

Factors Influencing Food Security Status among Rural Households in Uganda

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Abstract: - The study was carried out to determine the factors influencing food security status among rural households in Uganda. The data was collected from 206 respondents in rural households of Western and Northern Uganda. Quantitative and Qualitative data collection methods were used to deduct critical information for this study. Specifically survey method (questionnaires and interviews) was used. Secondary data helped to collect information from field work. SPSS was used in data analysis. Qualitative data was analyzed using general content analysis. The study revealed that the key factors that influenced food security were: Land Shortage with infertile soils because of over cultivation, use of hand hoes by majority of household, dominance of cash crops than food crops, big family size of seven and above people, lack of food storage as well as food preservation facilities, low prices of agricultural products, Socio-cultural beliefs such as gender as well as government promoting the growing of cash crops than food crops. The study recommended that there is need for Ugandan government to promote food crops more than cash crops (famine crops), establishing a crop seed multiplication unit to every district and sub-county, manufacturing low cost farm inputs especially agricultural tools and inputs, any government land which is underutilized should be identified and utilized for food production, establishment of research centers at lower local governments, law to ensure every household possess a food store/granary as well establishment of national food reserves, serious trainings through seminars, workshops and conferences on food utilization, food processing plants to produce processed food, infrastructure development, legalizing a number of children to be produced.

Key words: population, food availability, food accessibility, and food utilization.

I. INTRODUCTION

Uganda has the most favorable climate that can highly support agriculture (Ministry of Agriculture 2011) to ensure that almost all parts of the country have enough food (National advisory services report 2012), but there is acute malnutrition, hunger and famine (Oxfam 2016). It was therefore necessary to carry out this study and find out factors influencing food security status among rural households in Uganda

II. REVIEW OF RELATED LITERATURE

Population growth is one of the most important single factors that challenge food security in Africa. This is because population growth has greatly increased the amount of food required to adequately feed Africa especially the sub-Saharan part. Unfortunately, population growth is not proportional to

the amount of food produced to feed the same population. Women in the region have on average 5.1 children, a decline from 6.7 children in 1970 but still more than double the world average of 2.5 children. SSA's population is projected to more than double from 856 million to about 2 billion in 2050, even if couples choose much smaller families over the coming decades (This projection assumes that fertility will decline from 5.1 children per woman to 3.0 children by 2050) (UN Population Division, 2010). Failure to increase resources for family planning will further delay reproductive health gains and fertility declines and could result in a far larger population and thus greater-than-anticipated food needs in SSA by 2050.

Uganda's economy is dominated by agriculture. More than 80 percent of Uganda's workforce is engaged in agriculture and approximately 30 percent of Uganda's total land area is dedicated to agriculture. Food crops accounted for approximately half of agricultural GDP in 2003, followed by cash crops (17%), livestock (16%) and fisheries (12%) (RoU, 2004). Uganda's primary export is coffee. Other important agricultural products include tea, cotton, tobacco, cassava, maize, millet and pulses. The country's southern climate is tropical, with two distinct dry seasons. In contrast, the northeastern region is semiarid. Uganda faces a number of environmental challenges including deforestation, overgrazing, loss of wetlands and soil erosion. Despite that agriculture supports most livelihoods and is the main source of exports – contributing as much as 85% of export earnings in recent years – the overall share of agriculture in GDP has declined in recent years, from around 50% in the early 1990s to 23% in 2008 (RoU, 2004; FAO, 2009b). Declining agricultural prices, a slowdown in the growth of agricultural production, and insecurity in northern and eastern Uganda have all contributed to the drag on agriculture (FAO, 2010). Uganda's agricultural sector is based primarily on smallholder farms, 80% of whom own an average of only 2 hectares of land but contribute 70% of agricultural production (Bahiigwa 1999).

Over half of all agricultural production is consumed domestically. This structure has a number of implications for food security both at household and national levels. As small farms are largely dependent on weather and underlying soil fertility, food insecurity emanates from inadequate rainfall, excessive rainfall, pests and diseases, and low crop yield (Bahiigwa, 1999). This has always led to reduced low yields that at the end affect food production.

Weak purchasing power, high transportation costs, and poor distribution infrastructure exacerbate food insecurity. The 2008-09 Uganda Census of Agriculture found that 57% of 3.6 million surveyed agricultural households reported periods in the previous 12 months when they were unable to maintain consumption at a normal level (UCA, 2010). According to FAO (2010a), 27% of the rural population falls below the poverty line, and 63% of total household expenditure in rural areas goes toward food. FAO (2010) lists Uganda's major agricultural products (in decreasing order based on overall volume in 2005) as plantain (green cooking bananas locally known as Matooke), cassava, sweet potatoes, maize, cow milk and millet. Traditional cash crops include coffee, cotton, tea and tobacco; main fruits and vegetables include pineapples, passion fruits, tomatoes, onions and cabbages. Plantain and sweet potatoes are grown mainly in the western and central regions while cassava is grown mainly in the northern and eastern regions. Maize is grown country-wide, but predominates in the west and the far north and east of the country. Due to poor storage capacity, gaps in the cropping calendar frequently translate into hungry seasons, especially in the northern region (FAO, 2010).

Although on-farm storage is a potential way to mitigate seasonal and inter-year production shocks, farmers typically sell food at low prices immediately following harvest and then purchase grain later at higher prices. In some cases, this pattern reflects unreliable means for on-farm storage and in some cases a need for cash. Such behavior not only leads to food insecurity between harvests, but also results in very low rates of household saving (Kasente, et al., 2000). Calculations from the 1999-2000 UNHS suggest that 90% of Ugandan households never participate in any form of formal savings (Asiimwe and Mpuga, 2007).

In the absence of storage and savings, drought and other environmental stresses that undermine crop production and livestock rearing can lead to widespread hunger and, in extreme cases, famine. Okori, et al. (2009) conducted a survey in Lira and Kitgum districts of northern Uganda to examine the causes of and farmers' perceptions regarding famine during a period of high food stress. According to FAO Survey 2010, Seventy four percent of the respondents were reported to have experienced extreme food shortages, consistent with a pattern of localized famine, and over half of them linked this to insufficient agricultural production. Farmers mentioned poor harvest (91%), lack of water (86%), poor animal health (74%) and livestock death (37%). During the famine, households mainly depend on cultivated vegetables (91%), followed by wild leaves, fruits and roots (75%), sorghum (70%) and cassava(69%). The primary coping strategies included gathering edible wild vegetables (84%), working for others in exchange for food (62%) or money (48%), and migration to urban areas (13%).

Ugandan agriculture is highly vulnerable to the vagaries of weather leading to food insecurity. With only a small proportion of land irrigated, Uganda's agriculture is highly

dependent on rainfall. As underscored by the Poverty Eradication Action Plan (PEAP) and the Plan for the Modernization of Agriculture (PMA), Uganda's heavy reliance on rain-fed agriculture is a primary factor undermining the country's agricultural performance leading to food insecurity. According to data from the 2005-06 UHNS, forty-two percent of households reported that their agricultural production was affected by drought or insufficient rainfall, and fifteen percent had experienced floods and hailstorms. In general, drought, heavy rains, crop diseases and livestock diseases were reported as the most common shocks to household livelihoods. Farmers' perceptions of and adaptations to climate variability were studied by Mwerera and Majaliwa (2010) through a survey conducted in Kabale and Nakasongola districts 23 (representing the Kabale-Rukungiri Highlands in western Uganda and the Central Baruli Farmlands and Central wooded savanna of central Uganda). Results indicated drought as the main shock to households (reported in 90% of cases) compared to less covariate shocks such as pest/disease outbreak (6.1%) and human disease (3.1%). Most farmers (81%) reported that they noticed recent changes in weather patterns. In response, 62% did nothing and 26% sold livestock. Farmers also reported that climate fluctuations had adverse effects on crop yields (39%) and income (35%), and increased the incidence of malaria (60%).

Despite the numerous opportunities offered by diverse available technologies and development interventions at local, national, and global levels, food security still remains a challenge in Africa. Other continents such as Asia and South America have utilized available technologies and Overseas Development Assistance to improve their food security situation to the extent that they are not only food secure, but food exporters as well. The reverse has been the case for Africa, especially Uganda.

In Uganda, agriculture is characterized by inadequate policies, weak institutions, and poor regulatory frameworks that undermine research and development (R&D) in the sector. Most modern technologies with the potential to ensure adequate food security require policy support that is backed up by adequate regulatory frameworks and functional institutions. In most cases these policies, regulatory frameworks, and institutions are either absent or very weak and thus unable to support agricultural development. For example, not many countries in Africa have policies, regulatory frameworks, and institutions that support R&D in biotechnology (GMOs), which offers enormous potential to boost food productivity. Except for South Africa and Burkina Faso where biotech cotton has been commercialized since 1997 and 2008, respectively, the technology is still under confined field trials in other African countries such as Kenya, Uganda, Egypt, and Malawi (International Service for the Acquisition of Agri-biotech Applications (ISAAA) AfriCenter, 2012).

In appropriate agricultural policies: There are existing policies to support research and innovations in Uganda, but much as this is a positive result, many of these policies are not fully implemented because of lack of capacity, poor infrastructure, or lack of political goodwill, among others (Ozor 2013). At a regional scale, the Comprehensive African Agriculture Development Program (CAADP) and its accompanying Framework for African Agricultural Productivity provide a vision for improving agricultural productivity in Africa through the enabling and acceleration of innovation. However, many of the African Union's member states Uganda in particular still lag behind CAADP's agreed upon requirement that each country spend at least 10 percent of its budget on agriculture in order to achieve about a 6 percent growth in the sector. Only a few countries such as Burkina Faso, Cape Verde, Malawi, Chad, Ethiopia, Mali, and Niger have implemented this policy recommendation.

A problem also arises when the focus on policies, structures and institutions is put above that of the people. When policies are not inclusive in their design, they tend to handicap the exempted lot by providing barriers. For instance, policies that promote monopolistic competition that favors large-scale farmers hurt the cottage and small-scale farmers. The lack of continuity of agricultural programmes due to changes in government is also a serious problem that affects food security in Africa.

Environmental degradation in form of wetland mismanagement:

According to Turyahebwa (2013), Wetlands are the basis of food security, directly providing resources for consumption, indirectly supporting crop and livestock production, materials that are sold for purchasing food in emergency situations and services that support food production. The most interesting feature of wetlands is that they provide conditions that enable a wider range of crops than dry lands, and therefore provide ready food supplies to wetland adjacent communities during unfavorable conditions that are otherwise unavailable for the traditional crops grown in the uplands. Beyond subsistence agriculture, wetlands are increasingly offering products for additional income through cultivation of locally marketable crops such as rice, sugar cane and vegetables. These products are sold and income is used to buy household food supplements.

With increasing population around the wetlands, coupled with land shortage and weather variations, the poor people, especially in rural areas, will continue to generally rely on wetland ecosystem services directly for subsistence and income generating activities for sustaining their livelihoods unless alternative livelihood options are provided. With rain-fed agriculture being the primary food production option for people living adjacent to wetlands in Uganda, there are risks of many people being vulnerable, and who could see their food security seriously limited

According to MAAI report (2014), In Uganda, nearly 1.4 million people are currently food insecure, with the prevalence of food energy deficiency at the country level standing at 37%. Local farmers are vulnerable to starvation in times of environmental stress, drought and floods because of dependence on rain-fed agriculture. Accordingly, the farmer's means of increasing food production has always been an expansion of area under cultivation from virgin and fragile areas, especially wetlands. Consequently, Uganda has lost about 11,268 km² of wetland, representing a loss of 30% of the country's wetlands from 1994 to 2009 and the situation is worsening to date. While the environmental importance of wetland ecosystems is widely recognized, their contribution to household food security is still hardly explored. With increasing population around the wetlands, coupled with land shortage and weather variations, households with limited options will continue to generally rely on wetlands for food security and income for sustaining their livelihoods unless alternative livelihood options are provided. There is thus a need to design appropriate food production technologies that ensure sustainable use of wetland resources for food security. (Turyahebwa 2013),

Over the past decades, there has been an increasing influx of people into wetland areas as a coping strategy, especially in areas where uplands are predominantly characterized by low agricultural potential, dominated by poor soils and low unpredictable rainfall. This is further due to the presence of water in wetlands during the dry season, combined with their natural fertility and irrigation potential. Wetlands are also used to secure food not only directly through dry season subsistence cultivation but also indirectly through income generation from cash crops, the production of clay for pottery, reed and palm mats, baskets and beehives, and the sale of collected items, thus acting as safety nets for most adjacent communities. In the drier regions, wetlands are the only sites where people can get water, varieties of food and other basic supplies. (Turyahabwe, N., Kakuru, W., Tweheyo, M. et al 2013)

The National Development Plan (NDP) indicated that the food security situation in Uganda has been unsatisfactory. Nearly 1.4 million people are currently food insecure despite the country's abundant resources with the prevalence of food energy deficiency at the country level standing at 37%.

According to a report by the World Food Programme (WFP), about 6.1 million (21%) people in Uganda are undernourished. The report further identifies that at the household level, about 6.3% of the households in Uganda are food insecure and that food insecurity is most common among the natural resources dependant households. About 86% of Uganda's population live in rural areas and are predominantly rural farmers and agricultural practice is predominantly rain-fed, characterized by low levels of crop productivity. The people are generally cash-poor, with over 40% living below the poverty line, on less than a dollar a day. Most of these people are perennially food insecure and

are thus vulnerable to starvation in times of environmental stress, drought and floods.

Accordingly, the farmer's means of increasing agricultural output has always been an expansion of area under cultivation. Additional land is often brought under agriculture either through reduction in fallow periods or cultivation of virgin areas, especially forests and wetlands. As noted by NEMA 2015, an increasing number of marginalized people are moving into fragile wetland areas, in search of new means of livelihood, including crop farming, fishing and livestock grazing. Crops commonly grown on the wetland periphery include: yams, beans, maize, sweet potatoes, cassava, cabbages, sugar cane, and low land rice. Consequently, Uganda has lost about 11,268 km² of wetland, down from 37,575 km² (15.6%) in 1994 to about 26,308 km² (10.9%) in 2009. This represents a loss of 30% of the country's wetlands. To date, this loss is expected to be even higher.

Despite their contribution to rural livelihoods, wetland resources have been overlooked in national economic development planning. Thus, the current development pathways will continue to underestimate the significance of these resources, and in so doing, miss opportunities for reducing food insecurity and sustainable management of wetland systems. While the environmental importance of wetland ecosystems is widely recognized, the potential contribution of wetland resources to household food security is still hardly explored. Understanding the degree to which wetlands contribute to people's food security may be vital in steering decisions that minimize negative impacts or enhance the benefits that wetlands have for communities.

Ugandan cultures and their relation to food security

According to Byaruhanga (2008), Uganda's population is composed of diverse African ethnic groups. In addition, there are people of Asian, American and European descent. The present-day food culture has organically developed over time through people's interaction with each other and with the environment. The environments where people live and their ancestral origins influence food culture and practices, with foods and food cultures passed on from one generation to another. Thus, the food culture in Uganda has its roots in the diversity of its people, their cultures, and the environment.

The link between food security and culture

Culture in its broad sense is the way of life of a particular society. It refers to the roles, uses, position, and symbolism of individuals, ideas and objects such as food, in all aspects of a society; including beliefs, values, norms, taboos, institutions, language, rituals and art. Some cultural practices can directly or indirectly influence the food security of a given society as culture prescribes the interactions between people, between people and land, and between people and food. (Bwenkya 2008)

Households in Uganda, apart from those in urban areas, produce their own food. Most households have three meals a

day: a light breakfast (composed of a cup of tea or porridge), lunch and supper. Supper is usually the main meal of the day. Among the Ateso, the day typically starts with a drink of an opaque millet beer (*ajon*) and a baked sweet potato (*amukaru*) or cassava, eaten either at home or in the field during work.

Food is regarded first and foremost as a necessity to support physical activity and survival, and the nutrition and health of the people. However, food also plays a major secondary role in socio-cultural activities and to a certain extent defines ethnic identity. Within different ethnic groups, different foods have particular meanings and symbolism attached to them. For example, within the ethnic groups in the central and western parts of Uganda, insects such as grasshoppers and white ants are eaten as a delicacy and can be preserved for use until the next season, thus contributing to the food and nutritional security of such communities. (Bwenkya 2008)

Among the pastoral ethnic groups like the Banyankole, Ateso and Karimojong, milk, meat, blood and milk products are central to their food culture. The Karimojong for example, bleed healthy cows from the jugular vein. The blood is collected in a calabash and mixed with milk before cooking. The cooked blood and milk meal is considered a delicacy, and mainly reserved for the men. Among the Banyakole however, bleeding of cattle for the same purpose is a dying practice as farmers adopt modern animal husbandry practices and non-indigenous cattle breeds. Nonetheless, the Banyankole still collect blood (*orwamba*) from slaughtered animals, which is cooked on its own or added to a meat stew.

According to Byarugaba (1987), other ethnic groups also hold particular foods in high regard. For example the Baganda value the banana (*matooke*) so highly that the word for food (*emere*) is largely synonymous with banana. Among the ethnic groups in the western and south-western parts of the country like the Banyoro, Batooro, Bakiga and Bagungu and the Nilotic and Sudanic people in the north and north-west, cereals such as millet and sorghum, and roots and tubers such as potatoes and cassava, are treasured. Thus on special occasions such as marriage ceremonies, special meals or delicacies like stiff millet porridge (*atapor akaro*), millet or sorghum beer and *obushera*, a non-alcoholic malted and fermented drink, are served. Among these ethnic groups, a woman's culinary skills are often judged by how well she makes *akaro* or *atap*. (Bwenkya 2008)

Although differences in ethnic food habits do exist, they have changed over time as people migrate, intermarry and interact. This has resulted in an adoption of new cultures and the modification of existing ones. For example, with the advent of the early traders and colonialists new foods such as spices, non-indigenous fruits, wheat, rice and maize were introduced. According to Rutishauser, by the 1960s leavened bread had become popular because its ingredients were familiar and readily available. Maize and rice are other examples of introduced foods, which in various forms have increasingly

contributed a major proportion of peoples' diets. Such foods have therefore been adopted and acculturated within the Ugandan cultural setting to the extent that they are likewise subjected to indigenous traditional cultural food preparation practices such as malting, fermentation and brewing. Byaruhanga (2008)

Poverty and food insecurity

Poverty is defined by poor people as more than just the lack of incomes; it is also the lack of the means to satisfy basic, social needs, as well as a feeling of powerlessness to break out of the cycle of poverty and insecurity of person and property. Common features of a poor household include few assets for production; insufficient food; inadequate income to meet health care and education costs and to obtain basic household necessities; many dependants; vulnerability; poor health; or a lack of social support. This definition illustrates the complexity and multi-dimensional nature of poverty, emphasizing that poverty is about more than income and expenditure data (UNDP 2012).

According to the Household Survey data (2008), 44% of Ugandans are unable to meet their basic needs and are living below the absolute poverty line, while 25% of the population cannot even meet their daily food requirements and live below the food poverty line. Although, in absolute terms, poverty has decreased by 21% since 1992, close to 9 million Ugandans still live below the absolute poverty line and they cannot afford having two meals a day.

The principal dimensions of poverty in Uganda include location, gender, livelihood and seasonality. Although commonalities exist, poverty differs in its nature, extent, and trends between regions. Household Survey data of 2013 indicate that in the East, which has the greatest proportion of the population, 54% of the people live in absolute poverty, compared to 28% in the Central region. Whereas the North is the poorest in terms of development indicators, in terms of welfare indicators, the Western region fared worst, although this region has the second highest income levels and fertile soils that would supported food security. Further, trends in absolute poverty indicate that in the East and the North, poverty has declined by only 8% and 13%, respectively, since 1992, compared to a decrease of 39% in the Central region. However, the majority of local people, perceive that in relative terms "the rich are getting richer and the poor are getting poorer".

Poverty is mainly a rural phenomenon as 48% of the rural population is below the absolute poverty line who can even skip food a number of times in a week, compared with 16% of urban dwellers. Further, poverty has decreased by 43% in urban areas and only by 18% in rural areas in Uganda since 2000. Since more than 85% of the population live in rural areas, the interventions to be implemented to ensure food security would bring about significant reductions in poverty. Statistics show that one of the main ways of reducing poverty

in rural areas of Uganda has been the ability to produce and market traditional cash crops, specifically coffee.

Households in the food crop sector experienced only modest rates of poverty reduction compared to those producing cash crops. It is possible that women have not benefited as much as men from the decreases in absolute poverty noted in recent years. First, women do not have as many opportunities for social and economic development in Ugandan society, particularly in rural areas. Second, the division of labor in agriculture is complex, varying with the season and ethnic group. Therefore, while women may partake in decision making, they have little control of the resources or the income realized from sales. Third, food production is the domain of women whereas men in general concentrate on livestock and cash crops, which have a higher potential for income generation. Fourth, the increasing workload of women in cultivating cash crops and the subsequently reduced cultivation and variety of household food crops may in some cases result in decreasing the welfare of the family although household incomes have increased.

It is obvious that poverty eradication must focus on transforming poor farmers, both men and women, from producing predominantly for their own households to producing for the market. The focus on subsistence farmers is to re-orient them towards commercial agriculture in order to have a significant impact on poverty eradication in the country.

Poverty eradication is a fundamental objective of Uganda's development strategy, in which government of Uganda has resolved to reduce the proportion of the population living in absolute poverty from the level of 44% since 1997 to below 10% by the year 2017. Detailed programmes for achieving this goal are being developed by Government. The wealth creation which has been revised and updated this year, is the guiding framework for eradicating mass poverty in Uganda. It adopts a multi-sectoral approach, recognizing the multi-dimensional nature of poverty and the inter linkages between influencing factors. The revised wealth creation has 4 main goals: Creating a framework for rapid economic growth and structural transformation; ensuring good governance and security, directly increasing the ability of the poor to raise incomes to ensure food security; and directly increasing the quality of life of the poor (PMA 2000).

In order to eradicate poverty effectively, priority action areas have been identified under the Wealth Creation, which include primary health care, roads, primary education and rural water, and the transformation of agriculture. This focus on agriculture provides an opportunity for poverty reduction because the sector engages approximately 80% of the Ugandan workforce, the majority of who are poor. However it is unfortunate that food security is not included.

Who are the most vulnerable to poverty and food insecurity?

According to UNDP (2011), local people defined vulnerability as the likelihood that an event could easily

predispose a person or group of people to becoming poorer. Those who are vulnerable to increasing poverty, and who have the greatest difficulty in moving out of poverty are often disadvantaged in their ability to access developmental interventions and community activities to sustain their lives. According to the above report, such people were identified as follows: Women, many women have limited economic opportunities especially in rural settings due to their role in society and their relationships with men, widows and female-headed households which are always illiterate and male youth because they ever depending on their parents. They are disaffected due to the lack of opportunities for financial gain and consequently, social well-being. Households with large families, many dependants place a strain on meagre household resources, and people dependent on a relatively vulnerable source of income. This group includes fishermen, nomads and small-scale farmers who rely on growing one low-value crop for sale, casual laborers. These people rely on limited, seasonal work for other farmer Others categories of vulnerable people are: orphans and neglected children, the disabled, socially isolated the sick.

When discussing the strategy to reduce poverty and food insecurity, it may be useful to categories the poor into two groups: The destitute, these are people who do not have hope, and who have no assets. They need safety net interventions and will benefit from more general interventions indirectly through improved local well-being and existing social networks. Secondary are the poor, this group represents the majority of those living in poverty and food insecurity. They have the will and the desire to improve and sustain their livelihoods, but they express frustration in their attempts to do so because of limited assets, skills and knowledge; restricted access to services, infrastructure and information; or social disadvantage. This group needs interventions that are inclusive, that build on their existing resources and activities, and that provide the impetus for development. This group also includes those who are particularly vulnerable to poverty and food insecurity. In these cases, poverty reduction and food security interventions must be specifically targeted initially (PMA 2000).

Based on the fact that many members of vulnerable groups engage in subsistence agriculture, government interventions must be inclusive and mindful of the vulnerable and disadvantaged such that they can be food secure. The Public sector interventions must be designed and implemented so that all groups are able to participate and benefit - particularly so that any group of farmers is not barred in any way from fully benefiting. Further, isolation causes vulnerability to poverty and food insecurity. Some communities or districts are isolated in terms of distance, poor roads and transport, resource allocation, or insecurity. The consequences are lack of communication and information, restricted access to, and quality of, services, limited income generating and marketing opportunities, and consequently, exclusion from development processes. Further, certain groups of people are excluded by,

or exclude themselves from, community affairs. Consequently such people food insecure because they lack information, social support and they do not benefit from community development (UNDP 2011)

All in the main causes food insecurity in rural house hold were; poor farmers stated that poverty and food insecurity was due to low production – crops, livestock and fish catch. They were (i) unable to provide sufficient food for the household throughout the year; (ii) unable to supply basic household essentials or to afford education and medical costs; and (iii) sometimes forced to sell assets such as land, livestock and produce meant for household consumption, in order to meet basic household needs (PMA 1999)

Poverty, Gender and Food Insecurity

While poverty has declined across Uganda from 56 percent in 1992 to 31 percent in 2006, improvements in the prevalence of poverty are largely attributable to economic growth rather than income distribution and welfare improvement. In fact, income inequality between the wealthy and the poor has steadily risen. Gender inequality is significantly intertwined with poverty and food insecurity in Uganda and has been identified as a primary reason for the persistent poverty. Poverty is more gendered now because income inequality is rising and women fundamentally lack access to resources such as land and capital. Gender inequality also exacerbates food insecurity for women and children. While 80 percent of women contribute labour for food production, they own less than 8 percent of the land on which to farm. Men earn significantly more than women and spend more of their income on non-food items, while women are left to close the food security gap. Women are the primary caregivers in families but have the least decision making power; as a result, they lack control over their fertility, reproductive health and time (WFP 2012).

In Uganda today, the majority of women lag behind men in terms of education level and income earnings. Women have limited economic opportunities due to their societal roles and responsibilities, their low social status, relationships with men, lack of ownership and access to productive assets, low participation in decision making, and high workload. However, in situations where women are increasingly seeking employment outside the home so as to acquire incomes to cater for their basic needs of life including food for their families, this economic empowerment has not been accompanied by concomitant social empowerment in all almost all sectors of the economy and where it has worked out the women are the minority (world Bank 2015).

There is a clear division of labor between men and women. Women are more involved in reproductive activities, particularly care of the family, whereas men are more involved in community activities. Both men and women are involved in production. To be very general, men are involved in large livestock keeping, fishing and cash crop production,

whereas women are involved in food crop production but the end of the day what is sold belongs to a man (PEAP 2001).

Intra-household benefit sharing from the sale of produce does not favor women. Thus, increases in household income and food security do not necessarily mean increases in access to income for female members, or improved quality of life for all members, especially in terms of the nutrition of children. In addition, access, control, ownership and inheritance of assets also favors men, although the extent of the inequality varies with location. Most women are dependent on their husband or father for access to productive assets and income. In general, women do not own land, although they have access for growing food (PMA 1999)

Women face barriers to participation in community development activities that include refusal by husbands, discrimination, subordinate roles, weak leaders, lack of mobilization, lack of time and failure to see the benefit of their participation as well as eating the nutritious foods. Further, consultations with women also revealed that they are discriminated against in land and domestic disputes. Within the household, men make decisions concerning economic activities, involving women to an extent that differs regionally and depends on the level of understanding and co-operation within the household. In situations where a woman heading a household has access to assets, she is often able to develop and may be better off than married women who are constrained by the existing unequal power relations within the household. However, in cases where the woman has many children and few productive assets – possibly grabbed by in-laws upon the death of the husband – she may be particularly vulnerable to poverty food insecurity (FAO 2013).

Given the food security and gender inequalities in Uganda, operationalizing food security therefore, the food security policy would require special considerations to gender issues. All interventions must be gender-responsive and gender-focused such that both men and women are included. Therefore, intervention planning and implementation should carefully consider men's and women's participation, roles and responsibilities and workloads, as well as control of, and access to, resources and existing power relations that may prohibit participation and benefit. Gender analyses should be suggested in order to identify enabling factors that will ensure that information is provided to, and utilized by, both men and women, and that will motivate women as well as men to participate and benefit. In addition, an important role for community development practitioners is to foster the household to act as a unit in which the strengths and contributions of all members are recognized and there is a realization that by working together as a team, poverty and food insecurity can be reduced most effectively (UNDP 2013)

Poverty in Uganda is becoming increasingly gendered because the Government of Uganda's pro-growth policies benefit those with a minimal asset base from which to build greater wealth. Because poor women fundamentally lack access to

and control over productive assets, they are essentially excluded from this form of economic progress. For these same reasons, income inequalities between men and women are likely becoming more pronounced, further exacerbating the risk of malnutrition in children as women's purchasing power remains low or declines further. Moreover, data for Uganda clearly show that when men control income, male-headed households are more likely to spend on non-food items and contribute less to household food security.

The 2006 UDHS also found that over 75 percent of women who worked for wages earned less than their husbands. Women's lower purchasing power is a consequence of lower wages, more unpaid work, fewer work opportunities for which women have skills, and lack of time and capital to generate income (The Analysis of the Nutrition Situation in Uganda 2006)

In Uganda, women's lack of time and high fertility rates are two critical factors that undermine health and nutrition outcomes in their children. Uganda's high rates of domestic violence and adolescent pregnancies attest to the fact that gender inequality is deep rooted. Taking these factors together, gender inequality substantially undermines women's capabilities in achieving and ensuring food security for their families.

Land ownership and management: According to UDHS 2006 Women can access customary land mainly through marriage or male relatives. While access to land tenure is tenuous for men, it is even more so for women. This lack of security over land tenure significantly undermines women's capabilities in subsistence farming and food production, and thereby affecting food security. • *Early marriage:* This is still practiced, and women and girls have little control over whom and when they marry. The practice of paying a bride-price also severely curtails a woman's ability to divorce or leave her husband because her family would have to repay the bride-price to the husband's family. • *Teenage pregnancies:* This trend has led to some adolescent girls having children without the rights and protections of marriage, which prevents them from obtaining child support from the father. • *Married women's lack control over their sexuality and fertility:* This carries adverse consequences for them in terms of childbearing and fertility, their reproductive health and their exposure to HIV/AIDS. Women also lack rights to their children; customary practice dictates that children are born to their paternal families, and paternal custody of children is favored. • *High prevalence of gender-based, domestic and sexual violence:* The 2006 UDHS reported that 68 percent of women experienced some form of violence, nearly 50 percent experienced physical violence perpetrated by an intimate partner. • *The practice of widow inheritance:* If a woman's husband dies, she might be forced to marry her husband's brother. Taken together, these inequalities and realities form the backdrop against which poverty, food insecurity, malnutrition and morbidity prevail.

Patriarchal. Thus while women grow most of the food, they do not own the land and in some cases they have to obtain permission to access land for food production. At times women do not even have full rights to the food they produce. Cultural issues also influence nutrition since the distribution of food and food taboos are culturally determined along age and gender lines. Byenkya (2008).

HIV/AIDS

Few crises have affected human health and threatened social and economic development like HIV/AIDS. As infection rates continue to escalate around the world particularly in countries with large rural populations and widespread small-scale agriculture the pandemic is having a significant impact on food security and nutrition. HIV/AIDS typically strikes the household's most productive members first. When these people become ill, there is an immediate strain on the family's ability to work, feed them and provide care (WHO 2014) As the disease progresses, it can become even harder for a family to cope, especially as resources are drained for instance, valuable assets, such as livestock and tools, may need to be sold in order to pay for food and medical expenses and poverty advances.

Without food or income, some family members may migrate in search of work, increasing their chances of contracting HIV and bringing it back home. For others, commercial sex may be their only option to feed and support their family. Food insecurity also leads to malnutrition, which can aggravate and accelerate the development of AIDS. Likewise, the disease itself can contribute to malnutrition by reducing appetite, interfering with nutrient absorption, and making additional demands on the body's nutritional status (WHO 2014).

HIV/AIDS has affected household/family relations in different ways, including strengthening or weakening some cultural practices. The morbidity of working adults in households affects the total labour available for the household farm and its division between adults and children. It also affects the division of labour between men and women.

Culture in most Ugandan societies dictates that women care for the sick. In households stricken with AIDS women spend a lot of time taking care of the patients. Consequently, labour for specific agricultural tasks are significantly reduced, which steadily reduces the households' capacity to produce or access enough food. In serious cases where HIV/AIDS has caused death of both mother and father, households and indeed communities have become highly food insecure, leaving many children malnourished. The AIDS epidemic continues to impact negatively on agricultural production. It has the impact of loss of skilled and unskilled labour, that would otherwise be engaged in production, research, extension services and in policy formulation and implementation. It has a direct impact on loss of assets and use savings for medical care and funeral expenses. AIDS mitigation measures therefore, will have a positive impact on agricultural production, household incomes and peoples' welfare. Malaria, which is also endemic in most

parts of the counties also contributes to decreased human productivity and capacity to generate incomes PMA (1999)

Use of Hand Hoe: According to Uganda food security outlook, 2009, In spite of the many efforts in place to improve food production, the use of the hand hoe is still predominant in Uganda as the main tool for opening up gardens. It cannot open enough land to produce enough food for the current population. The continued use of the hand hoe has discouraged the able bodied youth from taking up food production leaving the task to elderly persons who constitute less than 30% of the population Mpuga,P. (2007).

Corruption is now the order of the day in public domain. It is very much part of the continuing debates on global public ethics and concerns about standards of behavior in the government sector as well as in international business transactions. Corruption thrives in societies where institutions of government are weak. Corruption widens the already yawning gap between the rich and the poor in many of the countries. It inhibits social and economic development, impacting negatively on attempts by international as well as regional development institutions to fight hunger and famine coherently and systematically. It distorts market operations. It deprives ordinary citizens of the benefits that should accrue to them, such as freedom from hunger in an age of plenty. Poverty is on the increase in Sub-Saharan Africa (SSA) and various forms of corruption threaten to undermine the impact of investments made to meet the Millennium Development Goals (MDGs) in the continent. The number of people who live on less than two dollars a day has doubled from 292 million in 1981 to nearly 555 million in 2005.

Poverty is one of the major catalysts of food insecurity in Africa. This is because poverty constrains the ability of farming households to invest in productive assets and agricultural technologies, resulting in insufficient agricultural productivity and poor nutrition. People living on less than \$1 per day are unable afford all of the staple foods they require, and meat and fish consumption for many poor Africans remains a luxury. Such people will not be able to adopt new technologies that have the potential of boosting productivity because such technologies are usually costly, hence the resultant food insecurity cycle.

Although the share of the population living in extreme poverty in SSA declined by more than 10 percent to 48 percent between 1999 and 2008, SSA still has the highest concentration of the ultra-poor in the world (Ahmed et al., 2007). Despite the rapid economic growth rate in SSA over the past decade, there is historical evidence that this has not been converted into poverty reduction as effectively as in other developing regions, like East Asia and the Pacific (Fosu, 2009). Poverty is also compounded by factors such as conflicts, disease epidemics, and climate change that manifest itself in the form of droughts, flooding, and high temperatures, among others.

Conflict and food security are inextricably linked, each triggering and reinforcing the other. In order words, food insecurity is both a cause and an effect of conflict. Fluctuations in agricultural production and access to new technologies can be a source of social upheaval, violent attacks, and even war. The resulting disruption can create instability in food availability and access. Food production inevitably falls during conflicts. With each shock to the food supply, prices inch up. If local markets can receive supplies from markets farther away, the upward price pressure eases, but that depends on the type of conflict and transport infrastructure. When the warring parties cut local communities from supplies from other areas, local food insecurity intensifies (Block, 2010). In northern Uganda for example, the Lord's Resistance Army War left a number of Households Homeless. Agricultural fields were destroyed and over 30 years no agricultural activity was taking place. People were leaving in War tone areas being fed by the international organizations for example FAO and WFO. This is the fundamental reason why northern Uganda is food insecure.

Unbalanced technology supply and effective demand

In many African countries, the increasing supply of new technologies meets decreasing acceptance by producers, and the growing evidence of profitable returns to research investments is increasingly countered by studies that show that technologies are not profitable to end users. As a result of a growing donor pressures to demonstrate impacts of agricultural R&D, several studies have been conducted to document impacts and estimate rates of return (ROR) to research investment in Africa, and with the exception of a few cases, most impact studies report high ROR (above 12 percent) to agricultural research investments in Africa (United States Agency for International Development (USAID), 2011). Low effective demand for technology by African farmers implies that a technology developed by the research system does not reach the end users, is not affordable to them, has not proven profitable for them, and is not appropriate to their own farming systems. Both technological considerations (e.g., performance and adaptability of technology) and non-technological considerations (institutions, policies, infrastructure, social networks and so on) play important roles in the realization of profits and the decision to adopt or not to adopt a technology (USAID, 2011).

Food price volatility

Food systems are especially prone to volatile prices, a major source of instability in food supply and access. Africa's trade expansion in recent decades has increased the continent's exposure to fluctuations in international markets. After several decades of relative stability, global food prices have swung dramatically since 2007. Prices surged higher in both 2007/2008 and 2010/2011, responding to adverse weather and poor harvest in some major exporting countries, a rise in

oil prices, diversion of crops into biofuels, and short-sighted policy responses. Countries that import their main staples, such as Liberia and Sierra Leone, felt the more recent global price effects more than did countries where staples are supplied by local farmers, as in Malawi and Uganda. In Southern Africa, good maize harvests held down food prices and in Namibia and Zambia food price inflation was lower than overall inflation (UNDP, 2012).

Although volatile international food markets have continued to affect Africa's food systems, the seasonal ups and downs in local food prices probably have a greater impact (Cornia et al., 2012). This seasonal cycle too often have implications for Africa's well-being (FAO, 2012). When food prices soar, social tensions can flare into violence. Food riots in urban areas show how powerless citizens can react to a perceived injustice. Recent hikes in food prices sparked demonstrations and riots in Burkina Faso, Cameroon, Côte d'Ivoire, Guinea, Mozambique, Senegal, and Uganda, with thousands taking to the streets. Studies show a positive long-term correlation between international food prices and anti-government protests and civil conflict in low-income countries (Arezki and Brückner, 2011). The phenomenon is not new. Liberia was fairly calm until 1980, when its people ousted the president in the wake of food price riots. Weather events also pushed up prices in some countries (floods in Benin and drought in Kenya), and food markets were affected by political instability in others such as in Côte d'Ivoire and Madagascar.

Across the continent, smallholder farmers sell part of their food output immediately after harvest, when prices are lowest to cover expenses and repay debts incurred during the lean season. Some 6–8 months later, after exhausting their food stocks, farmers start buying food supplies just when prices are highest, using money obtained by borrowing, selling small animals, doing casual work, or enrolling in food aid programmes. The consequences are seasonal fluctuations in food prices and malnutrition.

Weak agriculture extension system

The extension service that serves as a conduit for proven agricultural technologies from research to the end users with a feedback mechanism is defective in most African countries. The adoption of modern technologies has not been quite impressive in Africa and this contributes significantly to food insecurity. Consequently, many technologies that would have promoted food security are not adopted either because they do not fit into the priority needs of farmers or that they are too costly to adopt or worst still that farmers do not see any benefit from the technology in the short, medium, and long terms. In other circumstances, the nature of the technology as well as the channel and methods of communication are not appropriate leading to lack of adoption or outright rejection. In some other cases, the extension personnel do not take the technologies to the farmers because they are very few, with one extension agent to 25,000 farmers in most African

countries compared with 1:400 in Europe. These extension agents in most cases are not well remunerated and equipped to carry out their duties effectively (Chukwuone et al., 2006).

Farmers who grow food for their own consumption are usually the most affected as they are forced to abandon their farms and take refuge elsewhere (United Nations Development Programme (UNDP), 2012). Violent conflicts, as well as ethnic unrest involving fights over water and grazing resources, the stealing of women and livestock, and quarrels over border lines, have contributed to the displacement of people, disruption of transportation, and market transactions and subsequently, lack of access to food (Fosu, 2009) as is the case in Central and East Africa. SSA is responsible for 88 percent of the global conflict death toll between 1990 and 2007, in addition to over 9 million refugees and internally displaced people (Folaranmi, 2012).

Corruption and lack of government interest and investment are key players that must be addressed to solve the problem of malnutrition in Sub-Saharan Africa. High levels of corruption stand at the epicenter of the food insecurity problems in Uganda. Corrupt governments cannot be expected to develop and implement sound long-term agricultural policies, including land tenure and water management, against a background of institutional instability. Poor governance and corruption in Uganda is leading to widespread hunger in the region. It has been indicated that the country has failed to ensure the citizen's right to food and record amongst the highest child malnutrition and maternal mortality rates .

All in all PMA (1999) has summarized the constraints of food security that growth in the agricultural sector in Uganda during the 1970s and 1980s was hampered by a series of policy and structural constraints related to such factors as: (i) government and parastatal monopolistic control of food crop marketing and pricing that inhibited incentives to improve the quality and quantity of output; (ii) inadequate infrastructural facilities; (iii) shortages of foreign exchange, for importation of critical agricultural inputs and high and unpredictable inflation; and (iv) insecurity. In addition, there were institutional constraints, which included; (i) ineffective and inefficient government research and extension services; and (ii) segmented, inefficient and discriminatory markets for capital, labour, land and agricultural inputs. Most of the above constraints have been removed during the implementation of the Agricultural Policy Agenda of the Economic Recovery Programme during the past decade. However, there still exist fundamental constraints affecting growth in the sector arising either as uncompleted agenda from the recovery programme or as deep-rooted constraints that could not be addressed sufficiently. A brief description of these constraints is given in the following sections.

Marketing Infrastructure Constraints

Inadequacy of physical infrastructure such as feeder roads, communication facilities, power supply, education and health facilities, water supply and market infrastructure continue to

constrain marketing of food agricultural produce and investments in rural areas and are responsible for the high market transaction costs.

Technology Generation and Dissemination

The major constraints food security in this category include non-availability of high-yielding technological packages, efficient and cost-effective cultivation technology, low adoption rates of appropriate technology due to weak research, extension and farmer linkages, absence of effective delivery of extension services to farmers.

Financial Constraints

At present both investment finance and working capital are the main bottlenecks for smallholder agricultural production. Yet creation and sustenance of a dynamic and productive modern agricultural sector would require on a continuous basis the uptake of new, more productive and high-yielding technology by farmers. Thus creation of viable and sustainable rural financial systems is one of the key elements to agricultural development because most of the productive and high-yielding technologies have to be made available to farmers only as purchased off-farm inputs.

Land Tenure and Policy

Although a fairly comprehensive Land Act was enacted by Parliament in 1998, it still remains to be implemented to bring about the desired changes in land tenure systems, land policy and land registration as well as land administration improvements. Thus, the constraints of the land tenure systems that are not conducive to the emergence of land markets persist. Also the issue of land ownership and inheritance by women who are key stakeholders in agricultural production has not yet been resolved. In addition, the lack of a centralized land registry results in difficulties in getting land title deeds in rural areas.

Farmers' Organizations

At present there are no effective grassroots/village-based, commercially oriented institutions capable of mobilizing the production capacity of small producers for the production of income generating commodities. The co-operative movement and other farmers' organizations are yet to be empowered, moved away from political hegemony, donor dependency and be allowed to operate independently and on a commercial basis.

Human Resource Constraints

The majority of Ugandan farmers are illiterate. There is therefore an urgent need to educate and empower them to undertake commercial enterprises efficiently and profitably. Fostering these skills is the surest way to economic growth and overall food security development.

Information Constraints

The availability of statistics regarding food crops is unsatisfactory. Many agencies are involved in the collection

and dissemination of agricultural data and they are not well co-ordinate. Organizational and financial as well as managerial deficiencies are acute in most of these institutions. Also the potential users do not know the work of the various agencies. There is therefore an urgent need for the establishment of information services that is acceptable to producers and market operators.

On-farm and Off-farm Storage

Post-harvest losses, particularly for food crops, are very high, aggravating the food insecurity problem. In addition to timely harvesting, proper drying, protection from infestation with diseases and pests and storage are critically important and should be introduced. Today, few farmers have well-constructed storage facilities in rural areas. Off-farm storage facilities owned by traders, millers, processors, and exporters are generally lacking and need to be addressed.

Environmental Degradation

Increase in population pressure, intensive utilization of land including restricted grazing, soil erosion, deforestation and the drainage of swamps have resulted in considerable environmental degradation and low productivity in many areas of the country. Therefore, environmentally friendly, socially acceptable and affordable technologies should be developed and disseminated for efficient use of natural resources in rural areas.

III. METHODS AND TECHNIQUES

The study adopted mixed method because some data could be quantified that is, data from the questionnaire guide, while some data could not be easily quantified for example the data

from interview guide. It was carried out in between June to December.

Sample size determination and sampling method

Following conventionally rule applied by Kathuri & Palls (1993) which states that, while carrying a survey a major group of sample size should carry a minimum of 100 respondents while the minor group a minimum of 20 respondents, a sample size of 100 respondents representing major group from every region was selected and a sample size of 20 respondents was also selected representing minor group from every region of the study. In every district a minimum of 33 respondents was selected to make equal representation of a major group and 6 respondents from every district to represent a minimum of number of minor group for equal representation of every district. In total 240 respondents (rural household heads) was selected in both regions. Purposive sampling was used to select authorities (key informants) minor group, who are in line of area of study and systematic sampling was also used to select respondents in the households (counting every fifth household).

Data Analysis

SPSS was used for quantitative data analysis. The descriptive statistical measures and analytical techniques that were used at various levels include percentages and chi-square. Qualitatively, data was analyzed using Interpretational Analysis, and General Content Analysis

IV. RESULTS DISCUSSION

The key determinants of food security in rural households are presented in tables 1-6 below

Table 1: District * size of farm land in acres Cross tabulation

		farm land in acres						Total	
		1-2	3-4	5-6	7-8	9-10	Others		
District	Arua	Count	18	7	1	1	3	2	32
		% of Total	10.0%	3.9%	.6%	.6%	1.7%	1.1%	17.8%
	Buhweju	Count	9	8	7	1	0	0	25
		% of Total	5.0%	4.4%	3.9%	.6%	.0%	.0%	13.9%
	Ibanda	Count	14	11	1	1	0	1	28
		% of Total	7.8%	6.1%	.6%	.6%	.0%	.6%	15.6%
	Kasese	Count	17	7	3	3	1	0	31
		% of Total	9.4%	3.9%	1.7%	1.7%	.6%	.0%	17.2%
	Lira	Count	16	9	4	2	1	0	32
		% of Total	8.9%	5.0%	2.2%	1.1%	.6%	.0%	17.8%
	Nwoya	Count	15	10	4	2	1	0	32
		% of Total	8.3%	5.6%	2.2%	1.1%	.6%	.0%	17.8%
Total	Count	89	52	20	10	6	3	180	
	% of Total	49.4%	28.9%	11.1%	5.6%	3.3%	1.7%	100.0%	

Source: Primary data 2016

Land shortage: The results revealed that almost 50% of household heads have got 1-2 acres of land which indicated, there is shortage of land which meant that majority of households were growing their food on small pieces of land and for many times this method makes the land lose its fertility. Therefore the produce is also very low to ensure food security.

The Community Development Officer (CDO) in Ibanda district Western Uganda on 4/6/2016 said:

“Majority of households are renting land from neighbors where they would grow beans and millet because they have limited land to grow such type of food crops that can last long .The little land they have there are for banana plantation and you

cannot plant millet with bananas. They are paying back with half the harvest, which in most cases not much. Households lament that the enclosure (fencing) of land is becoming increasingly difficult for them to borrow land. Households with more land have shifted from growing cereals to perennial crops such as coffee and dairy farming. This means that owners use most of their land thereby depriving the land-poor of access through borrowing. This practice has heightened the food security crisis in the area.”

This suggests that because of shortage land for food production, household heads rent land.

Table 2: If family members fail to eat certain food because culture prohibits so * District Cross tabulation

		District						Total
		Arua	Buhweju	Ibanda	Kasese	Lira	Nwoya	
Yes	Count	3	23	6	15	4	4	55
	% of Total	1.7%	13.3%	3.5%	8.7%	2.3%	2.3%	31.8%
No	Count	27	2	23	12	27	27	118
	% of Total	15.6%	1.2%	13.3%	6.9%	15.6%	15.6%	68.2%
Total	Count	30	25	29	27	31	31	173
	% of Total	17.3%	14.5%	16.8%	15.6%	17.9%	17.9%	100.0%

Source: Primary data 2016

Culture affects food security: It was observed that the majority (31.8%) of the respondents fail to eat certain types of food because culture prohibits so and these were women. Through an interview was revealed that, women are not supposed to eat chicken, grass hoppers, flying termites (Enshwa), kidneys, hearts of any domestic animal because it is against culture and such types of food are highly nutritious. All these foods are meant for a man especially in Western-Uganda.

If i find that my wife has eaten a tongue of my cow or goat that is the time she will

pack her things and go back to her parents. Because there must be a man and woman in the family. Now if she eats my tongue or enkokonkuru (gizzard of the hen) who would have married who?”

(Village leader in Kabagoma village Ruhoka Sub county Ibanda district interview on 17/7/2016). This suggested that because of culture, women are food insecure.

Table 3: The most farming technology used in tilling the land * District Cross tabulation

		District						Total
		Arua	Buhweju	Ibanda	Kasese	Lira	Nwoya	
Hand hoe	Count	34	24	26	25	24	24	157
	% of Total	18.1%	12.8%	13.8%	13.3%	12.8%	12.8%	83.5%
Animal	Count	0	1	1	6	9	9	26
	% of Total	.0%	.5%	.5%	3.2%	4.8%	4.8%	13.8%
Tractor	Count	0	0	1	2	1	1	5
	% of Total	.0%	.0%	.5%	1.1%	.5%	.5%	2.7%
Total	Count	34	25	28	33	34	34	188

Source: Primary data 2016

Hand hoe technology in food production: It was revealed that the most farming technology used in tilling the land (85.5%) is hand hoe. In an interview with Community Development officer Ishongororo Sub county in Ibanda district in Western region on 19/7/2016 he said:

“People here use hoes and pangas as major tools for agriculture because they have very small plots land those who have big land

they cannot afford money to buy tractors to use on their land. Such people end up renting land to those that do not have enough land for food production.”

Technology in many occasions affects food production. The more advanced the technology is, the more the food that is produced.

Table 4: Use fertilizer * District Cross tabulation

		District						Total
		Arua	Buhweju	Ibanda	Kasese	Lira	Nwoya	
Yes	Count	3	0	14	11	3	3	34
	% of Total	1.6%	.0%	7.7%	6.0%	1.6%	1.6%	18.7%
No	Count	30	24	14	20	30	30	148
	% of Total	16.5%	13.2%	7.7%	11.0%	16.5%	16.5%	81.3%
Total	Count	33	24	28	31	33	33	182
	% of Total	18.1%	13.2%	15.4%	17.0%	18.1%	18.1%	100.0%

Source: Primary data 2016

Lack of fertilizer application: The results showed that majority (85.5%) of household heads do not use fertilizer.

Table 5: Whether extension staff visit households during growing season to give you farm advice * District Cross tabulation

		District						Total
		Arua	Buhweju	Ibanda	Kasese	Lira	Nwoya	
Yes	Count	22	0	2	3	14	14	55
	% of Total	11.8%	.0%	1.1%	1.6%	7.5%	7.5%	29.4%
No	Count	12	24	26	30	20	20	132
	% of Total	6.4%	12.8%	13.9%	16.0%	10.7%	10.7%	70.6%
Total	Count	34	24	28	33	34	34	187
	% of Total	18.2%	12.8%	15.0%	17.6%	18.2%	18.2%	100.0%

Source: Primary data 2016

Lack of advice from agricultural extension: The research showed that majority (70%) are not visited by extension staff during growing season to give household heads farming advice.

Table 7: Type of family member that is more engaged in food production * District Cross tabulation

		District						Total
		Arua	Buhweju	Ibanda	Kasese	Lira	Nwoya	
Woman	Count	19	6	5	16	17	17	80
	% of Total	10.1%	3.2%	2.7%	8.5%	9.0%	9.0%	42.6%
Man	Count	14	15	13	13	11	11	77
	% of Total	7.4%	8.0%	6.9%	6.9%	5.9%	5.9%	41.0%
Children	Count	0	4	7	4	5	5	25
	% of Total	.0%	2.1%	3.7%	2.1%	2.7%	2.7%	13.3%
Others	Count	1	0	3	0	1	1	6
	% of Total	.5%	.0%	1.6%	.0%	.5%	.5%	3.2%
Total	Count	34	25	28	33	34	34	188
	% of Total	18.1%	13.3%	14.9%	17.6%	18.1%	18.1%	100.0%

Source: Primary data 2016

Shortage of agricultural labor force: Research findings indicated that mainly (42.6%), women are engaged in food production

“A woman has to take care of domestic animals, the children and also the husband. She wakes up very early goes to the farm, collect firewood and she makes sure that food is ready at 7:00am. Many

men wake up just to find breakfast ready and they go to the nearby centers to take alcohol. All the household work is left to the woman failure to do all this she ends up being beaten by her husband”.

(Sub-county Chief of Katwe Village, Katwe Sub County in Kasese district interviewed on 6/6/2016).

Table 6: Whether household heads have proper food storage facilities * District Cross tabulation

		District						Total
		Arua	Buhweju	Ibanda	Kasese	Lira	Nwoya	
Yes	Count	14	2	6	2	10	10	44
	% of Total	7.7%	1.1%	3.3%	1.1%	5.5%	5.5%	24.0%
No	Count	19	22	22	30	23	23	139
	% of Total	10.4%	12.0%	12.0%	16.4%	12.6%	12.6%	76.0%
Total	Count	33	24	28	32	33	33	183
	% of Total	18.0%	13.1%	15.3%	17.5%	18.0%	18.0%	100.0%

Source: Primary data 2016

Lack of storage facilities: It was revealed that majority (76.0%) of household heads do not have proper food storage facilities for their agricultural products.

Discussion

Limited or small piece of land affects food security: Findings revealed majority of household heads have small pieces of land. This means these small pieces of land are infertile because they are continuously and excessively cultivated for agricultural food production leading to low yields. This agrees Dasgupta, (2007) that because land is excessively used food agricultural production is always very low especially in countries that are over populated.

Culture is a major factor that cause food security in Uganda. The research revealed women fail to eat certain foods because culture prohibits so. Which means men in Uganda are supposed to eat nutritious foods which is not the case for women and the majority of women do most of the domestic work at home which shows disparity in food utilization at household level between men and women. This agrees with Byenkya 2008 that, in most Ugandan societies women are malnourished because traditionally not allowed to eat chicken or eggs and other nutritious foods.

Use of rudementally tools (Technology) is the key factor that affects food security in Uganda. According to research findings almost all household heads use rudimentary technology in form of hand hoes this is because most them entirely depend these tools for food production. This means, there is little food produced at household level and even that food that is produced cannot sustain family members. This explains why the majority are food insecure and living in constant poverty because with such type of technology, little is harvested and there is also little surplus for sell. It is

therefore in line with PMA 1999 and 2002 report that; the major constraints of food security include non-availability of high-yielding technological packages, efficient and cost-effective cultivation technology, low adoption rates of appropriate technology.

The major role of extension staffs is to among others sensitize households to ensure that is food security. Findings revealed, majority of rural households are not visited by the extension workers at all. This means household heads are ignorant in what and how to produce, access and utilize food. This concurs with National statistics (Uganda National Household Survey, 2009-10) which indicates that extension officers only visited 16%, central 33%, Eastern, and 9% of LC I areas in the Western regions.

In order to ensure food security at household level, much Agricultural labor force is very fundamental. However, research findings showed that there is limited labor force in food production, majorly only women are engaged. Women are meant to do all household domestic work and then provide food for the family. This means all the members depend on only one labor force of woman for food production. Therefore, at household level food is not enough because of lack of labor and agrees with Byenkya (2008) that, women are more involved in reproductive activities, particularly all domestic activities as well as care of the family which greatly affect food security.

Proper food storage makes the food last long for household either consume or sell. Research revealed that majority do not store food at all and those who do use un standardized measures for example kitchen ceiling storage, air tight storage others use pots. This means food is wasted, spoiled, and easily damaged by pests whereas the little that remains cannot

last long to sustain the family members because household would consume all the food within shortest possible time. This is line with PMA 2016 report that Post-harvest losses, particularly for food crops, are very high, aggravating the food insecurity problem in Uganda.

V. CONCLUSIONS AND RECOMMENDATION

Conclusively key factors that influence food insecurity in rural households of Uganda, have now reached beyond how the government have been treating food insecurity. These factors have made Ugandans not only hungry or malnourished but now they are experiencing famine where people have started to die because of shortage of food. Over 40 people died because of famine which has been because a long spell drought (Oxfam 2016)

The study recommends that the government of Uganda should come up with deliberate food security policy to ensure that Uganda's land act is amended such that any government land which is underutilized be identified for large scale food production for the country to have more than enough to feed its population instead of depending from international organization in case of shortage of food. Food reserves with food preservative mechanisms should be established at national, regional, distinct as well as other lower local government and local leaders should ensure that every household head has granary. Agricultural research centers should be established in all local levels to ensure that extension staff regularly sensitize household heads on proper food production, food accessibility and food utilization

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