthwhile to dwell on the origins of the rather quoted estimate of 70 per cent increase of food production. Tomlinson (2011) offers a critique by arguing that this 70 percent figure does not correspond to an increase in actual tonnes of production or yields but the aggregate volume produced within the crop and livestock sectors, which is calculated by multiplying the different quantities by the price of each commodity. In this estimation, fruit and vegetables are excluded and if the weight of the actual production was used, the figure would, for instance, be reduced by 6 per cent. Another fundamental issue is that the 70 per cent estimate

does not account for wasted food or matters related to unequal food distribution and access. Regarding food waste, it is estimated that the loss may rise to almost one third of harvested crops. The average current global edible crop harvest is said to be about 4600 kcal per person per day, but harvest and distribution losses along with post-consumer waste cause the loss of 1400 kcal (Smith, 2000 and Lundqvist et al, 2008).

Tomlinson (2011) argued that, if reductions on food waste could be effectively implemented, it is plausible to assume that the 70 per cent level estimations could be lowered.

Despite the limitations of this quite fragile figure, it cannot be ignored that feeding a growing population with limited resources and in a sustainable manner is undoubtedly a challenge and it is clearly justified to plan ahead and to be proactive in designing preventive measures. Yet, a balance must be sought since the focus on the estimation of future food requirements should not lessen the importance of addressing the particular challenges of the food vulnerable or the (semi-)subsistence / small-scale farmer located in low income areas. It is therefore necessary to establish a common starting point for an analysis based on institutional coherence, technology transfer and support aimed at achieving food security for low and high-income societies.

In sub-section 2.1, food (and nutrition) insecurity is assessed at the rural sector and farm level of low-income countries. The emphasis on the rural areas of developing countries is based on the fact that notwithstanding the changing demographic trends (increasing displacement to urban centers), nowadays the majority of the food-insecure and poor still belong to the rural economies and are highly dependent on farming. In sub-section, the food security challenges from a high-income society perspective are addressed.

Instability brought about by volatile food markets in recent years is discussed along with an examination of key drivers for future demand and supply. In addition, the less obvious aspect of over-nourishment is also briefly discussed.

2.4 Food Accessibility

This is critical and it is for this reason much research has focused on measuring the access component of food insecure. As more studies are conducted examining the relationship between new food insecurity measurement tools and nutritional status.

A study by Simler (2010) examines the short term impacts of the global food price hikes of 2008 on the welfare of households in Uganda. Based on simulations of the impact of the increase in prices of five commodities, namely, maize, matooke, cassava, sweet potatoes, and rice, the study finds that the incidence and depth of poverty increases by a modest 2.6 and 2.2 percentage points respectively. However, Northern Uganda suffers a worse fate with an increase in poverty of 5.9 percentage points. Despite the study novel simulation methods, it nevertheless has some limitations. As highlighted by the author, the simulations capture short-run impacts and do not consider the case where households substitute food products consumed in response to price changes. Second, the study only considers five food products. Although the five products considered are among the most traded food items in Uganda, their importance has a spatial dimension. For example, rice only features significantly in the food budgets of urban households. Finally, Simler does not consider issues of seasonality in food consumption. For example, some households are net sellers in periods immediately after the harvest and become net food buyers later in the agricultural season. This present study instead considers the consumption of all food

items regardless of importance in the food budget. It also examines seasonality in consumption of calories and proteins.

Using the three pillars of food security, the study has explored more on seasonal variations, household consumption pattern, household basic food pattern and their impacts on household food status.

According to Parvathamma (2015, pp. 3-6), food availability and variations relates to the supply of food through production, distribution, and exchange was determined by a variety of factors including land ownership and use; soil management; crop selection, breeding, and management; livestock breeding and management; and harvesting". Crop production can be impacted by changes in rainfall and temperatures. The use of land, water, and energy to grow food often competes with other uses, which could affect food production. Land used for agriculture could be used for urbanization or lost to desertification, salinization, and soil erosion due to unsustainable agricultural practices. Crop production is not required for a country to achieve food security. Nations don't have to have the natural resources required to produce crops in order to achieve food security, as seen in the examples of Japan and Singapore. Because food consumers outnumber producers in every country, food must be distributed to different regions or nations. Food distribution involves the storage, processing, transport, packaging, and marketing of food. Food-chain infrastructure and storage technologies on farms can also impact the amount of food wasted in the distribution process. Poor transport infrastructure can increase the price of supplying water and fertilizer as well as the price of moving food to national and global markets. Around the world, few individuals or households are continuously self-reliant for food. This creates the need for a bartering, exchange, or cash economy to acquire food. The exchange of food requires efficient trading

systems and market institutions, which can have an impact on food security. Per capita world food supplies are more than adequate to provide food security to all, and thus food accessibility is a greater barrier to achieving food security. According to United States Department of Agriculture (USDA), (2011-2013). Food security incorporates a measure of resilience to future disruption or unavailability of critical food supply due to various risk factors including droughts, shipping disruptions, fuel shortages, economic instability, and wars, an estimated 842 million people were suffering from chronic hunger.

The World Summit on Food Security (1996) declared that food should not be used as an instrument for political and economic pressure. According to the International Centre for Trade and Sustainable Development, failed agriculture market regulation and the lack of anti-dumping mechanisms cause much of the world's food scarcity and malnutrition.

Amartya Sen (2007) has observed that there is no such thing as a political food problem. While drought and other naturally occurring events may trigger famine conditions, it is government action or inaction that determines its severity, and often even whether or not a famine will occur. The 20th century is full of examples of government undermining the food security of their own nations sometimes intentionally.

2.5 Food Utilization

An assessment report on Food Security in Developing Economies and Policy Initiatives shows that, the pillars of food security represents how well individuals utilize the food that they can access Ver (2015, pp. 01-10). When this pillar is discussed or assessed in the food insecurity literature it has often been in reference to dietary quality and dietary choices: What food do people actually consume rarely, the

author explicitly linked one's ability to absorb the nutrients they are consuming but if one were only absorbing a fraction of their dietary intake then this would indicate reduced utilization, and thus food insecurity. In other words, if there is sufficient availability of food and one can access it but only utilize a portion then one would, by definition, be food insecure.

According to Kasirye (2000) and Hisali (2008), 6.3 percent of households have a poor diet; 21.3 percent have a borderline diet while 72.4 percent have an acceptable diet. Food production and consumption is heavily concentrated in Uganda. Furthermore, although most food is produced for own consumption, some food products are critical sources of household income. Despite a variety of staples, food production and consumption is dominated by a few staple notably matooke, sweet potatoes, cassava, maize and beans. The above crops account for 44 percent of the cultivated area in Uganda. At the same time, their importance in the diets of Ugandans is also large; the 5 staples account for 41 percent of the food budgets of Ugandan households. On the other hand, two staples—namely maize and matooke are also important sources of household incomes—the two products account for 36 percent of the total household earnings from crop sales.

In food utilization this studies, (WHO 2009 , Kasirye, 2000 and Hisali, 2008) have referred the metabolism of food by individuals, once food is obtained by a household, a variety of factors affect the quantity and quality of food that reaches members of the household. In order to achieve food security, the food ingested must be safe and must be enough to meet the physiological requirements of each individual Food safety affects food utilization, and can be affected by the preparation, processing, and cooking of food in the community and household. Nutritional values of the household determine food choice, and whether food meets cultural

preferences is important to utilization in terms of psychological and social well-being. Access to healthcare is another determinant of food utilization, since the health of individuals controls how the food is metabolized. For example, intestinal parasites can take nutrients from the body and decrease food utilization. Sanitation can also decrease the occurrence and spread of diseases that can affect food utilization. Education about nutrition and food preparation can affect food utilization and improve this pillar of food security.

According to International Food Policy Research Institute (IFPRI) (1995) Nutritional security focuses on food consumption by the household or the individual and on how that food is utilized by the body. The Nutrition security can be defined as adequate nutritional status in terms of protein, energy, vitamins, and minerals for all household members at all times. In 2006, the World Bank gave the following more elaborated definition of nutrition security. Nutrition security exists when food security is combined with a sanitary environment, adequate health services, and proper care and feeding practices to ensure a healthy life for all household members.

The Road Map for Scaling-Up Nutrition [SUN] (2010) elaborates on World Bank's definition as follows: Nutrition security is achieved when secure access to an appropriately nutritious diet is coupled with a sanitary environment, adequate health services and care, to ensure a healthy and active life for all household members. FAO has developed the following draft formulation in 2012. Nutrition security exists when all people at all times consume food of sufficient quantity and quality in terms of variety, diversity, nutrient content and safety to meet their dietary needs and food preferences for an active and healthy life, coupled with a sanitary environment, adequate health, education and care.

The term Food Security and Nutrition has been used as a way to combine the concepts of food security and good nutrition. It is most commonly used in recognition of the traditional emphasis on the food availability, access and stability dimensions of food security. In addition, it acknowledges the importance of key nutrition concerns for achieving food security. This terminology is also used to make it clear that food security is a precondition to adequate nutrition and that different but complementary actions are needed to achieve food security and nutrition. In other words, food security actions should ensure that food systems provide all households with stable access to sufficient, appropriate and safe food, while nutrition-oriented actions should ensure that households and individuals have the knowledge and supportive health and environmental conditions necessary to obtain adequate nutritional benefit from the food.

Food and Nutrition Security is another way to combine elements of both food security and nutrition security. It is a term that has been used more frequently during the past number of years to emphasize the need for greater integration of nutrition into food security policies and programmes. The embedding of "nutrition" between "food" and "security" emphasizes that raising levels of nutrition is the ultimate goal (Kasirye, 2000 and Hisali, 2008).

The International Food Policy Research Institute [IFPRI] (1995) has used the term Food and Nutrition Security since the mid-1990s, and UNICEF (2009) and FAO (2005) have both developed formulations for this term. Food and nutrition security is achieved when adequate food (quantity, quality, safety, socio-cultural acceptability) is available and accessible for and satisfactorily used and utilized by all individuals at all times to live a healthy and active life. Meanwhile, FAO/AGN (2011) states that Food and nutrition security exists when all people at all times have physical, social and economic access

to food of sufficient quantity and quality in terms of variety, diversity, nutrient content and safety to meet their dietary needs and food preferences for an active and healthy life, coupled with a sanitary environment, adequate health, education and care.

CHAPTER THREE
RESEARCH METHODOLOGY

3.0 Introduction

This chapter covers the research methodology. Methodology section in a study provides the ways of obtaining the answers to what a study seeks to establish. In other words, it provides the ways by which answers to research questions can be sought. This section describes the design, study area, scope of the study, population of the study, sample size and sampling techniques, data collection methods, data analysis, research ethics and limitation of the study.

3.1 Research Design

The research design adopted in this study was a case study research design. This was preferred because of its ability to offer intensive and in-depth inquiries of the phenomenon on study background (Kothari, 2004). The findings of the study can be understood as being descriptive rather than representative in other relevant settings. The researcher adopted a qualitative approach to data collection and analysis. This approach was preferred because of its ability to provide opportunities to the researcher to explore a detailed phenomenon to provide the actual context and discover the immeasurable indirect facts regarding the subject under study (Kothari, 2004).

3.2 Area of Study

The study was carried out in Adropi sub-county in Adjumani District which is about 390km North West of Kampala city. Adropi was chosen for this study because it was one the pioneer sub counties in the District to pilot NAADS program in the district. Adropi Sub County lies in the northern part of the District. It was made up of 5 parishes and a population of

11,942 people. The Sub County is mainly agro-based. About 70% of the population depends on smallholder agriculture. It was one of the highest productive areas in the District. Crops grown are mainly potatoes, cotton, and millet was widely grown on large scale. The rest of the areas grow cassava, maize and beans. Cattle rearing are carried out on small scale.

There were a number of upcoming trading centers with small retail shops, food kiosks and petty trading. Maize milling powered both by hydroelectricity and small diesel engines are common in most trading centers.

3.3 Study Population

Frankfort-Nachmias and Nachmias (2000) defines a study population as "complete set of relevant units of analysis, or data" in this study the study population consisted of selected farmers who participated and those who do not participate in NAADS program in Sub County, community leaders and local government officials like Agriculture officers in the Sub-County.

3.4 Sample Size and Sampling Techniques

Sample size is any subset of sampling units from a population (Frankfort-Nachmias and Nachmias, 2000). Kothari (2004) notes that, in choosing a sample size, attention must be paid to parameters such as finance, representativeness, the study population, while deciding the size of the sample. Thus the researcher used a total sample size of 50 respondents drawn from all the parishes of Adropi sub-county. 30 farmers's selected from all the 5 parishes, 18 community leaders and 2 Agriculture officers in the Sub County, the researcher selected the list of farmers who are currently participating in the NAADS program and those who did not participate in the NAADS programe.

Therefore, for the purposes of this study, the purposive sampling and simple random method was used for community leaders and farmers respectively, because the researcher was dealing with a homogenous population of farmers and key informants who were considered to be knowledgeable.

The simple random sampling technique provided the probability of selecting unit to the study that is the farmers, it helped to carefully determined the selected farmers to represent the study population, where each farmer had equal chances of being chosen to participate using lottery methods that involves, transferring each person's name writing them on the piece of paper, the piece of papers were placed in the containers, then mixed thoroughly. Thus, the required members were selected by someone, without looking at the papers. This has helped the researcher to come up with the list of the representative farmers. The Simple random sampling method helped to reduce cases of bias and ensuring a fair spatial distribution and representation of research respondents.

Purposive sampling was also used in the study to select the key informants who were the leaders. This is because the researcher new the relevant offices and it selected them based on the experience that they would bring to topic of this research.

3.5 Data Collection Methods and Instruments

Both primary and secondary data was collected using various data collection tools.

3.6 Interviews

Primary data was collected using interviews method using interview guides. The advantage of this method was that the researcher was able to acquire in-depth information and facial expression from the respondents which was very important in

qualitative research. Interviews also provided room for probing where the information provided was not clear to either the interviewer or interviewee.

3.7 Observation

This was another primary method of data collection where a "critical eye" was employed. An observation checklist was employed as a tool to guide the researcher. This method helped the researcher in describing phenomena (relating to practices of food security) as they occur in the natural settings of Adropi Sub County.

3.8 Documentary Analysis

The researcher consulted different relevant documents such as reports, guidelines and other policy documents with the view of finding important issues under study.

At the District level, data was collected from the offices of District production Office (DPO), District NAADS Coordinator (DNC). At the Sub County level, data was collected from the offices of the Sub County Agriculture Officers (AOs), Sub County NAADS Coordinator (SNC). This was in the form of reports, budgets/work plans, Sub county farmers' forum reports, parish coordination committee reports and contract agreements among others. Academic documents such as journals, books, achieves were conducted to obtain relevant data for this study.

3.9 Data Analysis

Thematic analysis of data was used during processing and analyzing data. It involved identifying the actually issues that persisted across data. The themes were prepared and open-handed views were collected. The researcher, first of all confirmed that the raw data was organized on the excel sheet. For essence of this, the researcher primarily made through

transcription and took notes on them, identified the themes, developed a coding scheme and then manually coded the data. Thereafter the analysis and interpretation of the data was carried out on the tables.

3.10 Ethical Considerations

The researcher observed confidentially, the respondents' views save for few cases where the respondents accepted his/her views to be published. The researcher didn't coerce, make promises or facilitate respondents to get data. Only respondents willing to participate in the research was interviewed. An informed consent was sought from respondents. The researcher obtained clearances from the University and Local government officials to access the field.

3.11 Limitations of the Study.

The researcher acknowledged the following challenges and limitations during data collection for this study:

Firstly, Poor attitudes towards the Agricultural activities, more especially the youths as most of them were engaged in the other activities like sales of sand, boda-boda riding and alcoholism has affected mobilization and high participation during data collection in some of the parishes.

Secondly, since the researcher spent long time in the field, as a result of busy schedules of the key respondents, to provide important data, which otherwise could have been left out during the process of data collection and also interpreting questions from English to local language was time consuming. This process has delayed timely dissertation submission.

Thirdly, this research was actually qualitative, therefore does not provide the quantitative aspect of the findings which

would otherwise be helpful to widen the understanding of this study topic.

Lastly, the cultural practices in the study areas has limited the participation of women during focus group discussion as some women fear to actively participate and also reveal some of the issues as it undermines the position of men who are on authority, therefore the essence of transparency has been compromised.

CHAPTER FOUR
PRESENTATION AND DISCUSSION OF FINDINGS

4.0 Introduction

This chapter presents and discusses the findings of this study. The objective of this field study was to assess the factors affecting food security in Adropi Sub County. In this regard, the respondents included farmers, who were drawn from all the 5 parishes of Adropi Sub-county. Other respondents were community leaders and Agriculture officers who work in Adropi Sub County, were also believed to have strong understanding on the topic under study. The findings were derived from the responses as obtained by use of in-depths interviews, focus group discussion and structured observation. The in-depth interviews and the focus group discussion were conducted in local language of the people in the area, which is madi. Meaning, the quotes shown in this chapter was the researcher's own translation from the respondent's words as spoken in local language. The findings that followed were presented in line with the set research objectives.

4.1 Demographic characteristics of respondents

Table 1: The Category of Respondents by Occupation.

Category	Frequency	Percentage (%)
Farmers	30	60%
Community Leaders	18	36%
Agriculture officers	2	4%
Total	50	100%

The category of respondents in the study population consists of farmers with the score rate of 60% of farmer's participation, followed by, community leaders with 36%. And

the Agriculture Officers presented a score of 4%. The higher percentage rate of famers was expected by the researcher simply because this was the actual target group for this study. In addition, community leaders and Agriculture officers were regarded as the key informants who provided important data on the factors affecting food security in Adropi Sub-County.

Respondents by gender

Table 2: Category of respondents by Gender

Sex	Frequency	Percentage
Males	15	30%
Females	35	70%
Total	50	100%

The table 2 above shows that more females participated in the study more than males represented by the percentage of 70% to 30%. This variation in the number of respondents implies that women are more engaged in agricultural activities than men. Men are mostly engaged in other activities such as sale of sand, brick laying, boda boda riding, idling in drinking alcohol and constructions.

4.2 Factors affecting Food Availability

This section deals with the factors affecting food availability in Adropi sub- County.

The Community leader stated that, the main source of food throughout in Adropi sub-county was own food production which is mainly from subsistence farming. The cereal food stocks usually lasts for three months is now over while other community leaders argued that a livestock products such as meat and milk are available. Livestock and its products are

sold for cash; However food storage is a challenge in the area simply because the same food caters to serve for other basic needs such as health, clothing, salt etc. when they are sold.

"If the rain did not interfere with cultivation, there would be sufficient food supplies next year, as many farmers have cultivated, the late rain and prolonged dry spell that has affected the area in the month of May has greatly affected the first harvest and even delayed planting at the same time, however an improved rainfall pattern from the month of May to date has resulted in considerable production in some parts of the region. Food is available to a limited extent, especially from own production, in some Districts like Gulu and Arua which supply Adjuman District". (Interview with a community leader on 4th July 2016 at Adropi)

Another respondent mentioned that, Crop farming and rearing of livestock, fishing and trading on various food items takes place. There is also cross border trade with South Sudan , Amuru, and Gulu Districts were on the increase. The main staple crops cultivated are Cassava, Maize, Beans, ground nuts, sweet potatoes, rice and sorghum, among others. Cash earning crops include banana, Simsim, beans, cassava, ground nuts, cotton, soya beans and. Other cash earners are mangoes, citrus.

"In the past, the sub-Sub county used to be very fertile land that supplies the whole community with food, farmers have been getting additional cash from cotton which used to cater for the purchase of basic needs, but now there is even no market for cotton much as we cultivate". (In-depth interview with a community leader on 9th June 2016 at Adropi.).

The respondents argued that food storage remains challenge as most of the farmer's practice subsistence farming, sale of food to acquire other basic needs like soap, salt clothing, and health and again becomes a net food buyer, so this has affected food preservation and storage. With exception of few granary in other parishes which do preserve food for use during crisis.

"We use to peel potatoes and dry it for preservation which can be eaten in months of April when there is no much food, this same dried potatoes (Mutere in local language) were even sold in market to acquire other items like salt".(In depth interview with a Community Leader on 9th June 2016 at Adropi).

One of respondent said that the minimum number of cattle's that a farmer can keep ranges from 2-5, and sometimes 20, combined in the same kraal for communal grazing and cattle are mainly local zebu and Ankole breeds kept for beef, however the introduction of the Ankole breeds has improved milk production and consumption in the area but not all farmers own them.

"You know we also have problem of pest and diseases such as cassava mosaic and livestock diseases like east coast fever, foot and mouth diseases in our areas, on other hand, other respondents mentioned that, restriction of livestock movement are also contributing factor to limited livestock marketing and low food productivity as well as milk yields in our area". (In-depth interview 5th July 2016).

"there was another issue of division of land among the members in the family due to increase in the number of grown up people in the families and using the same land for the same crops over years, other farmers with limited plots resorted renting plots of land to cultivate from the families with few people in families, in an attempt to improve food availability , but some respondents who have piece of land for cultivation said land fragmentation is not the only contributing factor , but, factors like soil infertility could be the cause". (In-depth interview conducted on 10th /June 2016).

During focus group discussion, a certain farmer noted that, the average piece of land that a farmer can own is only 2-3 acres in families, which cannot accommodate all the crops rotational farming, to maintain soil fertility has become quite problem. This has made farmers to cultivate the same piece of land for years and years. This has contributed to soil exhaustion and infertility. most of the families have migrated to other sub-Counties like Ukusijoni , and beyond Acholi and Madi border to cultivate, as a result of land shortage and soil infertility where, there is fair rain

pattern, abundant land and fertile soil that can support the crop yield better than where they are currently, the respondents argued that, there are also several other challenges experienced like distance to and from the field was mentioned as a limiting factor, clearing the forests with big logs, transporting the food during the harvest still remains a serious challenge as well as roads damage during rainy season. However the shifting of the farmers to other location has relatively boosted the food production in the areas they said.

"We usually join hand together to work and split the logs and also rotational cultivation to overcome some of the challenges like migrating to a productive land, rotational cultivation and selling the little we have we the most vulnerable households"(FGD conducted on 10th June 2016 at Adropi).

The respondents further said that, Adropi-Sub County has two rain seasons which supports crops production and livestock farming throughout the year. Its bimodal production calendar is such that March to June is first season and July to November is the second season. The first season rainfall is becoming shorter and more unreliable in the last 3-5 years from 2016. A respondent notes that most of the crops planted in the first season were completely burned by the strong sun heat. The second rain for the year 2015 to date always associated with floods which normally destroys the crops planted in the second season.

Respondents interviewed mentioned that unstable rain season was one of the major cause of inadequate food output as you can even observe, the weeding and planting of other crops have not yet been done, delaying time for other crops and it continues like this up to the month of July each year, these affects the right time for land preparation, planting, weeding of the food crops like cassava, groundnuts maize, and potatoes. In the past this place has been very productive and receives rain throughout the year with only one gap without rain which is June but the season has now drastically changed

observed by the farmers. However a farmer note that , most of the farmers have neglected irrigation farming which could have been one of options to boost food production.

"Normally, the households would have a green harvest by July and dries the harvested crops in August but the harvests have been delayed, may be in the month of November, and are expected to be below average affecting household stocks negatively. With lower than normal stocks, households are expected to face early famine before the beginning of next season for the second year. A respondent note that, food security prospects in our sub-county is therefore, expected to get worse in the months to come if the current rain continue. It's likely to cause flooding of farmland, reduce yields, and enhance postharvest losses, as well as rotting of simsim (FGD interview on 5th July 2016 at Adropi").

The community leaders noted that, poor farm tools was also another contributing factor, due the fact that, farmers use poor hand hoes and poor seeds varieties, NAADS inputs and other supplies like cassava stock was distributed, but the season for the distribution was not the right one for cassava like October was not a right time for planting cassava and groundnuts in Adropi sub-County, most crops planted in the first season dried up in the Sub-county. In addition to that a farmer also mentioned that , it's not only lack of farm inputs but rather neglect of traditional method of seeds multiplication and neglect of black smiths to make own agricultural inputs.

Initially the farmers said that they used to mostly depend on livestock during bad harvests affected by dry spell, but due to changing environment, they now keep limited number of livestock, as a result of increasing pressure on grazing land for both settlement and cultivation, there has been also constant disputes between cattle owners and farmers, limited veterinary services to treat diseases like black quota, mouth and foot diseases, all these undermined the efforts to ensure

food availability, as no one can afford to buy them. This was further elaborated by an elderly farmer that,

“NAADs has been active trying to improve the situation, through introduction of new varieties like groundnuts, cassava stock but they brought the seeds at wrong season so no one succeeded in planting the new seeds” (In-depth interview on 11 June 2016).

The community leaders revealed that there was an element of poor attitudes towards farming as most of the able bodied young men were engaged in selling sand other than cultivation, the Sub-County has some place with pit sand that provides the best materials for building , so the builders direct tipper lorries to buy sand from the area quite often, the money earned from sale of sand and fishing activities was not used for purchase of improved seeds and cultivation , but rather for drinking beer or local brew so this has also contributed to food in availability in the study area .

“I always tell my husband to come with me to the field but he gets annoyed, tells me to live him alone and lives for town as early as 7 am, he comes home late and lives early and drug and chewing marungi other than supporting me.” (In-depth interview on June 9th 2016)

It was observed that, the income earned from sand helps to promote the market for local brewed beers known as moyo-moyo and the brewers continue supporting their children to school , food and medicine, however it has also impacted negatively, simply because it has created a lot of social problems such as domestic violence, laziness, increased number of school dropouts, early marriage and high illiteracy rate, theft and hunger in homes, a certain respondents said it's the weaknesses of the community leaders for failing to set by-laws to regulate the behaviors of the youths.

4.3 Factors Affecting Food Accessibility in Adropi Sub-County

The main factors affecting food accessibility, was food price, most farmers practice subsistence farming, which was the major source of their own food production which normally lasts for three to four months and in the period of May to late July is a period of hunger including August, more especially when rain starts late, food becomes scarce and the price shoots up in the area and members in the family can't afford to pay for, most of the households in this sub county have sold most of food items to meet other basic needs like soap clothing treatment and school fees and they become net food buyer, the situation would continue up to late July when new harvests is ready and that is when the prices of the food stuff would drop. A farmer argued that, it's not only food price but , a combination of other factors such as lack of cash circulation within the community and distance to cheapest market, was also cause to food inaccessibility in the cross border trading between Adjuman and Amuru district in Apana market along Amuru and Adjumani border where the prices of food stuff are relatively low but due to lack of cash, for the purchase of the food and transport to and from the market was also another issue , these has limited the community from accessing available food in the neighboring markets.

There are some finance institutions that exists in the community like village savings and loans associations (VSLA) that provide the financial opportunities to the community, however the condition is that, to get the loan you must be a member in the group which is not so bad, but the challenge was loan repayment, as most of the families have been culprits, so lending out loans has become problem and some members ran away.

"Food access is our major limiting factor. Food is physically present in the local markets in Awindiri, coming from neighboring Districts and own

production, but its inaccessible, because of high Poverty levels" (In depth interview 12th June 2016).

The high costs of fresh cassava, cassava flour, sorghum, beans and livestock products coupled with drought currently, the distance to the cheapest market in Apaa , close to Amuru District remains another limiting factor to food access to some households who cannot afford to travel and also cannot purchase food from the market. High maize flour prices have negatively impacted on household food access and cause livestock prices to increase and are expected to rise again in case the second rain season is associated with floods. A farmer notes that despite the fact that:

"...most of the people have become loan defaulters, but there has been a lot of flexibility being exercised to ensure people access loans to practice income generating activities so as to access food and also seeds and tools in the market" (In-depth interview on 12 June 2016).

The farmer further mentioned that, There are two different types of access to food: direct access, in which a household produces food using human and material resources, and economic access, in which a household purchases food produced elsewhere Location can affect access to food and which type of access a family will rely on. The assets of a household, including income, land, products of labor, inheritances, and gifts can determine a household's access to food. However, the ability to access to sufficient food may not lead to the purchase of food over other materials and services. Demographics and education levels of members of the household as well as the gender of the household head determine the preferences of the household, which influences the type of food that are purchased, household's access to enough and nutritious food may not assure adequate food intake of all household members, as intra household food allocation may not sufficiently meet the requirements of each member of the household. A farmer added that access to food must be available in socially

acceptable ways, without, for example, resorting to emergency food supplies, scavenging, stealing, or other coping strategies.

"Our main source of income during food crisis was casual labor, sale of grass and fire wood, sale of sand, sale of own asset, fishing activities would also be carried out, though with some few people engaged in fishing, due to distance from residential area and the river Nile coupled with very limited fishing equipment" (In-depth interview conducted on 12 June 2016).

4.4 Factors Affecting Food Utilization in Adropi Sub County

The researcher observed that, food consumed was limited in diversity with cassava, maize, potatoes, groundnuts, vegetables and beans being the major foods. Households produce more than six crops annually and keep at least chicken and goats as livestock's. Limited knowledge at household, food consumption hardly reaches three times per day; the level of nutritional balance limits households to few food sources. Households lack adequate energy for food preparation due to heavy depletion of forests for charcoal and poles for building grass thatched houses. Purchase of fire wood and charcoal remains a challenge. Safe water coverage is low, resulting in water borne diseases like diarrhea cases, worms infestation and occasionally Cholera. Poor hygiene and dietary diversity in some of the households do exist, some of the boreholes tend to change color when there is heavy rain due to poor location cited along the flooded areas.

We manage food scarcity by reducing number of meals from either two or one depending on the food availability, dietary diversity is not an issue, but so long as there is food that can be eaten and family gets satisfied. A respondent revealed that managing food scarcity depends from home to home, some of them will resort to borrow from relatives, sale of household properties, like piece of land, sell of livestock, working for those who have money and buy food" (FGD conducted on 11 June 2016).

The Food consumption parameters such as Food Consumption Score (FCS) showed that most of the population in this area has poor Food consumption, low dietary diversity among population was energy deficient. In the Adropi -Sub-county, few populations consumes three or more meals a day. These food consumption limitations are not in acceptable range. Food consumption situation is likely to worsen by the end of year 2016.

“Since the rains has not been reliable and might lead to inadequate harvests, hence contributing to severe malnutrition among the households” (In-depth interview conducted on 10 June 2016).

It was revealed during interview that, the prevalence of worsening or Global Acute Malnutrition (GAM), of under-five children underweight, with the prevalence being higher in rural than urban areas. Some of households in the area have poor consumption of an extremely unbalanced diet, devoid of protein and mainly comprised of starchy maize, cassava, and potatoes with some vegetables. Most of the communities have liveliness scarcity.

Food utilization in Adropi Sub-County was affected by diseases such as malaria, and Diarrhea), lack of knowledge on appropriate food groundwork methods and use of unsafe water. This have impacted on nutrition causing, stunting, underweight and wasting.

The researcher also observed that, the issues of food utilization seems to be sensitive in such a way that, it's quite difficulty for the women farmers to tell the number of meals they have in a day and its preparation process when the husband is around as it looks embracing and dishonoring the husband as the owner of the family. A respondent suggested that People need education on how to prepare food and how to diversify their diet and livelihoods. A larger number of the households rely on their own food during harvest. Since they also sale some of the food items so as to buy some basic needs

such as salt, soap and other food stuffs not locally produced, these farmers eventually become food buyers in a period of three months.

“You see our problem here is communal feeding, meaning the family members still share plates and washing utensils like basin or containers during and after meals and also feeding in the same container other than considering individual hygiene (In-depth interview on 11 June at Adropi)”.

Safe water is available for food preparation; however the community is not conscious about a balanced diet and continue to eat limited food groups in most cases linked to the available food from own sources of production.

4.5 Conclusion

This chapter presented and discussed the findings from the field research as guided by the research questions. The proceeding presentation and discussion was linked to three pillars of food security such as availability, access and utilization. The presentation and discussion was conducted based on the factors affecting food security and exploring the extent to which factors affecting food security has contributed to food shortage in the area. The next chapter of this work provides the summary of the findings draws a general conclusion and gives recommendations.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

In this chapter the main findings are summarised, a conclusion is drawn and recommendations are given. The summary was guided by the research objectives, which explored the factors affecting food availability, accessibility and utilisation in Adropi Sub-County.

5.1 Summary of findings

This is a summary of the findings of the study in accordance with the study objectives.

Factors affecting food availability

The study has confirmed the factors affecting food availability under the first research question. This was concluded, in such a manner that, the availability of food in Adropi sub-county was own food production which mainly obtained from subsistence farming. The own food production usually last for three months, the livestock and its products such as meat and milk are available and are also sold for cash but not all can afford. Food storage remained a challenge due to poor yields in the area; there was also no granary with exception of few. The same food stock caters to serve for other basic needs such as health, clothing, salt etc. The cotton which used to cater for purchase of basic need mentioned above lack market, so food is physically available but the major problem was cash money.

The Crop farming and rearing of livestock, fishing and trading in various food items takes place. There was also cross border trade with South Sudan, Amuru and Gulu Districts that were on the increase. The main staple crops cultivated in Adropi sub-

county are cassava, maize, beans, ground nuts, sweet potatoes, rice and sorghum, among others. Cash earning crops also include bananas, Simsim, beans, cassava, ground nuts, cotton, soya beans and other citrus like mangoes.

The study established that Most of the farmers' in this sub-county practice subsistence farming, sale of food to acquire other basic needs like soap, salt, clothing, and health and again later, becomes a net food buyers, so this kind of practice has affected food preservation and storage.

The minimum number of cattle that a farmer can keep ranges between 2-5 and 20, combined in the same kraal for communal grazing and the cattle are mainly local zebu and Ankole breeds kept for beef, however the introduction of the Ankole breeds have improved milk production and consumption in the area but not all the farmers own them.

The study revealed that, there was another issue of division of land among the members in the family due to increase in the number of grown up people in the families and using the same land for the same crops over years, other farmers with limited plots have resorted renting plots of land to cultivate from the families with few people in their families, in an attempt to improve food availability but factors like soil infertility could not enable them do so.

The average piece of land that a farmer can own was only 2-3 acres in a family, which cannot accommodate all the crops through rotation farming to maintain soil fertility has become quite problem, this has made a farmer to cultivate the same piece of land for years and years. This has contributed to soil exhaustion and infertility. most of the families have migrated to other sub-Counties like Ukusijon and beyond Acholi and Madi border to cultivate, as a result of land shortage and soil infertility where there is fair rain pattern, abundant land and fertile soil that can support the crop yields better

than where they are currently, besides there are also several other challenges experienced like distance to and from the field mentioned as a limiting factor, clearing the forests with big logs, transporting the food during the harvest still remains a serious challenge as well as road damage during rainy season she expressed.

Adropi-Sub County has two rainfall seasons which supports crop production and livestock farming throughout the year. Its bimodal production calendar was from March to June as the first season and July to November as the second season. The first rainfall season was becoming shorter and more unreliable in the last 3-5 years, where most crops planted in the first season are completely burnt. The second rain for the year 2015 to date have always been associated with floods that normally destroy the crops planted in the second season.

The Un stable rain season is one of the major cause of inadequate food output as you can even observe, the weeding and planting of other crops have not yet been done, delaying time for other crops, it continued up to the month of July and has greatly affected the right time for land preparation, planting, weeding of the food crops like cassava, groundnuts. In the past, the place has been very productive and receives rain throughout the year with only one gap without rain which is June but the season has now drastically changed.

Poor farm tools is also another contributing factor, due to the fact that, farmers use poor hand hoes tools and poor seeds varieties NAADS inputs and other supplies like cassava stock was distributed, but the season for the distribution was not the right one for cassava like October is not a right time for planting cassava and grand in Adropi sub-County and some are still dried up in the Sub-county headquarters.

The finding has shown that, people mostly depend on livestock but due to changing environment, they now keep limited number

of livestock, as a result of increasing pressure on the grazing land for both settlement and cultivation, there has also been constant disputes between cattle owners and farmers, limited veterinary services to treat diseases like black quota, mouth and foot diseases, all these have undermined the efforts to ensure availability of food output according to farmers as no one can afford to buy them.

The income earned from the sand sales helps to promote the market for local brewed beers known as moyo-moyo and the brewers continue supporting their children to go to school, food and medicine, however it has also impacted negatively, simply because it has created a lot of social problems such as domestic violence, laziness, increase in the number of school dropouts, early marriages and increased high illiteracy rate, theft land hunger in homes.

Factors affecting food accessibility in Adropi Sub County

Food has become scarce and the price have shoot up in the area and members in the family can't afford to pay for food, most of the households in this sub county have sold most of the food items to meet other basic needs like soap, clothing, treatment and school fees and they become net food buyers thus, these are main causes of food inaccessibility, this situation would continue up to late July when the new harvests are ready and then the prices of food stuffs might drop.

It was discovered that lack of cash circulation within the community was also another cause to food inaccessibility, there was cross border trading between Adjuman and Amuru District in Apaa market along Amuru and Adjuman border where the prices of food stuffs were relatively low but due to lack of cash, the purchase of the food and transport to and from the market was also another issue which has limited the community from accessing the food that was available in the market.

The study also revealed that, there were some finance institutions that exists in the community like village savings and loans associations (VSLA) that provide the financial opportunities to the community, however the condition is that, to get the loan was that you must be a member in the group which is not so bad, but the challenge was loan repayment, as most of the families have been loan defaulters, so lending out loans has become problem and some also ran away.

The high costs of fresh cassava, cassava flour, sorghum, beans and livestock products coupled with drought currently, the distance to the cheapest market in the Apana close to Amuru district border remains another limiting factor to food, for some households who cannot afford to travel and also cannot purchase food from the market. High maize flour prices have negatively impacted on household food access and it's expected to rise again in case the second rain season is associated with floods.

Factors affecting food utilization in Adropi Sub county

Food consumed was limited in diversity with cassava, ground nuts, vegetables and beans being the major foods. Households produce more than six crops annually and keep at least chicken and goats. Limited Knowledge at household, food consumption hardly reaches three times per day; the level on nutritional balance limits households to few food sources. Households lack adequate energy for food preparation due to heavy depletion of forests for charcoal and poles for building grass thatched houses. Purchase of fire wood and charcoal remains a challenge Safe Water coverage is low and hence, resulting in water borne diseases like diarrhea cases, worms and occasionally Cholera of poor hygiene and dietary diversity in some of the households do exist, some of the bore holes has changed colure during heavy rain due to poor location cited along the flooded areas, besides all these a respondent blamed all the

challenges on food diversity and lack of knowledge on good hygiene practices.

Food consumption parameters such as Food Consumption Score (FCS) showed that most of the population in this area have poor Food consumption, low dietary diversity among population was energy deficient (CFSVA currently). In the Adropi -Sub-county, few population consume three or more meals a day. These food consumption limitations are not in acceptable range. Food consumption situation is likely to worsen by the end of year since the rains has not been reliable and has led to inadequate harvests, hence contributing to malnutrition among the households.

The findings revealed that, the prevalence of wasting or Global Acute Malnutrition (GAM). The children under-five were underweight, with the prevalence being higher in rural than urban areas, majority of households in the area have poor food consumption of an extremely unbalanced diet, devoid of protein and mainly comprised of starchy maize, cassava, and potatoes with some vegetables.

Food utilization seems to be sensitive in a way that its quite difficulty for the women farmers to tell the number of meals they have in a day and its preparation process when the husband is around as it looks embracing and dishonoring the husband as the owner of the family. People need education on how to prepare this food and how to diversify their diets and livelihoods.

The finding explored that, there was a communal feeding, meaning, the family members still share some of the family items such as washing in the same basin or containers during and after meals and also feeding in the same container other than considering individual hygiene.

5.2 Conclusion

The issues of food security remains a global agenda that needs a certain consideration from all the key players in food security such as Ministry of Agriculture, animal industry and fisheries, United nation UN) agencies, like world food programme and Food and Agriculture organization of United nations, international Non-Governmental Organization, and local nongovernmental organizations, community leaders, and the farmers in the area, food security remained a serious challenge as supported by many researchers in this study have evidently shown. This study established the factors affecting food security in Adropi Sub-County, Adjuman District. To conclude with these findings, three research questions were raised. Question one required to establish factors affecting food availability in Adropi Sub-County, the second question was meant to find out the factors affecting food accessibility and question three explored the factors affecting food utilization in Adropi Sub County.

Generally, food production at household level was insufficient for staple foods like cassava, maize, rice, ground nuts and beans, across Adropi Sub-County, poor post-harvest handling practices are the limiting factors. Uneven distribution of rain from march to June this year 2016, hail storms, crop pests and diseases as well as livestock diseases has also posed a serious challenges to food availability, accessibility and improper food utilization, although food utilization was not a major limiting factor to food security in this study so long as there is little food that can be shared among the family members to save live.

5.3 Recommendations

The following recommendations are offered to address the underlying factors affecting food security in Adropi Sub-County.

The finding revealed that there was tendency of poor attitude of community towards Agricultural activities, Engaging all the farmers union, community leaders, youth groups by Agriculture Officers through provision of extension services would be helpful for effective decision making to address the factors affecting food security. Encouraging community to revive the food storage through use of granaries so as to respond to food shortage and support food insecure households.

The finding stated that late and change in climate was one of the factors affecting food security in Adropi Sub-County, the researcher has therefore recommended the farmers to resort to cultivating drought resistant crops like sorghum, practicing irrigation farming for vegetables and maize, millet and rice, migrating to fertile and vast land in places like Zoka close to Acholi border and also use of water pump machines along the tributaries during dry season to ensure constant food supplies like vegetables which intern can be sold for purchase of other food stuff for family to feed on.

Deriving from findings, most of the farmers practice subsistence farming where the production was only for home consumption with little portion for sale to acquire basic needs like salt, health and clothing. The researcher is recommending the farmers to go back to communally farming (rotational farming) where farmers come together to cultivate an acre within a day and would continue to rotate among the farmers and open up large farm for both consumption and commercial purpose, instead of use of money which most people doesn't have access to. This would help farmers to become food suppliers other than being net food buyer and hence, improving food accessibility in the areas.

The findings in this study note that poor farm tools was also another contributing factor to food in availability output, due to the fact that, farmers use poor hand hoes tools and

poor seeds varieties NAADS inputs and other supplies like cassava stock was distributed but the season for the distribution was not the right one for cassava like October. The researcher has further recommended for provision of the improved seeds and tools like ox-plough, by actors working in Agriculture sector like NAADS, District Agriculture officers, and also seeds distribution should be carried out at right season and employing right and skilled personnel to implement the agricultural activities, but not the army as with the case of NAADS currently.

In the findings, the main factors affecting food inaccessibility was that, the own food production normally lasts only for three to four months, and the period from May to late July is a period of hunger including August, more especially when rain starts late, food becomes scarce and the price shoots up in the area and members in the family can't afford to buy, most of the households in this sub county have sold most of food items to meet other basic needs like soap clothings, treatment and school fees and they become net food buyer. The researcher therefore recommends for loan provision to farmers to shift from subsistence farming to commercial farming to re-build on their livelihoods, and also encourage farmers to form cooperative society to ensure access to market for their produce and cash money, so that farmers will be able to access food, seeds and farm inputs easily at any cost as well as helps to solve problem of distance to the cheapest market and transportation cost.

In relation to findings, food consumed is limited in diversity with cassava, ground nuts, vegetables and beans being the major foods consumed. Households produce more than six crops annually and keep at least chicken and goats. Limited Knowledge at household, food consumption hardly reaches three times per day, food preparation due to depletion of forest and lack of charcoal and communal feeding was another issue, to

improve the situation education through community sensitization on personal hygiene, and introduction of energy saving stove ,tree planting and balanced diet would be helpful to improve this situation.

Basing on the findings, that to manage food scarcity in the areas needs to reduce number of meals from either two or one depending on the food availability, dietary diversity is not an issue , but as long as there is food that can be eaten and family gets satisfied. There is need for introduction of food balance diet, through community sensitization and improve on food production to support effective dietary diversity among the households.

Finally, the findings revealed that there was challenge of seeds and farm inputs as well as pest and diseases, the researcher has in addition recommended that, farmers should embark on traditional methods of seeds multiplication , like use of ash to dry and protect the seeds and also hanging it in the kitchen where there is smoke most of the times as with the case of maize, tomatoes, egg plants can be cut and fixed on stick, groundnuts can also be kept in granaries etc., .This is to prevent the seeds from getting spoiled , not forgetting the use of neem tree leaves , pounded , mix with water and use to spray the plants to kill the pest and diseases. Farmers need to make use of black smiths to make them some of farm inputs such as pagers, axes , hoes out of pipes and others, to supplement the modern Agricultural inputs , that the community might be supported with by either Government or non-governmental Organization in the area to support farmers improve food production.

5.4 Suggestions for Further Research

Since the researcher conducted a qualitative study, it would be necessary to carry out a quantitative study in order to

explore more on the factors affecting food security in Adropi Sub-County. To improve the understanding of this topic and widen further, the underlying relationships between the two dimensions from a different views.

It would be important that further research should be conducted on the care practices at household level otherwise food security concerns do exists when care practice for vulnerable groups such as children the pregnant and elderly persons are not attended to. This is because the current study only focuses on a factors affecting food security. For example, it would be interesting to study issues concerning individual food intakes, calories and dietary diversity in relation to the activities and practices.

Finally, stability as the fourth aspect of food security could also be included in any other future research since it was not operationalized in this study.

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APPENDICES

Appendix 1: Data Collection Instruments

Interview guide for farmers

My name is **Katabayas Robert Flaminio**, a student of Uganda Martyrs University pursuing Bachelor Degree in Democracy and Development Studies in my final year carrying out research titled "*Assessing factors affecting food (in) security in Adropi Sub County, Adjumani district*". The research is purely for academic purpose, so feel free to answer the questions as the data obtained will be treated with utmost confidentiality. The findings of the study will be useful for study purpose and other service providers like extension workers, policy makers and other NGOs that work to improve food security situations in Adropi Sub County in particular, Adjumani district and Uganda at large. You are free to indicate your name or not, it will be treated as confidential for the research purpose only. The interview will last approximately 35 minutes. Are you willing to participate?

Part A: Respondents Information (Tick where applicable)

- 1. Name: (optional)
- 2. Age
- 3. Gender of the respondent?
 - a) Male () b) Female ()
- 4. In which Parish do you come from?
 - a) () b) () c) ()
- 5. In which Village do you come from?
- 6. Marital status?

a)Married() b) Single() c)Widowed() d) Widow() e)
Divorced () f) Other ()

7. What level has one reached! (Tick all that applies)

a) Primary() b) Secondary () c) Tertiary()

d) Degree () e) Other ()

8. What is your current occupation?

Part B: Factors affecting food availability

9. What size of land do you own.....(Acre)

10. Mention five main food crops you grow (Priority)

a.

b.

c.

d.

e.

11. Name five factors contributing to food in availability?

a.

b.

c.

d.

e.

12. What are the sources of food for the household?

a. Own farm production

b. Purchase food

c. Government rations

d. Supplies from friends/relatives

e. Others (specify)

13. Do you have any food storage facility?

a. Yes

b. No

Part C: Possible factors affecting food accessibility

14. For how many months in the year is your own food production sufficient for your family? months

15. In which months of the year does the family experience food scarcity?

.....

16. What are the main reasons for food inaccessibility in the household?

a.

b.

c.

d.

17 What are the factor affecting foods in accessibility?

a.

b.

c.

Part D: Factors affecting food utilization

18 Do you experience problems in food utilization?

19 Do the household get all the meals each day through the years?

a. Yes b. No

20 If yes, what is the frequency?

a. One meal

b. Two meals

c. Three meals

21 What is the combination of meals

a.

b.

c.

d.

22 How would you address problems of food utilization?

e.

f.

g.

h.

Part E: Coping mechanisms employed to address food insecurity

23 How do you manage to get food during those months of scarcity?

a. Sale of assets

b. Sale of grass and fire wood

c. borrowings

d. Food aid

24 What are your main economic activities (main source of income)?

a.

b.

c.

d.

Thank you very much!!!

APENDIX 2: Focus groups discussion guide for community leaders and farmers

Dear respondent,

Introduction and Consent: My name is Katabayas Robert Flaminio, a student of Uganda Martyrs University pursuing Bachelor Degree in Democracy and Development Studies in my final year carrying out research titled "Assessing factors affecting food (in) security in Adropi Sub County, Adjumani district". The research is purely for academic purpose, so feel free to answer the questions as the data obtained will be treated with utmost confidentiality. The findings of the study will be useful for study purpose and other service providers like extension workers, policy makers and other NGOs that work to improve food security situations in Adropi Sub County in particular, Adjumani district and Uganda at large. You are free to indicate your name or not, it will be treated as confidential for the research purpose only. The interview will last approximately 35 minutes. Are you willing to participate?

Part A: Respondents Information (Tick where applicable)

1. Name: (optional)

9. Age Range

a) Below 18() b) 18 to 25 () c) 26 to 30()

2. (d)30 to 40() e) 45 to 50()f) 50 above ()

3. Gender of the respondent?

a) Male () b) Female()

4. What is your current occupation/position?

.....

Part B: Factors affecting food availability

5. How is food security situation?
6. Does food insecurity occur in your area?

Part C: Possible affecting food inaccessibility

7. To what extent is food accessibility occurring in the community?
8. What are the major causes of food inaccessibility?
9. How can access to food be promoted in the community?

Part D: Factors affecting food utilization

10. How is food used within the community?
11. How many times do you have a meal in a day?
12. What can be done to ensure effective food utilization in the community?

Part E: Coping mechanisms employed to address food insecurity

13. How does the community react to food insecurity?
14. What are some of the strategies for addressing food insecurity?

Thanks for your time and cooperation

APENDIX 3: Interview Guide for Community Leaders

Dear respondent, introduction and consent

My name is Katabayas Robert Flaminio, a student of Uganda Martyrs University pursuing Bachelor Degree in Democracy and Development Studies in my final year carrying out research titled "Assessing factors affecting food (in) security in Adropi Sub County, Adjumani district". The research is purely for academic purpose, so feel free to answer the questions as the data obtained will be treated with utmost confidentiality. The findings of the study will be useful for study purpose and other service providers like extension workers, policy makers and other NGOs that work to improve food security situations in Adropi Sub County in particular, Adjumani district and Uganda at large. You are free to indicate your name or not, it will be treated as confidential for the research purpose only. The interview will last approximately 35 minutes. Are you willing to participate?

Part A: Respondents Information (Tick where applicable)

- 1. Name: (optional)
- 2. Gender of the respondent?
- 3. a) Male () b) Female ()
- 4. Marital status?
a) Married () b) Single () c) Widow () e) Divorce ()
f) Other ()
- 5. What is your current occupation/position?
.....

Part B: Factors affecting food availability

6. How do you know that food is available in your area?

7. What are indicators of food insecurity in your area?

8. How do farmers respond to them in your community?

Part C: Possible factors affecting food accessibility

9. To what extent is food inaccessibility occurring in the community?

10. What are the major causes of food inaccessibility?

11. How can access to food be promoted in the community?

Part D: Factors affecting food utilization

12. How is food used within the community?

13. What is the food combination in the community?

14. What can be done to ensure effective food utilization in the community?

Part E: Coping mechanisms employed to address food insecurity

15. What are some of the strategies for addressing food insecurity?

Thanks for your time and cooperation

APENDIX 4: Interview Guide for Agriculture Officer

Dear respondent,

Introduction and Consent

My name is Katabayas Robert Flaminio, a student of Uganda Martyrs University pursuing Bachelor Degree in Democracy and Development Studies in my final year carrying out research titled **"Assessing factors affecting food (in) security in Adropi Sub County, Adjumani district"**. The research is purely for academic purpose, so feel free to answer the questions as the data obtained will be treated with utmost confidentiality. The findings of the study will be useful for study purpose and other service providers like extension workers, policy makers and other NGOs that work to improve food security situations in Adropi Sub County in particular, Adjumani district and Uganda at large. You are free to indicate your name or not, it will be treated as confidential for the research purpose only. The interview will last approximately 35 minutes. Are you willing to participate?

Part A: Respondents Information (Tick where applicable)

1. Name: (optional)

2. Gender of the respondent?

a) Male() b) Female()

3. Marital status?

a)Married()b)Single()c)Widowed()

d) Widow() e) Divorced ()f) Other()

4. What is your current occupation/position?
.....

Part B: Factors affecting food availability

- 5. How is food security situation in this sub-county?
- 6. In your opinion, do you think food is problem in your Sub-County?
- 7. If yes what are the problems? And how do farmers respond to them?
- 8. How does your office respond to it?
- 9. How is meat and milk yield?

Part C: Possible factors affecting food accessibility

- 10. How can one access food easily in this sub-County?
- 11. If yes in what ways?
- 12. What are the major causes of food inaccessibility?
- 13. How can this be solved?

Part D: Factors affecting food utilization

- 14. Do you think is there problem in food utilization?
- 15. What are these problems?
- 16. What can be done to ensure effective food utilization in this Sub-County?

Part E: Coping mechanisms employed to address food insecurity

- 17. How do the famers manage the issue of food insecurity in this Sub-County?

Thanks for your time

APPENDIX 5: Observation check List

FOOD AVAILABILITY

- Food stock/ availability at house hold level.
- The crop yields
- The cultivated sizes of land
- Milk/ meat yields and supplies

FOOD ACCESSIBILITY

- Security
- Market price/ affordability
- Roads/bridges connecting to the market

FOOD UTILIZATION

- The type of food people actual consume
- Meals frequency
- Nutrition status
- Dietary quality and dietary choices

COPYING MRCHANISM

- Sale of grass and fire wood
- Work for food
- Eating wild vegetables and fruits
- Sale of live stock
- Sale of a piece of land

Thank you