

**COMMERCIAL AGRICULTURAL PRACTICES AND LAND CONFLICTS IN  
UGANDA: A CASE OF LUWERO DISTRICT**

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### **DECLARATION**

I declare that this dissertation is my original work and has not been submitted for any other award of a degree and published at any institution of higher learning.

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**Date**

## **APPROVAL**

This Dissertation has been submitted for further examination with my approval as supervisor.

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**Dr. Chrisostome Oketch**

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**Date**

## **DEDICATION**

I dedicate this work to my lovely wife, Mrs. Nicole Tshiani, and my children, Marite, Daniel, Gracia for their friendship, encouragement and emotional support.

## **ACKNOWLEDGEMENT**

My deepest thanks, first of all goes to the Almighty God for granting me his protection and knowledge in coming out with this important study.

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## **LIST OF ACRONYMS**

2SLS	Two-stage Least Squares
AM	Agricultural mechanization
BEBA	Bureau of Economics and Business Affairs
ELI	Environmental Law Institute
FAO	Food and Agriculture Organization
HCI	Household Commercialization Index
IV	Instrumental Variable
LC	Local Council
NAADS	National Agricultural Advisory Services
UBOS	Uganda Bureau of Statistics
UNEP	United Nations Environmental Programme
USAID	United States Aid

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## ABSTRACT

This study assessed the influence of commercial agriculture on land conflict in Luwero District, Uganda. The following objectives guided the study: i) to assess how commercial agriculture practices has led to land boundary conflicts in Luwero district, ii) to establish how commercial agriculture practices has led to land inheritance conflicts in Luwero district, and iii) to examine how commercial agriculture practices has led to multiple sales conflicts in Luwero district. This study adopted cross-section research design. The study targeted 10,258 respondents. The sample size was 385 respondents. The study used questionnaires and interviews. The study used simple random and purposive sampling. The study used frequency and percentage tables, mean, and linear regression analysis. The study revealed that commercial agriculture practices does not have any significant effect on boundary land conflicts in Luwero district (Adjusted  $R^2=0.001$ ,  $p=0.276$ ). The study further found that commercial agriculture practices does not have any significant effect on land inheritance conflicts in Luwero district (Adjusted  $R^2=0.007$ ,  $p=0.052$ ). However, the study revealed that commercial agriculture practices significantly affects multiple land sales conflicts in Luwero district (Adjusted  $R^2=0.107$ ,  $p=0.000$ ). The study concluded that commercial agriculture practices do not necessarily cause land conflicts. The study made the following recommendations: the elders, the clan leaders and the district officials should always establish clear and permanent boundaries such as stone-marks, monuments or plant trees to clearly show land boundaries thus avoiding any future boundary conflicts, regarding inheritance conflicts, the deceased should be encouraged to write their wills when they are still alive, specifying which land and property belongs to who, and lastly, in order to avoid or curb multiple sales of land, land buying should be in the witness of the local council (LC1 and II), clan elders, government representatives (for example officials from the land board and land registration departments), and an advocate.

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Introduction**

This chapter covered the background to the study, statement of the problem, purpose of the study, objectives of the study, research questions, hypotheses, scope of the study, significance of the study and operational definitions of key terms.

#### **1.1 Background of the Study**

This section covered the historical perspective, theoretical perspective, conceptual perspective and contextual perspective of the study.

##### **1.1.1 Historical Perspective**

Commercialization of agricultural production in many developed and developing countries have proved their efficacy in catalyzing industrial and economic growth (Kofi Annan Foundation, 2011). Large-scale commercialized agriculture using modern machinery and sophisticated technologies has largely contributed to economic and industrial growth in developed countries like North America, and European countries, Israel in the Middle East, and Southern American countries like Brazil and Argentina, Asian economies like China and India (Eicher & Staatz, 2015). For instance, the Brazilian-style commercial farms are likely to be close to the frontiers of technology, finance and logistics. The innovations of recent decades have made the rapid adaption of technology, access to finance, and high speed logistics more important, and in the process given commercial agriculture a substantial advantage over the smallholder mode of production (Collier & Dercon, 2016).

In Sub Saharan Africa, commercial farming was mainly introduced by European colonial masters for purposes of feeding their industries in Europe (Eicher & Staatz, 2015). In South Africa for instance, in the year 1658, European settlers introduced large scale commercial agricultural farming (McAllister, 2017). To date, the white farmers are the major contributors to commercial agriculture in South Africa. Thus, most rural farmers especially in former homelands in the Eastern Cape Province of South Africa are still locked in low agriculture production with

no or less marketable surplus extremely below threshold to uplift them out of widespread increasing poverty (Zuma, 2011). On the other hand, the promotion of agricultural commercialization by Kenyan governments on both national and regional levels is consistent with incumbent notions in public discourses. Considering that the majority of the poor in Kenya resides in rural areas with many being smallholders (Kibirige, 2016). In addition, scholars have long emphasized the need to link small-scale farmers to markets and to transform semi-subsistence livelihoods into commercial ones in order to attain food security and to reduce poverty (World Bank, 2013).

In Uganda, agriculture is a leading sector contributing over 44% of the country's GDP and providing employment opportunities to over 80% of the population directly and indirectly (Uganda Bureau of Statistics, 2017). The government has over the years promoted commercial agriculture among smallholder farmers through programs such as National Agricultural Advisory Services (NAADS) and also by providing advisory services to the farmers, and supplying them with seeds along gardening tools. In addition, several co-operation in agricultural investigations, cattle upbringing and stock improvement, animal disease control, fruit production, flower manufacture, management of cattle and game ranches, quality control of food stuffs (specially fish for the export market), and timber production have all been put by the government to encourage diversification in agricultural products (Oponde, 2017). However, due to the high demand for land for commercial agricultural practices, there have been frequent land conflicts among different communities.

Indeed, globally, land conflicts have been a global problem due to population increase and adverse climatic changes that have destroyed most of the arable land. Therefore, due to the need to feed the ever increasing population; globally, both the developed and developing countries have opted for commercial agriculture which requires large chunks of land. It is estimated that large-scale land acquisition increased 10 times since the 2007 food and oil crisis (World Food Organization, 2018). The global food crisis is said to have created the need to ensure food security, therefore prompting a large scale land grabbing across the globe for commercial agricultural practices (Food and Agriculture Organization, 2016). In Brazil and India for instance, widespread, rapid increase of commercial land transactions involved the acquisition or

long-term lease of large areas of land to investors without consulting the local masses thus resulting to several land conflicts (Baglioni & Gibbon, 2013).

In sub Sharan Africa, many countries in their efforts to attract foreign investments tend to favour foreign companies at the expense of the local land owners. In Tanzania and Kenya, land conflicts between the community and the state are historical. This is due to the fact that since the independence time, there has been the use of force from the government demanding the villagers and other land users to leave land they own for other uses mostly commercial agriculture, mining, game reserve, infrastructural development such as Roads, Rail and et cetera (Laiser, 2016).

In Uganda, land conflicts are widespread and are conservatively estimated to affect 7 per cent of agricultural landholdings (Bureau of Economics and Business Affairs (BEBA), 2014). The high incidence of land disputes is attributed to the mismatch between the land policy, legal framework, and implementation process. Demand for land required for public use, private sector-led development, and by speculators is on the increase in most parts of the country, including Luwero district. The poor implementation of the 1998 Land Law is also widely considered to have triggered incidences of state and private interest-inspired land evictions that are on the rise (Fallom, 2014). Consequently, the perceived fear to lose land and the increasing incidences of actual conflicts on land are affecting livelihoods and the dignity of the local community members in Luwero district, particularly women and children, whose fundamental rights are increasingly getting abused by the interests of the powerful elites. Few rural dwellers hold official land titles for the land they live on and some find it hard to seek redress when facing a conflict, a vulnerability that affects their level of agricultural productivity (Kasozi & Namyalo, 2017).

### **1.1.2 Theoretical Perspective**

This study was guided by the Social conflict theory (Oberschall, 1978). Social conflict theory is a Marxist-based social theory which argues that individuals and groups (social classes) within society have differing amounts of material and nonmaterial resources (the wealthy vs. the poor) and that the more powerful groups use their power in order to exploit groups with less power. The two methods by which this exploitation is done are through brute force and economics (Kalande, 2008). The Marxist, conflict approach emphasizes a materialist interpretation of history, a dialectical method of analysis, a critical stance toward existing social arrangements,

and a political program of revolution or, at least, reform (Kent, 2000). In common usage, social conflicts are struggles over values or claims to status and resources in which the parties are an aggregate of individuals, such as groups, communities and crowds rather than single individuals (Oberschall, 1978). Given the land tenure evolution in Uganda, contestation for land takes quite a similar form. Land and land relationships in traditional and modern Uganda are highly social and intimately related to kinship and identity. Assertion of conflicting landownership claims and land use rights are therefore commonly advanced along lineage, clan and ethnic fronts (Byamugisha, 2014). Thus Ugandan (Specifically, Luweero) land conflicts can be looked at in the context of Social conflict theory.

### **1.1.3 Conceptual Perspective**

Commercial agriculture is a gradual replacement of integrated farming systems by specialized agricultural enterprises (Pingali & Rosegrant, 2015). According to Tirkaso (2013), commercial agriculture is a process involving transformation of agriculture to market oriented production which tends to impacts income, consumption and nutritional setup of the farm households. Mahaliyanaarachchi and Bandara (2016) defined commercial agriculture as the amount of market surplus produced as a proportion of total production. The higher the amount of surplus, the more commercially-oriented a farmer is. Importantly, it is more than producing surplus output to the market and thus includes household's decision behavior on product choice and input use based on the principle of profit maximization (Pingali & Rosegrant, 2015).

However, there is also the prevalence of commercialization in subsistence agriculture where farm households supply certain proportion of their output to the market from their subsistence level (Gebre-ab, 2006). Generally, different approaches are used to measure household commercialization level. Commonly, total sale to output ratio which is calculated by taking the value of sales as a proportion of total value of agricultural output is commonly used (Gebre-ab, 2006). Therefore, it is argued that the process of commercialization is determined by a number of factors linked with internal or external to farming activity (Jaleta et al., 2016). Internally, households' resource endowments including land, labor and capital; and whereas, change in technology, infrastructure, demography and market institutions around the farm are among the external factors. In this study, commercial agriculture was operationalized as agricultural marketing, mechanized agriculture, and land use intensification.



Land conflict can be defined as a social fact in which at least two parties are involved and whose origins are differences in interests regarding a given piece of land – possibly aggravated by differences in the social position of the parties. Land conflicts imply different interests over one or several property rights to land: the right to use the land, to manage the land, to generate an income from the land, to exclude others from the land, to transfer it and the right to compensation for it. A land conflict, therefore, can be understood as a misuse, restriction or dispute over property rights to land (Wehrmann, 2017). According to Deininger and Castagnini (2006), land conflicts refer to competitive demands for present to future uses of the land, causing negative impact on other land uses.

According to USAID (2007), land conflict is the situation where the interests of one individual or group are in opposition to those of another individual or group. Conflicts that arise over use or ownership of resources may be related to differences in boundaries, land use, ethnicities, economic status, or levels of government, and they may or may not lead to violence. Food and Agriculture Organization (FAO) (2010) defines conflict over land as a disagreement over land rights, boundaries or uses and that land dispute occurs where specific individual or collective interests relating to land are in conflict. In this study, land conflicts were operationalized as boundary conflicts, inheritance conflicts, and multiple sales of land.

#### **1.1.4 Contextual Perspective**

Luweero District was the site of a fierce insurgency by the rebel group National Resistance Army and a brutal counter-insurgency by the government of Milton Obote, known as the Luweero War or the "Bush War", that left many thousands of civilians dead during the early to mid-1980s. The area affected by the war has come to be known as the Luweero Triangle. In 2005, Nakaseke County was split from Luweero District to form Nakaseke District. Luweero District is administered by the Luweero District Administration, with headquarters at Luweero. There are several town councils within the district, each with its own urban town council: Bombo, Luweero, Wobulenzi, Bamunanika, Kalagala, Kalule, Ndejje, and Ziroobwe.

Agriculture is the mainstay of the district economy. It has been estimated that 85 percent of the district population including those who migrate to Luweero district are engaged in agriculture (Uganda Bureau of Statistics (UBOS), 2017). In the northern area, there is mainly cassava, sweet potatoes, maize and bananas. In the southern and central, there are bananas, potatoes, cassava,

beans, ground nuts and horticulture crops like tomatoes, pineapples, cabbages and greens, upland rice as food crop. Cash crops for the southern and central region are coffee, vanilla, bananas, and the horticultural crops mainly pineapples, water melons, passion fruits, tomatoes, cabbages and vegetables (UBOS, 2017).

Commercial agriculture in Luweero district has been on the rise since the initiation of Operation Wealth Creation by the President of Uganda in 2014 (Lumu, 2019). There was increased acreage in coffee plantation due to Operation Wealth Creation which has increased the distribution of more coffee seedling leading more acres being put in to use. Furthermore, several subsistence farmers are doing farming in the areas of fisheries, poultry, piggery, dairy, pineapples, cabbages, onions, and coffee which are commercially oriented. In addition, the president of Uganda over the past four years, has been emphasizing commercial farming to the local peasants in Luweero district by using modern techniques of farming and application of fertilizers, irrigation systems and improved seeds in their farming efforts (Mwenda, 2018).

## **1.2 Problem Statement**

There are frequent cases of land conflicts in Luwero district and has been having dire consequences on the affected communities (Kasozi & Namyalo, 2017). In 2017, a landlord in Luwer district evicted occupants from a piece of land measuring more than 500 acres for commercial agriculture purposes (Kasozi & Namyalo, 2017). This is in spite of the various policies, legal and institutional mechanisms in place in Uganda such as the National Land Policy, the Land Act and institutions charged with the proper administration of land (Uganda Human Rights Commission, 2017). Therefore, the central question which guided this research was why land conflicts are on the increase in Luwero district for agricultural practices, despite many initiatives by the government of Uganda and other stakeholders to address them. Perhaps a deeper understanding of the dynamics at play in land conflicts is required to facilitate targeted interventions. Therefore, this study investigated to establish whether commercial agriculture in terms of agricultural mechanization and land use intensification is responsible for the prevalent land conflicts in Luwero district.

## **1.3 Purpose of the Study**

The purpose of this study was to assess the influence of commercial agriculture on land conflict in Luwero District, Uganda.

## **1.4 Objectives of the Study**

- i. To assess how commercial agriculture practices have led to land boundary conflicts in Luwero District, Uganda.
- ii. To establish how commercial agriculture practices have led to land inheritance conflicts in Luwero District, Uganda.
- iii. To examine how commercial agriculture practices have led to multiple land sales conflicts in Luwero District, Uganda.

## **1.5 Research Questions**

- i. How has commercial agriculture practices led to land boundary conflicts in Luwero District, Uganda?
- ii. How has commercial agriculture practices led to land inheritance conflicts in Luwero District, Uganda?
- iii. How has commercial agriculture practices led to multiple land sales conflicts in Luwero District, Uganda?

## **1.6 Hypotheses**

- i.  $H_{01}$ : Commercial agriculture practices do not significantly affect land boundary conflicts in Luwero District, Uganda.
- ii.  $H_{02}$ : Commercial agriculture practices do not significantly affect land inheritance conflicts in Luwero District, Uganda.
- iii.  $H_{03}$ : Commercial agriculture practices do not significantly affect multiple land sales conflicts in Luwero District, Uganda.

## **1.7 Scope of the Study**

### **1.7.1 Geographical Scope**

This study was conducted in Luwero District which lies North of Kampala, between latitude  $2^0$  North of the Equator and East between  $32^0$  to  $33^0$ . The total area of Luwero district is approximately 2,577.5 sq km. The district headquarters are in Luwero Town Council a road distance of about 64 km from Kampala and is located along the Kampala – Gulu highway. The district is bordered by Mukono and Wakiso districts in the south, Nakaseke in the west, Nakasongola in the North and in the East is Kayunga district. However, this study was conducted in three town councils out of the eight, namely; Bombo, Luweero, Wobulenzi. Luwero district

was preferred in this study because cases of land conflicts have been on the increase and because the president promoted operation wealth creation in the district, most families and investors have since adopted commercial agriculture by intensifying land use thus leading to land grabbing and subsequent land conflicts.

### **1.7.2 Content Scope**

This study was limited to the extent to which commercial agriculture is practiced by the farmers in Luwero district; the common causes of land conflicts among the people of Luwero district; and the effect of adopting commercial agriculture on land conflicts in Luwero district. Furthermore, commercial agriculture as the dependent variable was operationalized as agricultural marketing, mechanized agriculture, and land use intensification. On the other hand, land conflicts as the dependent variable was operationalized as boundary conflicts, inheritance conflicts, and multiple sales.

### **1.7.3 Time Scope**

This study looked at the period from 2017-2018. This period was selected by the researcher because it was in 2017 that the Commission of Inquiry into Land Matters was instituted by President of Uganda to probe cases of land conflicts in Uganda. Therefore, their findings and inquiries were deemed as the guiding principle for this research. However, the actual descriptive study was conducted within a period of 10 months, that is, from August 2018 to May 2019. This period was used by the researcher to draft the concept paper, proposal, carry out field data collection, data analysis, and provide final thesis writing.

## **1.8 Significance of the Study**

The results of this study will be resourceful to the Ministry of Agriculture and Animal Husbandry in promoting commercial agriculture among smallholder farmers by supporting them with mechanized agricultural methods such as improved seeds, fertilizers, irrigation schemes and pests and diseases control.

Similarly, policy makers will find the results of this study valuable since it will help them to come up with policies that can help the government, farmers, and non-governmental organizations to address issues of land conflicts among the communities.

Furthermore, the results of this study will help the smallholder farmers to shift from subsistence farming methods to commercial agriculture which is intended to eliminate poverty at household levels and propel the country to middle income level by 2020.

In addition, future researchers and academicians will find the results of this study a useful source of reference when carrying out a similar study.

Lastly, the researcher will benefit from this study since it will help him to develop several skills among which will include communication skills during data collection specifically during interview sessions, research writing skills, data analysis skills, and general research skills.

### **1.9 Operational Definitions of Key Terms**

**Commercial Agriculture:** refers to the transition of smallholders from subsistence-based to commercially-oriented livelihoods on the basis of changing farm and non-farm decisions and practices.

**Agricultural Marketing:** refers to services involved in moving an agricultural product from the farm to the consumer.

**Mechanized agriculture:** refers to the process of using agricultural machinery to mechanize the work of agriculture, greatly increasing farm worker productivity.

**Land use intensification:** refers to the use of irrigation, chemicals, hired labour, and machinery to perform agricultural activity.

**Boundary conflicts:** refers to conflicts between individuals and clans over privately owned land or common property.

**Inheritance Conflicts:** refers to conflicts within family or clan over land ownership, access or usage rights.

**Multiple sales:** refers to multiple sale of privately owned land by private individuals, or allocation of same land parcels by the land registration office due to technical shortcomings or corruption (e.g. acceptance of faked titles)

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Introduction**

This chapter reviewed literature from different scholars, and publications on the different constructs and objectives of the study. The chapter was subdivided into theoretical review, conceptual framework and review of related literature.

#### **2.1 Theoretical Review**

This study was guided by the Social conflict theory (Oberschall, 1978). Social conflict theory is a Marxist-based social theory which argues that individuals and groups (social classes) within society have differing amounts of material and nonmaterial resources (the wealthy vs. the poor) and that the more powerful groups use their power in order to exploit groups with less power. The two methods by which this exploitation is done are through brute force and economics (Kalande, 2008). The Marxist, conflict approach emphasizes a materialist interpretation of history, a dialectical method of analysis, a critical stance toward existing social arrangements, and a political program of revolution or, at least, reform (Kent, 2000). In common usage, social conflicts are struggles over values or claims to status and resources in which the parties are an aggregate of individuals, such as groups, communities and crowds rather than single individuals (Oberschall, 1978). Given the land tenure evolution in Uganda, contestation for land takes quite a similar form. Land and land relationships in traditional and modern Uganda are highly social and intimately related to kinship and identity. Assertion of conflicting landownership claims and land use rights are therefore commonly advanced along lineage, clan and ethnic fronts (Byamugisha, 2014). Thus Ugandan (Specifically, Luweero) land conflicts can be looked at in the context of Social conflict theory.

Social conflict theory argues that it is not consciousness that determine existence but social existence that determines consciousness (Oberschall, 1978). This is because whereas existence is universal, consciousness is a creation of a localized group for their own good and identity. Creation being an entity under existence, creation is much lesser as compared to existence. Thus, whereas existence is always beyond human manipulation, conscience is more often a process of inclusion or exclusion for convenience.

In Uganda, existence is defined by kinships' political power which is determined by a kinship's economic strength. There is no political power without an economic base. Political power essentially is an expression of economic strength. This can be in terms of rewarding or punishing. In rewarding, successive governments have given any kind of support that eventually translates into economic value, likewise in punishing, successive governments endeavored to weather down rivals and competitors economic strength. Uganda being agriculturally dependent, economic strength squarely lies in land, for land is the main means of generating income, accumulating wealth and transferring the wealth between successive political units. Thus, land has been the means of rewarding loyalists and punishing opponents (Tumushabe et al., 2017).

This is the reasons why most of the land disputes in Uganda arise mainly from the failure of the authorities concerned to enforce and to comply with the law as it exists. This is encouraged by the belief and interpretation of title in absolutists' terms i.e. that all that matters is to get registered as a proprietor to land and to be issued with title. The manner which title is acquired is irrelevant (Deininger & Ali, 2008). The title is an end in itself. Thus Authorities have over time overseen the abuse of Land laws, land transfer and conveyance procedures. Alternatively these same authorities create new procedures which are inappropriate or inconsistent with existing laws. In both cases, the results are confusion and creation of title that are disputable and or wholly void. Social conflict theory thus emphasizes that existence determines social consciousness and not vice versa. This explains the unacceptable disparities in land ownership and procedural and substantial abuse of land laws in Uganda. It also explains the growth of multiple legal systems and thus the assertion of legal systems that advantages one contending faction while disadvantaging the opposing party (Obbo, 2015).

Therefore, given the complexity of causes leading to land conflicts, as well as their diversity and the large number of different actors involved, requires an integrated, system-oriented approach for solving land conflicts and for preventing additional ones (Wehrman 2008). For those conflicts at the early stage, for example, boundary conflicts and family conflicts; negotiation and mediation will have to be applied. Conflicts that may be open, visibly and loosely rooted like conflicts resulting from abuse of existing laws or conflicting formal and informal laws will best be resolved by focused legal reforms that will emphasize among others ceilings on land ownership. On the other hand, for land conflicts that are heated, invisibly and deeply rooted like

the conflicts resulting from land grabbing by politically correct individuals and irregular allocations of land by land registration board, nullification of title, resettlement of communities and land redistribution is the best way out.

## 2.2 Conceptual Framework

### Independent Variable

#### Commercial Agriculture

- Agricultural Marketing
- Mechanized Agriculture
- Extensive use of land

### Dependent Variable

#### Land Conflicts

- Boundary Conflicts
  - Between individuals (over private land)
  - Between clans (over common property)
- Inheritance Conflicts
  - Inheritance conflict within a family
  - Inheritance conflict within a clan
- Multiple sales
  - Multiple sale of privately owned land by private individuals

### Intervening Variable

- Weak judicial system
- Corruption

Source: Adopted from, Wehrmann (2017), Pingali and Rosegrant (2015), Lumu (2019), and USAID (2007)

**Figure 2.1: Conceptual Framework**

The independent variable of this study was commercial agriculture measured using agricultural marketing, agricultural mechanization and land use intensification. The dependent variable was land conflicts measured using boundary conflicts, inheritance conflicts and multiple sales. The relationship between the independent and dependent variable is that when farmers adopt commercial agriculture, they will start to intensify land use by employing mechanization. This effort will demand more land which will eventually cause land conflicts sometimes in terms of boundary or inheritance conflicts, or even force some crooked individuals to do multiple sales on the same land to farmers interested in practicing commercial agriculture. However, other factors



would influence land conflicts can be weak judicial system, corruption, and weak and old laws on land matters which are no longer applicable on the current land issues.

## **2.3 Related Literature**

### **2.3.1 Commercial Agriculture Practices**

There is no definite definition of commercialization of agricultural production but can be described based on the farmers' aims/goals and aspirations. Smallholder commercialization of agriculture production can be defined as; small scale farmers that are more integrated into available local, national and international markets (Doward & Kydd, 2017). Farmer's goals and aspirations that shape the definition of commercialization of agricultural production include production aimed mainly for sale, oriented towards profit maximization while satisfying the different needs and interests of the consumer (Mahaliyanaarachchi & Bandara, 2016). Commercial farmers can be classified based on the marketable surplus produced and these include; subsistence farmers who produce marketable surplus of under 25% of the total production. The second group comprises the emerging farmers who produce a marketable surplus ranging between 25-50% of total production. The third group is made up of commercial farmers who produce marketable surplus of more than 50% of the total production (Mahaliyanaarachchi & Bandara, 2016).

Pingali and Rosegrant (2015) argued that the process of commercial agriculture involves transition from traditional self-sufficiency goals towards income and profit-oriented decision making. As economies grow, farmers tend to be more responsive to market trends in their production decisions and procure more of their inputs from the markets. Accordingly, use of inputs such as family labour declines relative to production for the market and hired labour becomes predominant. The proportion of farm income in total household income declines, accompanied by significant reduction in the agriculture dependent population as family members find more lucrative non-agricultural employment opportunities (Leavy & Poulton, 2017). However, in the earliest stages of agricultural development, commercialization may well be associated with diversification, because market-oriented crop or livestock represent diversification away from production of basic food for home consumption and may be an important way to spread market related risks (Chirwa & Matita, 2016).

According to Jedwab and Moradi (2017), some positive attributes of commercialization of agricultural production in developing countries during and after colonial periods included: construction of the infrastructures like roads from farms to the exiting point for export; establishment of agro-industries; identification and categorization of specific crops for specific regions with countries and international boundaries; commercialization also contributed to a relatively efficient land markets; new crops (coffee, tea, cotton and jute) and livestock exotic cattle, goats and sheep), and new variety of crops and livestock breeds were introduced; and commercial agriculture played a great role of employing a large number of most peasant farmers.

Although commercialization of agriculture is normally anticipated to act as a catalyst in increasing agricultural productivity for increased household incomes and improved general livelihood of rural farmers as reported by Timmer (2017), it was not the case for most European colonies in developing countries. Evidence reveals that most commercial farms failed during the early post-national independence of most developing countries due to poor human capital, agricultural organization and lack of external social capital, outdated technologies, lack of access to physical and financial resources, and lack of entrepreneurship drive to manage these large farms (Romer, 2014). Consequently, the peasant farmers resorted to small scale farming mainly for subsistence farming. Despite its ability to bring food at the table, subsistence farming in the long run may not be sustainable in terms of food security and improved general livelihood (Jaleta et al., 2016).

According to Agriseta (2018), there has been a decline in the number of commercial farming businesses in the Eastern Cape Province of South Africa. Among challenges responsible for stagnant and declining commercialization of smallholder agricultures in South Africa include: The slow rate of land redistribution and restitution programmes, limited support and reduced government support of smallholder irrigation schemes. The reduced support and services withdrawn by the government included provision of machinery, provision of water at no cost, input subsidies and working capital on the irrigation schemes (Tshuma, 2017). Government programmes like Comprehensive Agriculture Support Programme have benefited a few farmers and failed to support a large number of black farmers who benefited from land reforms programmes (Aliber & Hall, 2015). In addition, farmers lack collateral to access credit or meet conditions set by banks, microfinance institution and government-private partnerships.

Jaleta et al., (2016) indicated that the promotion of smallholder commercialization in the rural Sub Saharan Africa is inevitable for improved livelihood and reduced levels of poverty among the rural population. The essential components for a sustainable and feasible smallholder commercialization of agricultural production especially in rural areas of the Sub Saharan Africa include improved physical infrastructure such as roads, railways and information and communication technology (ICT) facilities (Sibale, 2018). Improved access to natural resources, increased adoption of new technologies, level of specialization in fewer staple food and cash crops coupled with availability of assured markets through contracts and legal agreements are also vital in promoting increased commercialization of smallholder farmers (Sibale, 2018). Other factors considered to be of great importance for increased commercialization among subsistence farmers includes availability of agro-industry, farmers' entrepreneurial and managerial skills, physical assets, labour, and farmers' participation in planning and management of rural development programmes (Jedwab & Moradi, 2017). Accumulated internal (bonding) and external social capital through group/cooperatives is also considered important in promoting smallholder commercialization of agriculture (Jaleta et al., 2016).

According to Salau et al., (2018), the extent to which smallholder farmers commercialize at household level depends on exogenous factors which are identified to include agro-climatic conditions and risks; access to markets and infrastructure; community and household resource and asset endowments; input and factor markets; laws and institutions; cultural and social factors affecting consumption preferences, production and market opportunities and constraints (Jaleta et al., 2016). The main exogenous forces that drive commercialization include population and demographic change, urbanization, availability of new technologies, infrastructure and market creation, macroeconomic and trade policies. These factors affect commercialization by altering the conditions of commodity supply and demand, output and input prices, transaction costs and risks that farmers, traders and others in the agricultural production and marketing system have to cope with (Pender & Alemu, 2017). For example, the potential benefits from commercialization such as higher product prices and lower input prices are not effectively transmitted to poor households when market access is poor (Chirwa et al., 2016). In addition to the exogenous factors, some household head, household characteristics, farm and productivity factors are also found to explain smallholder commercialization behavior (Okoboi, 2018).

### **2.3.1.1 Agricultural Marketing**

Marketing plays a pivotal role in the commercialization of agriculture. Marketing involves finding out what customers want and supplying it to them at a profit (Lashgarara, 2008). Agricultural marketing systems that function well can reduce the cost of exchange of agro-produce. In the agri-food systems, an efficient marketing assures adequacy and stability of food supply in ways that reward farmers, agro-traders and consumers. The major challenges underlying agricultural markets that would hamper commercialization of African agriculture include poor infrastructure, inadequate support services, and weak institutions, increasing transaction costs and the volatility of prices (Dina, 2016).

According to De Putter et al., (2017), vegetable supply chains in Tanzania are an example, with high margins between the price paid to farmers and that paid by consumers. However, Mutabazi et al. (2018) found that the difference in margins between producer and retail prices were modest. They suffer from lack of investment in physical facilities such as roads, storage, vehicles and telecommunications; the lack of which tends to raise costs and downsize payoffs. High transactions costs are one of the principal market failures seen in contemporary Africa. For some, market failures are so widespread and severe that they trap rural households in poverty, since the failures prevent them from innovating, investing and generally commercializing their farming (Dorward et al., 2016; Poulton et al., 2015). Public policy intends to address market failures – for example – ensuring farmers’ access to inputs can lead to dramatic (and costly) responses such as input subsidies that in long-run might lead to further market distortions (Jayne et al., 2016).

For example, the government of Tanzania reintroduced fertilizer subsidies in the early 2000s and now the subsidy package covers other inputs such as seeds. The effectiveness of subsidizing inputs, however, is in debate (Juma, 2017). In addition there are concerns that the cost of subsidies will limit public investment in roads, agricultural research and other public goods to stimulate agricultural development. Significant policy commitments to commercialize Tanzanian agriculture are clearly made in KILIMO KWANZA declaration crafted in 2009. Some commercialization related action points in this declaration include agricultural commoditization, implementation of incentives to ensure competitiveness and address market barriers, price stabilization mechanisms, industrialization and infrastructure development.

Neither the advent of technologies such as mobile phones nor other ICT breakthroughs has evenly transformed agricultural marketing in rural Africa. African marketing systems still require a range of “old culture” elements to operate. Market exchanges between farmers and downstream actors in the supply chains rely on lifelong tacit trading relations mainly based on mutual trust and overly involving physical contacts (Mutabazi et al., 2018).

### **2.3.1.2 Mechanized Agriculture**

In order to thoroughly evaluate both the potential benefits and risks of mechanization, it is key to broaden our understanding of the term’s meaning. We therefore adopt a wide definition of mechanization, both in terms of intensity and in terms of scope. According to the FAO (2008), agricultural mechanization is the application of mechanical technology and increased power to agriculture. This includes the use of tractors of various types as well as animal-powered and human-powered implements and tools, and internal combustion engines, electric motors, solar power and other methods of energy conversion. Mechanization also includes irrigation systems, food processing and related technologies and equipment (Lavanya, 2014).

Rahman and Lawal (2013) stated that Agricultural mechanization (AM) is the application of tractorizational technology into the field of Agriculture in order to improve Agricultural output, as well as deliberate conscious departure from the peasant and subsistence agriculture into a Commercial Agriculture. This process also involves the development and management of machines for field production, water control, material handling as well as post-harvest operation. Maharjan and Cheltri (2016) stated that farm mechanization encompasses in its widest sense hand- tool technology, draught animal technology and mechanical –power technology.

Akande (2009) stated that agricultural mechanization has been defined as the process of development and introduction of mechanized assistance of all forms and at any level of technological sophistication in Agricultural production in order to reduce human drudgery, improve timeliness and efficiency of various farm operations, bring more land under cultivation, preserve the quality of produce, improve living condition and markedly advance the economic growth of the rural sector. Chowdhury et al., (2010) stated that mechanization is a process through which Agricultural activities can be improved and optimum crop production can be achieved. Vinay et al., (2012) indicated that agricultural mechanization is the application of engineering and technology in Agriculture operations to do a job a better way to improve

productivity. This includes development, application and management of all mechanical aids for field production, water control, material handling, storing and processing.

Zangeneh and Banaeian (2014) stated that agricultural mechanization includes three main power sources: human, animal, and mechanical. The manufacture, distribution, repair, maintenance, management and utilization of Agricultural tools, implements and machines is covered under this discipline with regard to how to supply mechanization inputs to farmers in an efficient and effective manner. According to Kaumbutho (2011), mechanization frequently refers to production only – leaving aside important steps in processing, storage and transport. Yet, these steps in the value chain are critical for two major reasons: if production is being mechanized, most likely there will be an increase in output of primary agricultural goods; if downstream operational levels and markets lack capacity for handling the additional produce, larger shares of it may be wasted, thus minimizing the otherwise positive effects of mechanization on agricultural production. Hence, the whole value chain should be considered (Kaumbutho, 2011). Second, the mechanization of processing, storage and transport can itself reduce food loss and offer new opportunities for income gains and diversification.

Three different intensities of mechanization can be distinguished, with matching instruments and energy sources for each level. The scale of our definition includes the three main farm power sources: manual technology, animal power and mechanical power (Houmy et al., 2013). It ranges from low-intensity hand tools to high-intensity, large motorized machinery. In between the two extremes, we find a broader range of medium-intensity equipment that includes draught animals and small motorized machines. This broad approach results in a wide range of mechanization options. Each task on every step of the value chain can potentially be mechanized in different intensities. For example, ploughing for land preparation can be done manually with a hand hoe, in medium-intensity with a plough drawn by oxen or by using a high-intensity four-wheel tractor. Similarly, in processing, pressing oil can take place with a manually powered oil press, one that uses a donkey to turn the press' wheel or a small machine run by solar power, or through a large motorized machine that can process much bigger quantities. Each piece of mechanization equipment requires certain energy inputs as well as care (veterinary services) or maintenance (repair services). Likewise, each instrument has different advantages and disadvantages – for example, hand tools are cheap and easy to use but bring limited productivity gains, whereas

draught animals bring larger gains but require long periods of training and fodder, also during the dry season.

According to Kumar (2014), there is no “mechanization blueprint” that fits every farm in every part of sub Saharan Africa. To the contrary, a farmer’s decision for a certain process that is to be mechanized, or for a certain intensity of mechanization, is determined by a host of individual as well as external factors, such as natural-resource endowment, type of land, access to water, and access to labour and capital (Garrity et al., 2012). For example, on an aggregate level, decisions for certain types of mechanization may be explained by the availability and cost of land and labour, as has been shown by Hayami and Ruttan’s (1970) theory of induced innovation, which is driven by relative scarcities. According to them, land scarcity might incentivize farmers to invest in inputs and tools that encourage intensification or land saving farming strategies, such as water pumps. On the other hand, labour-saving technologies such as tractors that encourage the expansion of cultivated land will be most profitable in scenarios of land abundance and labour scarcity, but much less so in densely populated rural areas, where land is scarcer and where labour is abundant throughout the growing season (von Braun, 2013).

Therefore, population density largely determines the relative costs of land and labor, which provides a framework for understanding where intensification is favorable to farmers and what strategies labor or land saving are likely to be pursued (von Braun, 2013). Where both land and labour pose high barriers to farm mechanization as is the case in hilly, steep-sloped, extremely arid or rocky regions, farm investments might not produce enough returns to guarantee profitability (von Braun, 2013). Scarcities in land or labour may differ regionally, but also between households. Therefore, land and labor-saving mechanization pathways may also occur simultaneously within the same area. However, we can set apart a few mechanization options that are less constrained by these factor endowments: simple equipment for transport (trailers), post-harvest operations (threshers) and irrigation (water pumps) have proven to be useful and profitable in many scenarios. They are relatively cheap and mechanize farm operations that are not particularly time-bound, allowing for higher utilization rates and profitability (Baudron et al., 2015).

### **2.3.1.3 Land Use Intensification**

The concept of land use intensification is defined in a different way to commercial agriculture. Kasem and Thapa (2015) described land use intensification as the greater utilization of a given area of land under production, while Jayne et al., (2016) described land use intensification as the process of enhancing land productivity through the use of more inputs within a given area. According to Brookfield (2013), land use intensification can be measured using any combination of the substitution of labor, capital or technology for land, based on a constant land area used to acquire long-term production. Dietrich (2012) meanwhile, defined land use intensification as the process used by humans to increase land productivity through their interaction with agricultural activities, but without the influence of environmental interactions. According to Suthathip (2016), land use intensification can be measured either in terms of agricultural output or input use levels. Outputs can be measured in production units or values, while inputs can be measure based on the amounts or values of input use.

### **2.3.2 Land Conflicts**

The history of land disputes in Uganda; just like in most African countries is intricately linked to colonialism. Like other former colonial states at independence, the land question and past inequalities in Uganda remain unresolved (Urmilla, 2010). This has been the case in other East African countries where land disputes are a long standing issue. In Kenya for instance, the land question was noted as the platform on which the Kenyan independence was fought and won but it also remained a strain that has in the recent past threatened the cultural and ethnic harmony and often brought the Kenyan economy to its knees (Nyadimo, 2015).

In Uganda, land-related disputes are not new. They existed prior to and during colonialism, as well as in the immediate post-colonial administrations. The only constant in these disputes is that the State has always been a key player. This has greatly influenced the socio-economic and political positions of different groups of people (Deininger & Ayalew, 2007). From 1986 to date, there have been attempts to streamline land administration through ensuring constitutional protection of land rights under Article 26 of the Constitution of Uganda. The land reforms driven by neoliberal policy advice by the multinational financial institutions were negative towards customary land tenure, viewing it as a major hindrance to economic development of the poor



(Deininger et al, 2011). This was in as far as they called for the formalization of land ownership through acquisition of title deeds.

However, developments in Uganda, such as the creation of many districts based on ethnic groupings have created border disputes among the districts. In addition, the influx of many foreign investors in Uganda has increased the demand for large pieces of land for industrial and commercial agricultural purposes. These factors have escalated conflicts in parts of Uganda, some of which have been bloody and often characterized by massive population displacements and extensive destruction of property to levels that culminate into international humanitarian crises (Deininger & Ali, 2008).

Some policies such as the gazetting of large chunks of land for conservation purposes have also been noted as a source of conflict. At the dawn of independence in 1962 for instance, up to 94.6 per cent of the total land area in Karamoja was reserved for conservation purposes. This was reversed by the Uganda Wildlife Authority in 1998 to 53.8 per cent although a lot still needs to be done to address this matter (Uganda National Land Policy, 2013). Overall, it is estimated that land disputes are so widespread in Uganda that they affect 33 per cent to 50 per cent<sup>16</sup> of landholders (Rugadya, 2009). In recent times land disputes have largely been between governments or big industries and traditional societies.

This usually results in forced evictions, where large populations are forcefully moved and their properties destroyed to make way for development projects. Quite often these actions dispense with consultation and the governments carrying them out fail or refuse to compensate those affected. In Uganda, estimates suggest that between 4 and 8 per cent of the land is under foreign land deals, specifically of investors (Byamugisha, 2014). These efforts by private sector actors to acquire land have increased competition for land and sparked disputes with local communities.

A significant number of conflicts in most sub-Saharan African countries have been a result of disputes over land. These disputes are also associated with competing claims to rights over the usage of land as well as to control of power and authority associated with land ownership. The competing claims are due to land scarcity attributed to the finite supply of land amidst growing population, barriers to accessing viable land due to high prices and legal barriers amongst others (Rakodi, 2016). However, although scarcity is most often cited as the leading cause of land

disputes, some studies have demonstrated that the issue has more to do with barriers to access. This is the perspective advanced by environmental security school of thought. The political ecology perspective on the other hand agrees with the environmental security perspective but goes further to consider how scarcity comes about by analyzing the role of globalization and liberal economic ideologies. The main argument is that land scarcity is socially constructed and is a function of social, political and economic factors. Meanwhile the legal anthropological explanation considers land disputes from legal and institutional frameworks and how they perpetuate land conflicts (Rakodi, 2016).

The overriding factor in all these is tenure insecurity, a situation where the rights accruing to the land owner to “use, exchange, transfer, bequeath and inherit land or property” is not guaranteed (Deininger & Castagnini, 2006). The failure of the conventional interventions such as titling, which has instead escalated is also one of the contributing factors (Deininger & Castagnini, 2004). This arises from the inability of the existing land tenure system to respond to new economic challenges leading to conflicts; a situation further compounded by the unclear and sometimes conflicting roles of the formal and informal institutions, population pressure and the absence of effective institutions for addressing land disputes (Deininger & Castagnini, 2006).

For instance, a 2009 study by the World Bank in Northern Uganda, revealed that at least 85 per cent of the study population had experienced threats to their tenure security and felt that those threats were bound to cause insecurity and conflicts (World Bank, 2009). The study established a link between tenure security and conflicts. Most conflicts in northern Uganda involve land abandoned during displacement. The study also revealed that the locals had little faith in the state institutions; those instituting land reforms and those charged with addressing land disputes (World Bank 2009). It was noted that there were misgivings on tenure reform, especially proposals aimed at replacing customary tenure with freehold or leasehold titles which was seen as a ploy to dispose the rural poor of their land. Inadequate capacity of both formal and informal land dispute resolution institutions was given as one of the reasons for the failure of these tenure reform initiatives (World Bank 2009).

In terms of their nature, land conflicts are manifested in various ways (Wehrmann 2008). Some such conflicts are associated with large-scale land transactions while others involve single parties such as between an individual and a neighbour; as well as those involving private citizens and

the state or its agents (De Schutter, 2011). Meanwhile, another often neglected dimension to land conflicts in Uganda is ethnicity (Green, 2006). It is important to note that these conflicts are not peculiar to Uganda, but have been a common trend elsewhere in Africa and in some cases, have escalated to fully fledged civil strife (Deininger & Castagnia, 2004).

According to Mbonde (2015), conflicts over access to, use of and control over land are as old as humankind and frequently occur everywhere – at the intra-personal level (between siblings or neighbours), at the intra-societal level (e.g. between different ethnic groups or between the state and local population) and at the inter-societal level (i.e. between different states). Land issues played a major role in all but three of the more than thirty intrastate conflicts that occurred between 1990 and 2009 (Environmental Law Institute (ELI)/United Nations Environmental Programme (ELI/UNEP), 2013).

Consequences of land conflicts vary tremendously – ranging from disturbed inter-personal relationships to the total destruction of one's livelihood. Many land conflicts affect people's human rights as defined in the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights, such as the right to own property alone as well as in association with others, the right to an adequate standard of living, the right to freedom to choose one's residence, the right to adequate housing, the right to adequate food and the right to freedom from discrimination. More severe land conflicts, such as those related to large-scale infrastructure projects or largescale agricultural investments resulting in local populations' loss of their customary land tenure rights and consequently their access to (their) land, often hurt additional human rights, such as the right to peaceful assembly, the right to freedom in association, the right to freedom of opinion and expression, and the right to take part in the conduct of public affairs (Welt, 2016).

Under the present conditions of high population growth, large-scale economic globalization, climate change, natural disasters and mass migration caused by land degradation, pollution, war, mining etc., land is becoming an even more explosive issue, in particular in countries marked by fragile institutions, weak governance as well as socio-economic and gender gaps (Hazen, 2013). The prevention and resolution of land conflicts, therefore, pose major challenges for a broad spectrum of actors, including governments, private sector and development cooperation. On the one hand, land conflicts can be the result of deeper lying causes. On the other hand, land can be a

source of broader conflict in and of itself. Many conflicts that are perceived to be clashes between different cultures are actually conflicts over land and related natural resources (Neef, 2016).

Land conflicts occur in many forms. There are conflicts between single parties, for instance boundary conflicts between neighbours and inheritance conflicts between siblings. These conflicts are comparably easy to solve (Otim & Charles, 2014). Those that include several parties though – such as group invasions or evictions – are more difficult to deal with. By far the most complex land conflicts are those that are marked by asymmetry of power, often involving corrupt land administration and state capture (Schmieder & Schindler, 2010). Land conflicts are a widespread phenomenon, and can occur at any time or place. Both need and greed can equally give rise to them, and scarcity and increases in land value can make things worse. They especially occur when there is a chance to obtain land for free or at a very low price – regardless of whether the land is state, common or someone's private property. Some examples are: inheritance conflicts; boundary disputes; influential individuals accumulating land through illicit practices – involving abuse of position, fraud, corruption and bribery, in particular in post conflict situations or during the early phases of economic transition, when regulatory institutions, controls and mechanisms of sanctions are not (yet) in place; unauthorized (multiple) sales of customary, collective or public land for which the seller did not pay anything; as well as investors rushing for cheap land ignoring local/customary rights because they are not formally recognized (Wehrmann, 2017).

In Tanzania, The Constitution (1977); the Land Act 1999; the Land Acquisition 1967 and the Physical Planning Act 2007 are explicit on the issue of payment of fair and prompt compensation before land or property can be acquired for public use. In practice, however, these provisions are often not observed. Delays of up to five years or more are not unusual after valuations have been done. There are also problems associated with clandestine selling after compensation is paid to land occupiers (Kombe, 2017). Furthermore, conflicts in Tanzania have also emerged because sitting land occupiers are not being involved or educated about the rationale for the valuation process and the method used to compute the compensation payable for land and other developments therein. Often, sitting land occupiers are not directly represented in key decision-

making stages related to the expropriation of their land, leading to protracted disputes particularly between public authorities and sitting land occupiers (Kombe & Kreibich, 2016).

According to Komakech (2017), the causes of land conflict in in Uganda are as follows: existence of big families due to high birth rates in our community and as a result, there is scramble for land from the neighborhood families to fit the family members hence causing land conflict amongst families. There is also excessive greed for money especially by the youths that tend to sell away family land hence causing land conflicts amongst household in the families. In addition, inadequate knowledge on land policy by the local people in the community thus grumble for land at the end of the day. Furthermore, self-interest by the elders in the families that are so uncooperative in the families by passing wrong judgment amongst family's household as regards land distribution hence causing land conflict amongst families' members. Lastly, the idea of quick money business by the youth who in most cases see land as the only resources that can earn them enough income hence they are being encouraged to sell away their ancestral land Komakech (2017).

On the other hand, Mayiga (2017) reports that the first weaknesses in addressing land conflicts is the police force to investigate and gather evidence over land conflicts in a timely manner. The police are not equipped with the skills necessary for this job. There might be a Land Squad in the police force, however, in most cases they do not adequately investigate cases. In some other instances, some elements in the police force side with land grabbers leaving the public frustrated. According to Mayiga (2017), the second issue, and related to the police, is our court system. Courts depend on investigations by the police to try cases. If the investigations are inadequate, there is only so much that the courts can do. However, this does not absolve the judiciary of any wrongdoing. Courts take too long to dispose of cases. Many lawyers have land cases that stretch to more than five years, and others over a decade. There is a High Court Division responsible for land but it does not solve these cases on time. More often than not judges and magistrates do not turn up or simply adjourn sessions. Judicial officers are transferred without finalizing cases and then those newly posted have to study files all over again thereby frustrating the litigants.

### **2.3.2.1 Commercial Agriculture Practices and Land Boundary Conflicts**

In Uganda land conflicts due to boundary confusion have been at the forefront of inter-ethnic conflict on traditionally held lands. For instance, in Katakwi district on the border of the Karamoja region, the agro-pastoralist community Iteso (meaning people of Teso) feel that they are a targeted minority and are losing access to their traditional lands. As the result of a border dispute between the Iteso of Katakwi and the Karimojong of Moroto that is more than a century old, the two communities have lived under constant threat of conflict. The Karimojong, who are a pastoralist cattle-keeping community, regularly move into Teso territory in order to find grazing land and water. Because the rain that falls in the mountains near Moroto runs off quickly and drains into the wetlands in Teso, the Karimojong are known to say that they are following ‘their’ water into Teso. Recently, Karimojong have also been settling in what Iteso consider to be their territory based on a colonial-era map; Karimojong see the border differently. The border conflict has led to Karimojong raids into Teso territory, during which there are killings and property destruction. Iteso in turn have burned down Karimojong settlements in Katakwi that they believe to be illegal. This type of traditional territorial conflict creates a vicious cycle of violence. Multiple efforts have been made to address the border conflict, through local government arbitration, negotiations between elders and regional officials, community-based initiatives, and even appeals to President Museveni himself. Despite these efforts, the border conflict continues to create negative repercussions for both communities (Young & Sing’Oei 2011).

Furthermore, the most common land dispute in rural areas of Georgia is about parcel overlapping either between two private parties or between a private and a public party. Some of the land disputes are due to incorrect data in the cadastre since previously there were no standards for surveying, which sometimes led to low quality of data. Other land disputes are due to the fact that the boundaries have never been clearly established since the re-privatization of agricultural land. Still, other very widespread land disputes result from the fact that many farmers farm (slightly) more land than they have been granted during privatization. The reason is that people only received the right to a clearly defined size of land, but the location of the land has never been defined, let alone its boundaries. Farmers shaped their fields according to the conditions on the ground, simply dividing all agricultural land among them and using existing and natural boundaries. As farmers have not been allowed to register more than the granted standard amount

of hectares, plots on the ground are (slightly) bigger than the registered plots in the cadastre. This has led to frequent boundary conflicts among farmers (Schmieder & Schindler, 2010).

According to Wehrmann (2008), conflicts that arise over use or ownership of land may be related to differences in boundaries. Boundary conflicts can appear between administrative units such as villages, municipalities and districts and are mainly triggered by competition over scarce resources which are available in the competed area. Kisoza (2014) reveal that, if the process of establishing a new village will lack the transparency in demarcating boundaries with its neighbors, it is more likely for land disputes to occur in future.

#### **2.3.2.2 Commercial Agriculture Practices and Land Inheritance Conflicts**

In Kenya, in the slums of Nairobi, quite a number of orphaned children turned to a relative after their parents died, only to find the relative more interested apparently in their property than in taking care of them (Human Rights Watch, 2001). In addition, a study by Mbonde (2015) revealed that land conflicts between family and family is the second land use conflicts in Mkoka and Songambele villages of Tanzania. Some of the families had big pieces of land inherited from their parents or guardians. The study found that the conflict start when one member of the family wants to dispose a piece of land without agreement with other family members. Also the conflict was attributed to mortgaging a piece of land by member of the family without permission from other members of the family. All these situations brought conflicts and fighting among family members.

A study by Kloos et al., (2016) in Rwanda, revealed land conflicts over inheritance and ascending partition, disputes involving informal and polygamous unions, disputes about land transactions, and boundary disputes as the most common types of disputes. Disputes over inheritance and gifts of land seemed to be the most common, and were typically between parents/children and siblings, and between siblings upon the death of their parents. These initial assessments were consistent with subsequent findings through survey, monitoring, and interview data.

#### **2.3.2.3 Commercial Agriculture Practices and Multiple Sales of Customary Land**

Many other land conflicts result from the multiple sales and double allocation of land, either due to legal pluralism or undocumented customary tenure, or due to competing state agencies all

legitimized to do so. For example, traditional chiefs, LC1s, and LCIIIs have over the years been implicated over illicit practices, selling land they are supposed to hold in trust to non-group members or to the state, causing landlessness among their own people. In Ghana, for instance, many plots are sold by different people to different clients. While one buyer starts constructing, another buyer appears or sends land-guards to destroy the already built-up structures, sometimes even attacking the caretakers who are supposed to protect the property for the other person. At some point in the past, the Katamanso chief gave some of his land temporarily to the Anwahia chief and his people for farming. He, however, sold that land to a real estate agent who later found out that part of it had also been sold to someone else. He went to court. What had happened was that the Anwahia chief had died and his son had sold the land again, either not knowing that it had already been given away or thinking that it would not be developed by the real estate agent (Odametey, 2007).

### **2.3.3 The Effects of Commercial Agriculture on Land Conflicts**

The increasing cases of land disputes are attributed to the changing land use patterns in most parts of Uganda. A study by Uganda Human rights Commission (2017) revealed that in Karamoja, there were instances where the rush by individuals to acquire land for commercial purposes was in conflict with the pastoralist lifestyle which favours communal land ownership. However, with time, the pressure persisted in favour of cultivation and private land ownership as opposed to pastoralism and communal land ownership even though the concept of private ownership of land was new among the communities. Coincidentally, the move to encourage commercial agriculture as opposed to cattle keeping seemed to be the thinking behind most government interventions in Karamoja Region. This has precipitated land disputes in the region.

According to Mutengo (2011), the government of Tanzania has sometimes attempted commercial agriculture without due consideration to the consequences with regard to the importance and value of land to its citizens. The government has been on the tendency to attract foreign investors who would be given large chunks of land for commercial agriculture purposes such as Coffee, Tea, Cotton, Horticulture, and Dairy farming. This has often led to the evictions of thousands of individuals from their ancestral lands without proper compensation or resettlement. Thus, prompting the locals to resort into violent conflicts where on extreme cases, some investors were beaten, injured and detained in unknown locations.



Salau et al., (2018) examined the effects of agricultural commercialization at the household level on fertilizer use, demand for hired labour and participation in non-farm employment in Northern Nigeria. Household Commercialization Index (HCI), Two-stage Least Squares (2SLS) and Instrumental Variable (IV) estimations were used to analyze the primary data collected from 270 maize farming households in Kaduna and Kano States. The study revealed that commercialization had the potentials for increasing the demand for fertilizer usage and hired labour among maize farming households. However, it reduced the tendency for households to participate in non-farm employment. Smallholder commercialization of maize should therefore be promoted through adoption of complementary technologies that free labour from on-farm activities.

Furthermore, Tirkaso (2013) assessed the potential role of commercialization for smallholder agricultural productivity and food security in Ethiopian farm households. Econometric model based on stochastic frontier analysis is used as the main technique in addressing the predetermined research questions. Findings show that farmers are only 40.2 percent efficient relative to the most efficient farmers in the sample using the current input level. The variables related to educational level, access for radio, access for cell phone and level of commercialization are positively linked with technical efficiency. Results imply that output can be increased up to 59.8 percent by improving the existing input mixes used in the production process. Furthermore, estimated results for the determinants of farmers' commercialization identified different types of market as the main statistically significant variables. Besides, the amount of households' budget share allocated for food consumption expenditure is indirectly associated with level of commercialization suggesting possibility of substantial influence on quality and quantity of households' food consumption. Finally, with respect to policy recommendations, the overall results suggested that policy makers and international donors should prioritize their effort on increasing smallholders' degree of market participation as one of the main instrument in improving agricultural productivity and food security.

## **2.4 Gaps in Literature**

Several studies have been done to investigate the practices of commercial agriculture, among which include: Sibale (2018), Jaleta et al., (2016); Tshuma (2017); Agriseta (2018). These studies have looked at commercial agriculture in terms of improved access to natural resources,

increased adoption of new technologies, level of specialization in fewer staple food and cash crops coupled with availability of assured markets through contracts and legal agreements. However the above studies did not look at commercial agriculture in terms of agricultural marketing, mechanized agriculture and land use intensification, thus presenting a contextual gap that this study investigated.

Furthermore, studies by Nyadimo (2015), Byamugisha (2014), Wehrmann (2017) have looked at the consequences of land conflicts to the communities. However, the current study looks at land conflicts in terms of: inheritance conflicts, boundary conflicts and multiple sales conflicts, thus closing a content gap.

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.0 Introduction**

This chapter comprises of the research design, target population, sample size, sampling technique, data sources, data collection methods, data collection instruments, validity and reliability, data collection procedure, data analysis, ethical considerations, limitations of the study.

#### **3.1 Research Design**

This study adopted cross-section research design which is a research tool that is used to capture information based on data gathered for a specific point in time (Creswell, 2012). This design was preferred because it captures a population in a single point in time and can help to remove assumptions. The study also adopted a descriptive research design. According to Sekaran and Bougie (2013), descriptive research is a design used to answer the what, how and why. The justification of using descriptive design was because it provides the possibility to observe the phenomenon in a completely natural and unchanged natural environment, effective for analyzing non-quantified topics, and the opportunity to integrate the qualitative and quantitative methods of data collection.

Quantitative research methods include surveys which uses questionnaires which this study has used for its research (Creswell, 2012). This type of research is widely accepted as beneficial and convenient and can be used when gathering definite numbers. Quantitative research is particularly useful if the researcher is attempting to scientifically verify a hypothesis. This type of research, uses mostly surveys and although time consuming, it allows for large amounts of data to be collected using a questionnaire for a sample group that is representative of a population. Moreover, a lot of researchers complain that their research is delayed by factors out of their control but with this approach once data is collected, although time consuming, it will be dependent on the researcher (Saunders et al, 2012).

Similarly, this study adopted qualitative approach. According to Creswell (2012) qualitative research is an exploration and understanding of the perceptions individuals or groups attribute to

social or human problems. Qualitative research gives a deeper understanding into feelings, perceptions, ideas, and behaviours of individuals or groups. This study used interviews as a technique that is commonly used in qualitative research.

### 3.2 Study Population

This study was conducted in Luwero district which has a study population of 456,958 people (Uganda Bureau of Statistics, 2017). However, using simple random sampling technique, the study targeted 10,258 respondents who included Landlords (Extensive Farmers), Tenants (Subsistence Farmers), Local land committee, Local government officials (LC1, LCII & LCIII), Officials from the Office of the RDC, District Land Boards officials, District Land Registry officials, Leaders of famers' associations, and Traditional/cultural institutions (Clan Chiefs & Elders).

### 3.3 Sample Size

The sample size of this study was determined using Slovene's formula.

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

Where N=target population, n=sample size,  $\alpha=0.05$  level of significance.

$$n = \frac{10,258}{1 + 10,258(0.05)^2}$$

$$n = \frac{10,258}{1 + 25.645}$$

$$n = \frac{10,258}{26.645}$$

$$n = 385$$

**Table 3.1: Quantitative Sample Size**

<b>Category of Respondents</b>	<b>Target Population</b>	<b>Sample Size</b>	<b>Sampling Technique</b>
Landlords (Extensive Farmers)	3,337	122	Simple random
Tenants (Subsistence/commercial Farmers)	5,980	219	Simple random
Local land committee	592	22	Simple random
Local government officials (LC1, LCII & LCIII)	324	12	Simple random
<b>Total</b>	<b>10,233</b>	<b>375</b>	

**Source: Uganda Bureau of Statistics (2017)**

The key informants in the qualitative survey included the following: Officials from the Office of the RDC, District Land Boards officials, District Land Registry officials, Leaders of famers' associations, and Traditional/cultural institutions (Clan Chiefs & Elders). The target population and the sample size of the key informants have been summarized in table 3.2 below.

**Table 3.2: Qualitative Sample Size**

<b>Key Informants</b>	<b>Target Population</b>	<b>Sample Size</b>	<b>Sampling technique</b>
Officials from the Office of the RDC	3	1	Purposive
District Land Boards officials	4	2	Purposive
District Land Registry officials	4	2	Purposive
Leaders of famers' associations	6	2	Purposive
Traditional/cultural institutions (Clan Chiefs & Elders)	8	3	Purposive
<b>Total</b>	<b>25</b>	<b>10</b>	

**Source: Uganda Bureau of Statistics (2017)**

### **3.4 Sampling Technique**

Simple random sampling was applied to eliminate bias such that the subsequent statistical estimates are more valid since they would be free from sampling errors as observed by Amin

(2005). As a matter of procedure for simple random sampling, the lottery method recommended by Amin was used to select the respondents indicated in table 3.1.

The key informants in table 3.2 were selected using purposive sampling. Saunders et al. (2012) observed that purposive sampling allows selection of a sample without bias to ensure inclusion of those respondents who are most suitable to provide useful information to the study. Further, the authors argue that it is associated with a smaller sample as the case of participants in table 3.2. It yields non-statistical findings which are not generalizable to the entire population and it targets only very knowledgeable people who understand the subject matter.

### **3.5 Data Sources**

The study collected both primary and secondary data from primary and secondary sources.

#### **3.5.1. Primary Data Source**

Primary data was collected using questionnaires and interviews from all the category of the respondents indicated in table 3.1 and 3.2 respectively.

#### **3.5.2. Secondary Data Source**

Secondary data on the other hand was collected from the review of related studies by other researchers, journal articles, government periodicals and any other related literature.

### **3.6 Data Collection Methods**

The study adopted two methods of data collection; survey and interviews.

#### **3.6.1 Surveys**

The study used survey method of data collection. The researcher preferred to use survey method because it is good for gathering descriptive data, relatively easy to administer, cost effective and time saving. This method was used to collect data about commercial agriculture and land conflicts using structured questionnaires.

#### **3.6.2 Interviews**

Face to face interviews were held with the key informants indicated in table 3.2. The researcher used interviews to collect data about commercial agriculture and land conflicts. Interviews were preferred by the researcher to provide in-depth analysis of the concepts of the study.

### **3.7 Data Collection Instrument**

This study used questionnaires and interviews guide as its main research instruments to collect quantitative data and qualitative data respectively.

#### **3.7.1 Structured Survey questionnaire**

This study used structured questionnaire to collect data from respondents indicated in table 3.1 about the subject of commercial agriculture and land conflicts. A structured questionnaire is a form of data collection method that involves use of a group or sequence of questions designed to get information from either a key respondent or an informant (Amin, 2005). It can be administered by the researcher or filled-in by the respondent without the aid of the researcher. For this research, a structured questionnaire was administered to randomly selected respondents during the initial stage of the field data collection.

The questions were measured on a five Linkert scale indicating the perceptions of respondents on the variables under study. More specifically, the questionnaire was subdivided into three sections, namely: Section A which captured information about the demographic characteristics of the respondents (i.e. gender, age, education level, type of farming method, size of land, and type of land ownership); Section B captured data on commercial agriculture measured using agricultural marketing (5-items), agricultural mechanization (6-items), and land use intensification (6-items) and Section C captured data on land conflicts measured using 15 items on the causes of land conflicts.

#### **3.7.2 Key Informant Interviews**

Key informant interviews are qualitative in-depth interviews with people with expertise in the subject of the research. This method was adopted for this research to facilitate the collection of information from a wide range of stakeholders and residents as included in table 3.2. The researcher developed an interview guide after the pilot interviews took place. The questions were designed within the themes of commercial agriculture and land conflicts. Most of the interviews were carried out in locations that were convenient and best suited the participants. Each interview took approximately 20-25 minutes. It was opted for because first-hand knowledge about the commercial agriculture and land conflicts would be obtained since these were people

with particular knowledge and their understanding could provide an insight on the nature of problems and recommendations.

### **3.8 Validity and Reliability**

#### **3.8.1 Validity**

To ensure quality, the questionnaire, was subjected to validity tests as recommended by Collis and Hussey (2003). Content validity was tested using a Content Validity Index (CVI). Content validity is the extent to which the items in the instrument represent the content of the attribute being measured. The researcher ensured this through judgment of the items by experts (namely: two research supervisors). The CVI was expressed as:

$$CVI = \frac{\text{total number of items rated relevant by all judges}}{\text{total number of items in the instrument}}$$

Where **n**=number of items rated relevant by all judges; **N**=total number of items in the instrument

According to Amin (2005), most often researchers compute the Content Validity Index (CVI) for each item in the instrument as rated by two or more experts in order to determine how valid the study instrument is. Amin (2005) says, if the CVI is 0.70 and above, the instrument can then be considered valid. On the other hand, Cooper and Schindler (2006) argue that the CVI should exceed 0.6 for the instrument to be valid for data collection. In this study, the CVI was 0.91 hence implying that the instrument was valid as indicated by the calculation below:

$$CVI = \frac{29}{32}$$

$$CVI = 0.91$$

#### **3.8.2 Reliability**

Reliability enhances repeatability and generalization of study findings. It can be ensured through: test re-retest method and internal consistency method. Test-retest method was conducted during a pilot study. A pilot questionnaire was distributed to 10 farmers in Wakiso district prior to



allowing the large samples of the questionnaires to be distributed. Also, a pilot interview was conducted on four District Land Boards officials of Wakiso district before the actual large sample interview was conducted. The purpose of the pilot was to allow the researcher to identify ambiguities and inappropriate questions in order to drop the questions and address the different feedback. This was carried out to further improve the questionnaires reliability and validity before administering it to the sample group in table 3.1 and 3.2. This helped the researcher to re-word or re-scale any questions that were not answered as expected.

Secondly, the study used internal consistency method. Cronbach's alpha was used in the actual study to determine the internal consistency of the instrument. Cronbach's alpha ( $\alpha$ ) measures the internal consistency that is, how closely related a set of items are as a group. The higher the  $\alpha$ -value, the more reliable the instruments are considered. A commonly accepted rule for describing internal consistency using Cronbach's alpha is as follows (Field, 2009): table 3.3 gives the summary.

**Table 3.3: Interpretation of Cronbach's Alpha Results**

<b>Cronbach's alpha</b>	<b>Internal consistency</b>
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

The reliability results of this study were indicated in table 3.4 as shown below:

**Table 3.4: Cronbach's Results**

<b>Variables tested</b>	<b>Number of Items</b>	<b>Cronbach's alpha</b>	<b>Interpretation</b>
Commercial Agriculture	17	0.876	Good
Land Conflicts	15	0.844	Good

The results in Table 3.4 show that reliability for the items in the different constructs was attained at the benchmark of  $\alpha = 0.80$  and above. The data was thus deemed appropriate for consideration and analysis.

### **3.9 Data Collection Procedure**

An introduction letter was obtained from the College of Humanities and Social Sciences of Kampala International University (KIU) for the researcher to solicit approval to conduct the study from the respondents and key informants in table 3.1 and 3.2 respectively. The researcher administered the questionnaires himself so as to explain any irregularities properly to the respondents and adequately orient them about the study and why it was being carried out. The respondents were requested to sign the informed consent form. They were also guided on how to fill the questionnaires, and the importance of answering every item of the questionnaire without leaving any part unanswered. The respondents were requested to kindly respond to the questionnaire on time. The researcher retrieved the filled questionnaires within three days. After retrieving them back, the researcher thoroughly checked them to ensure that all items are adequately answered by the respondents.

### **3.10 Data Analysis**

After retrieving back the questionnaire and collecting the required data, it was then prepared for analysis by using Statistical Package for Social Scientists (IBM SPSS, version 22.0) software. In this process, the data underwent these processes i.e. data editing which involved checking the filled questionnaires for any omissions or mistakes; then data coding which involved giving each item of the questionnaire or variable a code to be used when imputing the data into the computer, and lastly data entry into the computer for analysis.

Before analyzing data, the researcher checked it for errors by looking for values that fall outside the range of possible values. This was achieved by scanning through the data critically column by column and running frequencies for each of the variables to detect anomalies.

After processing (i.e. editing, coding, entry into the computer, and checking) the collected data, the researcher analyzed it. The analysis was conducted in the following manner: frequency counts and percentage distributions were used to analyze data on the profile of the respondents.

On the other hand, mean described the central tendency of the dataset while standard deviation described the dispersions of the datasets. Mean and standard deviations were used to describe the practices of commercial agriculture in Luwero district and causes of land conflicts in Luwero district. Table 3.5 gives interpretations for the mean value in descriptive statistics using a five Likert scale.

**Table 3.5: Mean Values for Commercial Agriculture**

<b>Scale</b>	<b>Mean Range</b>	<b>Response</b>	<b>Interpretation</b>
5	4.21-5.00	Strongly agree	Very Satisfactory
4	3.41-4.20	Agree	Satisfactory
3	2.61-3.40	Not sure	Fairly satisfactory
2	1.81-2.60	Disagree	Unsatisfactory
1	1.00-1.80	Strongly disagree	Very unsatisfactory

**Table 3.6: Mean Values for Land Conflicts**

<b>Scale</b>	<b>Mean Range</b>	<b>Response</b>	<b>Interpretation</b>
5	4.21-5.00	Strongly agree	Very Common
4	3.41-4.20	Agree	Common
3	2.61-3.40	Not sure	Fairly Common
2	1.81-2.60	Disagree	Uncommon
1	1.00-1.80	Strongly disagree	Very uncommon

Linear regression analysis was used to determine the effect of commercial agriculture on land conflicts. The **decision rule** for the null hypothesis was that, if the level of significance of 0.05 was greater than ( $p > 0.05$ ), the null hypothesis would be accepted, otherwise it would be rejected.

Qualitative data was analyzed by grouping similar kinds of information together in categories and relating different ideas and themes to one another. The researcher then used overcharging themes in the data which helped him in finding possible and plausible explanations for the findings. Finally, the researcher quoted the words of each key interview informant who participated in an interview so as not to distort the content matter by explaining it in his own understanding. The quotes were put between quotation marks so as to distinguish it from the rest of the texts in the study.

### 3.11 Ethical Consideration

The researcher used the four main ethical principles: harm to participants, informed consent, invasion of privacy, and deception (Creswell, 2012).

**Harm to Participants:** It is up to the researcher to ensure that the participants are protected from any harms and risks during participations such as keeping sensitive information anonymous, any physical harm or even stress during answering a questionnaire or at an interview process. During the introduction, the researcher emphasized on the risks involved and made sure that participants had read and understood and signed the consent form (Bryman & Bell, 2012). Interviews were conducted in the location and place that suited the participants, and they were assured that anything discussed during the interview was going to remain confidential. On the other hand, the questionnaires followed the same pattern, and all the responses were anonymous as there was no need for their identity.

**Informed Contest:** A researcher is ethically obliged to give information of the nature of the research being conducted. According to Bryman and Bell (2012), this principle means that prospective research participants should be given as much information as might be needed to make an informed decision about whether or not they wish to participate in a study. Thus before both the interview and the survey was organized, the researcher offered participants enough information regarding the research study, purpose of study and the topic areas that covered the questions. They had a choice, to participate with the study or not to.

**Invasion of Privacy:** This is all about informing participants of the guaranteed privacy and confidentiality. The researcher had to ensure that no identity of any participant was identified, which means that respect and privacy was key to confidentiality. Any question that made them feel uncomfortable to answer because of its sensitiveness, they had a choice to opt out.

**Deception:** According to Bryman and Bell (2012), deception is when a researcher ‘represents their work as something other than what it is.’ In order to avoid these, the researcher ensured that the participants had the knowledge of what the study was about ‘commercial agriculture and land conflicts’.

## **CHAPTER FOUR**

### **DATA PRESENTATION, ANALYSIS AND INTERPRETATION**

#### **4.0 Introduction**

This chapter presents the analysis of the data gathered and interpretation thereof. It gives the demographic characteristics of the respondents and variables used.

#### **4.1 Demographic Characteristics of the Respondents**

This section determines the demographic characteristics of the respondents. To achieve it, questionnaires were distributed to capture these responses. Frequencies and percentage distribution table was employed to summarize the demographic characteristics of the respondents in terms of gender, age, education level, type of farming method, size of land, and type of land ownership. The table 4.1 gives the summary of the findings.

**Table 4.1: Demographic Characteristics of the Respondents**

<b>Gender</b>	<b>Frequency</b>	<b>Percent (%)</b>
Male	200	53.3
Female	175	46.7
<b>Total</b>	<b>375</b>	<b>100.0</b>
<b>Age</b>		
20-29	21	5.6
30-39	52	13.9
40-49	157	41.9
50 and above	145	38.7
<b>Total</b>	<b>375</b>	<b>100.0</b>
<b>Education Level</b>		
Not educated	55	14.7
Primary	70	18.7
Secondary	112	29.9
Diploma	96	25.6
Bachelor Degree	30	8.0
Master's Degree	12	3.2
<b>Total</b>	<b>375</b>	<b>100.0</b>
<b>Type of Farming Method</b>		
Subsistence farming	281	74.9
Commercial farming	94	25.1
<b>Total</b>	<b>375</b>	<b>100.0</b>
<b>Size of Land</b>		
Less than 1 hectare	116	30.9
1-5 hectares	151	40.3
6-10 hectares	74	19.7
More than 10 hectares	34	9.1
<b>Total</b>	<b>375</b>	<b>100.0</b>
<b>Type of Land Ownership</b>		
Inherited	132	35.2
Rented	45	12.0
Purchased with title	117	31.2
Purchased without title	48	12.8
Borrowed	33	8.8
<b>Total</b>	<b>375</b>	<b>100.0</b>

**Source: Primary Data (2019)**

Table 4.1 revealed that majority, 53.3% of the respondents were male, while 46.7% were female. The dominance of the respondents who were male was attributed to the fact that male have the resources to possess and own land compared to the women.

Table 4.1 revealed that majority, 41.9% of the respondents were within the age group of 40-49 years, followed by those who were 50 years and above, while the respondents who were within the age group of 30-39 and 20-29 years were represented by 13.9% and 5.6% respectively. The dominance of the respondents within the age group of 40-49 years implies that they are mature and knowledgeable enough to employ commercial agriculture methods in their farming.

Table 4.1 revealed that majority, 29.9% of the respondents were educated up to the level of secondary school, followed by 25.6% who were educated up to the level of Diploma. Furthermore, respondents who were educated up to the level of primary and those who were not educated at all were represented by 18.7% and 14.7% respectively. Similarly respondents who were educated up to the level of Bachelor Degree and Master's Degree were represented by 8% and 3.2% respectively. The dominance of the respondents with secondary education was attributed to the high level of poverty in the country where most people cannot afford university education, thus dropout to opt for subsistence agriculture farming.

Table 4.1 revealed that majority, 74.9% of the respondents practiced subsistence method of farming, while 25.1% practiced commercial method of farming. The dominance of the respondents who practiced subsistence method of farming implies that most of the households surveyed in Luwero district do not have the financial capacity, the resources and skills to practice commercial agriculture.

Table 4.1 revealed that majority, 40.3% of the respondents practiced agriculture on 1-5 hectares of land, followed by 30.9% who practiced agriculture on less than 1 hectare of land, while respondents who practiced agriculture on 6-10 hectares and more than 10 hectares were represented by 19.7% and 9.11% respectively. The dominance of the respondents who practiced agriculture on land of 1-5 hectares was attributed to the large population in Luwero district which could not permit ownership of very large parcels of land by an individual. Furthermore, given the rapid need for commercial agriculture, most people have sold their land to investors thus remaining with very little hectares fit only for subsistence farming.

Table 4.1 revealed that majority, 35.2% of the respondents owned inherited land, followed by 31.2% who owned purchased land with titles. In addition, 12.8% of the respondents owned land purchased without titles, followed by 12% who owned rented land, while 8.8% owned borrowed

land. The dominance of the respondents who owned inherited land is because most people in Luwero believe in ancestry thus most land have kept on been handed over from one generation to another by family and clan members. This could be the reason why the sale of such land causes family conflicts if not done with appropriate consultations and consensus.

#### **4.2 Descriptive Statistics for Commercial Agriculture**

This section presents the results on the major findings of the study constructs mainly commercial agriculture in terms of agricultural marketing, mechanized agriculture, and land use intensification. On a range of 5-1, the following abbreviations were adopted: Strongly Agree (SA), Agree (A), Don't Know (DN), Disagree (D), and Strongly Disagree (SD). The findings are presented in table 4.2 below.



**Table 4.2: Commercial Agriculture**

<b>Commercial Agriculture</b>	<b>SD (%)</b>	<b>D (%)</b>	<b>DN (%)</b>	<b>A (%)</b>	<b>SA (%)</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Agricultural marketing</b>							
I mostly market my farm products on social media.	16(4.3)	11(2.9)	27(7.2)	218(58.1)	103(27.5)	4.02	0.922
There is a ready market in this community where farmers can easily sell their farm products.	24(6.4)	26(6.9)	11(2.9)	212(56.5)	102(27.2)	3.91	1.072
I have joined a co-operative which has enabled me to know the availability of the markets for my products.	20(5.3)	22(5.9)	41(10.9)	198(52.8)	94(25.1)	3.86	1.029
The road network in this community enables easy access to the market.	21(5.6)	37(9.9)	33(8.8)	201(53.6)	83(22.1)	3.77	1.076
The government has often marketed our products and sometimes provided market for our products.	31(8.3)	83(22.1)	62(16.5)	145(41.1)	45(12.0)	3.26	1.173
<b>Average Mean</b>						<b>3.76</b>	<b>1.054</b>
<b>Agricultural Mechanization</b>							
I have adopted the use of modern methods to process my farm products.	9(2.4)	19(5.1)	31(8.3)	178(47.5)	138(36.8)		
I have adopted the use of trucks to transport my farm products.	19(5.1)	21(5.6)	15(4.0)	206(54.9)	114(30.4)	4.00	1.013
I have adopted the use of tractors in my farm.	16(4.3)	25(6.7)	33(8.8)	180(48.0)	121(32.3)	3.97	1.031
I have adopted the use of modern machinery in my farm.	9(2.4)	28(7.5)	61(16.3)	171(45.6)	106(28.3)	3.90	0.976
I have adopted the use of modern storage methods to store and preserve my farm products.	28(7.5)	30(8.0)	28(7.5)	184(49.1)	105(28.0)	3.82	1.148
I have adopted the use of value-addition to make my farm products marketable.	14(3.7)	20(5.3)	0(0)	36(9.6)	305(81.5)	3.69	0.740
<b>Average Mean</b>						<b>3.92</b>	<b>0.972</b>
<b>Land use intensification</b>							
I have adopted the use of improved seeds in my farming methods.	22(5.9)	23(6.1)	0(0)	16(4.3)	314(83.7)	3.66	0.837
I have adopted the use of pesticides and disease control methods in my farming methods.	21(5.6)	19(5.1)	30(8.0)	305(81.3)	0(0)	3.65	0.816
I have adopted the use of irrigation scheme in my farming methods.	22(5.9)	29(7.7)	73(19.5)	251(66.9)	0(0)	3.47	0.871
I have adopted the use of cross-breed animals and birds in my farming methods.	35(9.3)	24(6.4)	58(15.5)	258(68.8)	0(0)	3.44	0.968
I have adopted the use of modern machinery in my farming methods.	66(17.6)	52(13.9)	78(20.8)	130(34.7)	49(13.1)	3.42	0.952
I have increased the number of labourers in my farm.	47(12.5)	66(17.6)	73(19.5)	153(40.8)	36(9.6)	3.17	1.201
<b>Average Mean</b>						<b>3.47</b>	<b>0.941</b>

Table 4.2 revealed that the practice of commercial agriculture in Luwero district was assessed by the respondents as satisfactory (overall average mean=3.71, Std=0.989). This was attributed to the fact that all the measures of commercial agriculture such as agricultural marketing, agricultural mechanization, and land use intensification were all assessed as satisfactory.

For instance, agricultural marketing was assessed by the respondents as satisfactory (average mean=3.76, Std=1.054). This was attributed to the fact that majority of the respondents agreed that they mostly market their farm products on social media (mean=4.02, Std=0.922). In addition, respondents agreed that there is a ready market in their community where farmers can easily sell their farm products (mean=3.91, Std=1.072). Similarly, respondents agreed that they have joined a co-operative which has enabled them to know the availability of the markets for their products (mean=3.86, Std=1.029). Likewise, respondents agreed that the road network in their community enables easy access to the market (mean=3.77, Std=1.076). However, respondents were doubtful that the government has often marketed their products and sometimes provided market for their products (mean=3.26, Std=1.173).

The above responses imply that the farmers in Luwero district have embraced commercial agriculture given the ready and available market and the good road network in their community. Indeed the use of social media and cooperatives has been instrumental in helping farmers get potential customers for their products. Unfortunately, the government has not been very supportive to farmers in dispensing market information such as price fluctuations, thus making them susceptible to sudden price changes in the market.

Furthermore, table 4.2 revealed that agricultural mechanization was assessed by the respondents as satisfactory (average mean=3.92, Std=0.973). This was attributed to the fact that majority of the respondents agreed they had adopted the use of modern methods to process their farm products (mean=4.11, Std=0.927), adopted the use of trucks to transport their farm products (mean=4.00, Std=1.013), adopted the use of tractors in their farm (mean=3.97, Std=1.031), adopted the use of modern machinery in their farm (mean=3.90, Std=0.976), adopted the use of modern storage methods to store and preserve their farm products (mean=3.82, Std=1.148), and adopted the use of value-addition to make their farm products marketable (mean=3.69, Std=0.740). The responses above imply that farmers have adopted the use of agricultural

mechanization through the use of tractors, trucks, modern processing, preservation and storage methods.

Moreover, table 4.2 revealed that land use intensification was assessed by the respondents as satisfactory (average mean=3.45, Std=0.941). This was attributed to the fact that majority of the respondents agreed that they had adopted the use of improved seeds in their farming methods (mean=3.66, Std=0.837), adopted the use of pesticides and disease control methods in their farming methods (mean=3.65, Std=0.816), adopted the use of irrigation schemes in their farming methods (mean=3.47, Std=0.871), adopted the use of cross-breed animals and birds in my farming methods (mean=3.44, Std=0.968), and adopted the use of modern machinery in their farming methods (mean=3.12, Std=1.305). However, several other respondents were skeptical that they had increased the number of labourers in their farms (mean=3.17, Std=1.201).

The above responses imply that most farmers have decided to intensify their land use due to the commercial agricultural practices they have embraced. This is because in order to realize high yields and quality output, most farmers have decided to make use of modern methods such as irrigation schemes, improved seeds, disease control and pesticides, and use of modern machinery.

In order to establish the extent to which commercial agriculture is practiced in Luwero district, the researcher asked the leader of farmer's association about it and here is what he had to say:

*Most farmers in Luwero district are involved in cash crops farming which include soya, sunflower, sesame, groundnuts, cotton, and chilies. Cash crops feed into both domestic and export markets and are subject to global price trends. NGO involvement in cash crop market chains in Luwero district have been concentrated at the farmer end, with a focus on increasing returns through the provision of inputs and technical advice (Leader of famers' associations).*

#### **4.3 Descriptive Statistics for Land Conflicts**

This section presents results on the major findings of the study constructs mainly land conflicts in terms of boundary conflicts, inheritance conflicts and multiple sales conflicts in Luwero district. On a range of 5-1, the following abbreviations were adopted: Strongly Agree (SA),

Agree (A), Don't Know (DN), Disagree (D), and Strongly Disagree (SD). The findings are presented in table 4.3 below.

**Table 4.3: Land Conflicts**

<b>Land Conflicts</b>	<b>SD (%)</b>	<b>D (%)</b>	<b>DN (%)</b>	<b>A (%)</b>	<b>SA (%)</b>	<b>Mean</b>
<b>Inheritance conflicts</b>						
Inheritance conflicts are common in Luwero district within families.	0(0)	24(6.4)	58(15.5)	170(45.3)	123(32.8)	4.05
Denial of orphans to inherit their parents' property is common in Luwero district.	21(5.6)	19(5.1)	30(8.0)	169(45.1)	136(36.3)	4.01
Inheritance conflicts are common in Luwero district within a clan.	0(0)	29(7.7)	73(19.5)	197(52.5)	76(20.3)	3.85
Disfavoured wives and children not receiving access to fertile land is common in Luwero district.	94(25.1)	69(18.4)	51(13.6)	125(33.3)	36(9.6)	2.84
Unauthorised sale of collectively owned land by head of family is common in Luwero district.	237(63.2)	38(10.1)	25(6.7)	0(0)	75(20.0)	2.03
<b>Boundary conflicts</b>						
Boundary conflicts are common in Luwero district between private individuals and the state over private or state owned land.	0(0)	24(6.4)	21(5.6)	272(72.5)	58(15.5)	3.97
Boundary conflicts are common in Luwero district between clan members due to physically unfixed boundary.	22(5.9)	31(8.3)	21(5.6)	199(53.1)	102(27.2)	3.87
Unclear and non-transparent demarcation of state land is common in Luwero district.	0(0)	27(7.2)	56(14.9)	288(76.8)	4(1.1)	3.72
Boundary conflicts are common in Luwero district between individuals over private land.	207(55.2)	23(6.1)	31(8.3)	0(0)	114(30.4)	2.44
Boundary conflicts are common in Luwero district between administrative units such as villages.	214(57.1)	25(6.7)	40(10.7)	0(0)	96(25.6)	2.30
<b>Multiple sales of customary land</b>						
Multiple sale of state land by public officials is common in Luwero district.	0(0)	30(8.0)	33(8.8)	294(78.4)	18(4.8)	3.80
Multiple sale of privately owned land by private individuals is common in Luwero district.	18(4.8)	29(7.7)	72(19.2)	244(65.1)	12(3.2)	3.54
Allocation of same land parcels by the land Registration office due to technical shortcomings or acceptance of fake titles is common in Luwero district.	59(15.7)	50(13.3)	75(20.0)	128(34.1)	63(16.8)	3.23
Overlapping/contradictory rights due to double allocation of land titles by different institutions all legitimised to do so are common in Luwero district.	139(37.1)	44(11.7)	16(4.3)	160(42.7)	16(4.3)	2.65
Multiple sale of common property is common in Luwero district.	314(83.7)	23(6.1)	28(7.5)	0(0)	10(2.7)	1.32
<b>Overall average mean</b>						<b>3.17</b>

**Source: primary data (2019)**

The results presented in table 4.3 shows that land conflicts was assessed by the respondents as a fairly common practice in Luwero district (overage mean=3.17). This was attributed to the fact that cases of land conflicts in terms of inheritance conflicts, boundary conflicts and multiple land sales conflicts were common in Luwero district.

For instance, majority (45.3%) of the respondents agreed that inheritance conflicts are common in Luwero district within families (mean=4.05), while 45.1% of the respondents also agreed that denial of orphans to inherit their parents' property is common in Luwero district (mean=4.01). Furthermore, 52.5% of the respondents agreed that inheritance conflicts are common in Luwero district within a clan (mean=3.85). However, (33.3%) of respondents were doubtful that disfavored wives and children do not receive access to fertile land (mean=2.84). Likewise, 63.2% of the respondents strongly disagreed that it is not common in Luwero district to have cases of unauthorized sale of collectively owned land by head of family. This implies that even though cases of inheritance land conflicts are common in Luwero district mostly among family members or orphans, unauthorized sale of collectively owned land by head of family is not common.

Furthermore, regarding boundary conflicts, majority (72.5%) of the respondents agreed that it is common between private individuals and the state over private or state owned land (mean=3.97). Additionally, 53.1% of the respondents agreed that boundary conflicts are common in Luwero district between clan members due to physically unfixed boundary (mean=3.87). Correspondingly, 76.8% of the respondents agreed that unclear and non-transparent demarcation of state land is common in Luwero district (mean=3.72). However, 55.2% of the respondents strongly disagreed that boundary conflicts are common in Luwero district between individuals over private land (mean=2.44). Equally, 57.1% of the respondents strongly disagreed that boundary conflicts are common in Luwero district between administrative units such as villages (mean=2.30). This therefore implies that boundary conflicts are only common between private individuals and the state over private or state owned land, due to physically unfixed boundary, and unclear and non-transparent demarcation of state land.

Regarding multiple sales of customary land, majority, (78.4%) of the respondents agreed that multiple sale of state land by public officials is common in Luwero district (mean=3.80).

Furthermore, 65.1% of the respondents agreed that multiple sale of privately owned land by private individuals is common in Luwero district (mean=3.54). In addition, 34.1% of the respondents agreed that allocation of same land parcels by the land registration office due to technical shortcomings or acceptance of fake titles is common in Luwero district (mean=3.23). Equally, 42.7% of the respondents indicated that overlapping/contradictory rights due to double allocation of land titles by different institutions all legitimized to do so are common in Luwero district (mean=2.65). However, (83.7%) of the respondents strongly agreed that multiple sale of common property is common in Luwero district (mean=1.32).

The researcher asked the key informants about the common causes of land conflicts in Luwero district and their responses were summarized as below.

The key informants concurred that conflicts on land are many and range from occupying land illegally, sharing land in ways that are unfair to the vulnerable groups, situations of land grabbing, misunderstandings between landlords and tenants, illegal evictions of lawful tenants, break down in marriages, and the negative effects coupled with unintended consequences of domestic violence.

The underlying causes of land disputes were different, and included:

inappropriate land allocations; increasing land scarcity; lack of regulations on land prices that are increasing rapidly; illegal selling of land; political interference in land transfers, unclear land boundaries that put owners on collision courses; land grabbing; and lack of proper documentation of tenants as bona fide occupants.

Findings from the key informants also indicated a rise in land conflicts, especially between individual landowners. There is high competition for land between local people and various social groups with different interests. The causes of such land disputes vary and range from disagreements on boundary demarcation, to new economic development in the area, to misunderstandings about user rights.

One key informant said that:

*The majority of land disputes in Luwero district are between relatives, neighbors, and families/clans. Most of these disputes are related to the delineation of boundaries or*

*competing claims for land use and ownership. Common types of land disputes in this community include: disputes between junior and senior family members; disputes between widows and members of their late husband's family; land grabbing by neighboring families or villages; selling family land without permission; disputes between landowners and squatters; and disputes related to gifting and other unrecorded transfers of ownership (Clan Leader).*

Furthermore, other key informants indicated other causes of land conflicts such as family disputes, particularly regarding succession, owing to the fact that people died without leaving a will. These disputes arose due to challenges of land fragmentation where almost all land was given away and the small parcels of land left had to be shared among many family members.

One key informant had this to say:

*Land is the key economic asset for most Luwero families. People look at land as their only source of survival. Conflict over land arises when individuals and families compete for use of the same parcel of land. This competition is exacerbated by the perception that land is increasingly scarce due to population increases over the past 20 years. With current population growth, this situation will continue to worsen (Official from the District Land Registry).*

Another key informant added that:

*Cash sales of land have increased in frequency since the end of the war. Conflict arises when one family member sells the land without the consent of his relatives. Youth are most likely to sell family land without permission, pocketing the proceeds for their own use (Official from the District Land Boards).*

Local authorities interviewed frequently mentioned conflicts between children and their parents around ascending partition being a prominent issue: One elder had this to say:

*This is really a very serious issue. Children force their parents to give them ascending partition, said one elder (Elder).*

Another reports that,

*You find that a parent decide to give a big portion of land to one child maybe because he's the one who took care of him/her a lot, which create a conflict among children who don't accept that decision. With small holdings and in a context of land scarcity, families often struggle over inheritance, as well, after the death of a parent. At their death everybody wants to take a piece of land of his preference which create a big conflict among the family (Elder).*

The researcher further asked the key informants this question: How are land conflicts resolved in your community? Their responses were summarized as below:

One key informant had this to say:

*Land conflicts are often resolved through negotiations between conflicting factions and through holding meetings between landlords and tenants. Others choose to forego their interest in land under conflict for the sake of peace. Officials of local governments and area land committees play an essential role in facilitating the resolution of land conflicts. Other useful agents that facilitate the resolution of land conflicts include: neighbors; courts of law including commercial courts; and the office of the RDCs in the district (Official from the Office of the RDC).*

Another key informant indicated that:

*In some cases, mailo land is exchanging hands from old landlords to new ones who have acquired land titles through market exchanges. The attempt of new landlords to know and have some sort of control over their tenants and land boundaries sometimes results in conflicts that undermine peaceful co-existence between landlords and tenants. This has resulted in occasional incidences of evicting of tenants and the killing of landlords. There are efforts to promote the buying-out of the holding(s) of a registered landowner or the two coming to an understanding of sharing land based on the mutually agreed land sharing arrangement. This enables the tenant to receive a land title and the ultimate desired situation where the land ceases to have multiple rights (Official from the District Land Boards).*



Furthermore, a key informant pointed out that:

*Members of the community in this district attempt to resolve land conflicts by engaging elders to assist in identifying and clarifying the true boundaries of land owned. To the extent that elders are unable to resolve these conflicts on land, they stay pending until leaders of the local government councils decide to intervene (Official from District Land Registry).*

Yet again a key informant retorted that:

*Local government officials are frequently approached to resolve land disputes. In some cases, disputants may approach local government officials first, particularly the more accessible LCIs, while in other cases government mechanisms will be accessed only when a conflict is not resolved or is not resolved to one party's satisfaction by customary mechanisms. Formalized dispute resolution is often mistrusted, however. those with money or with relatives in government are more likely to turn to the courts and see the dispute resolved in their favor (Clan chief).*

#### **4.4 The Effect of Commercial Agriculture Practices on Land Boundary Conflicts in Luwero District**

The first objective of this study was to assess how commercial agriculture practices have led to land boundary conflicts in Luwero district. Table 4.4 gives the summary of the findings.

**Table 4.4.1: The Effect of Commercial Agriculture Practices on Land Boundary Conflicts in Luwero District**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.056 <sup>a</sup>	.003	.001	.66010	.003	1.190	1	373	.276

a. Predictors: (Constant), commercial agriculture

The results presented in table 4.4.1 shows that commercial agriculture practices does not have any significant effect on boundary land conflicts in Luwero district (Adjusted  $R^2=0.001$ ,  $p=0.276$ ). This therefore upholds the null hypothesis that there is no significant effect of

commercial agriculture practices on boundary conflicts in Luwero district and rejects the alternative hypothesis. This implies that the use of mechanized agriculture or intensive land use does not cause any boundary conflicts due to unclear and non-transparent demarcation, or physically unfixed boundary.

**Table 4.4.2: Analysis of Variance between Commercial Agriculture Practices and Land Boundary Conflicts in Luwero District**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	.519	1	.519	1.190	.276 <sup>b</sup>
Residual	162.526	373	.436		
Total	163.045	374			

a. Dependent Variable: boundary conflicts

b. Predictors: (Constant), commercial agriculture

The results in table 4.4.2 show that the overall model was not statistically significant. In other words, it shows that commercial agriculture practices are not a good predictor of land boundary conflicts in Luwero district. This is supported by the F-statistics of 1.190 and the reported p-value of (0.276) which was greater than the conventional probability of 0.05 significance level.

**Table 4.4.3: Coefficients Between Commercial Agriculture Practices and Land Boundary Conflicts in Luwero District**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta ( $\beta$ )		
1 (Constant)	3.017	.227		13.302	.000
Commercial agriculture	.078	.071	.056	1.091	.276

a. Dependent Variable: boundary conflicts

The results in table 4.4.3 shows that one (1) unit change in commercial agriculture practices does not significantly cause land boundary conflicts in Luwero district ( $\beta=0.056$ ,  $p=0.276 > 0.005$ ). This implies that commercial agriculture can only explain up to 5.6% cases of land boundary conflicts.

#### 4.5 The Effect of Commercial Agriculture Practices on Land Inheritance Conflicts in Luwero District

The second objective of this study was to establish how commercial agriculture practices have led to land inheritance conflicts in Luwero district. Table 4.5 gives the summary of the findings.

**Table 4.5.1: The Effect of Commercial Agriculture Practices on Land Inheritance Conflicts in Luwero District**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.100 <sup>a</sup>	.010	.007	.57301	.010	3.793	1	373	.052

a. Predictors: (Constant), commercial agriculture

The results presented in table 4.5.1 shows that commercial agriculture practices does not have any significant effect on land inheritance conflicts in Luwero district (Adjusted  $R^2=0.007$ ,  $p=0.052$ ). This therefore upholds the null hypothesis that there is no significant effect of commercial agriculture practices on land inheritance conflicts in Luwero district, and rejects the alternative hypothesis. This implies that the use of mechanized agriculture or intensive land use does not stop any disfavored wives or orphaned children from receiving access to fertile land or inheriting their parents' land.

**Table 4.5.2: Analysis of Variance between Commercial Agriculture Practices and Land Inheritance Conflicts in Luwero District**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.245	1	1.245	3.793	.052 <sup>b</sup>
	Residual	122.472	373	.328		
	Total	123.717	374			

a. Dependent Variable: land inheritance conflicts

b. Predictors: (Constant), commercial agriculture

The results in table 4.5.2 shows that the overall model was not statistically significant. In other words, it shows that commercial agriculture practices are not a good predictor of land inheritance conflicts in Luwero district. This is supported by the F-statistics of 3.793 and the reported p-value of (0.052) which was greater than the conventional probability of 0.05 significance level.

**Table 4.5.3: Coefficients Between Commercial Agriculture Practices and Land Inheritance Conflicts in Luwero District**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta ( $\beta$ )		
1 (Constant)	2.978	.197		15.125	.000
Commercial agriculture	.121	.062	.100	1.948	.052

a. Dependent Variable: land inheritance conflicts

The results in table 4.5.3 shows that one (1) unit change in commercial agriculture practices does not significantly cause land inheritance conflicts in Luwero district ( $\beta=0.100$ ,  $p=0.052 > 0.005$ ). This implies that commercial agriculture can only explain up to 10% cases of land inheritance conflicts.

#### **4.6 The Effect of Commercial Agriculture Practices on Multiple Land Sales Conflicts in Luwero District**

The third objective of this study was to examine how commercial agriculture practices have led to multiple land sales conflicts in Luwero district. Table 4.6 gives the summary of the findings.

**Table 4.6.1: The Effect of Commercial Agriculture Practices on Multiple Land Sales Conflicts in Luwero District**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.331 <sup>a</sup>	.110	.107	.46443	.110	45.952	1	373	.000

a. Predictors: (Constant), commercial agriculture

The results presented in table 4.6.1 shows that commercial agriculture practices significantly explains 10.7% of the total variance in multiple land sales conflicts in Luwero district (Adjusted  $R^2=0.107$ ,  $p=0.000$ ). This implies that 89.3% of the variance is accounted for by other factors other than those considered under this model. This therefore rejects the null hypothesis that there is no significant effect of commercial agriculture practices on multiple land sales conflicts and upholds the alternative hypothesis. This implies that the use of mechanized agriculture or intensive land use can easily bring about multiple sale of state land by public officials, or

multiple sale of privately owned land by private individuals, or allocation of same land parcels by the land registration office to different entities or individuals thus causing land conflict.

**Table 4.6.2: Analysis of Variance between Commercial Agriculture Practices and Multiple Land Sales Conflicts in Luwero District**

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	9.911	1	9.911	45.952	.000 <sup>b</sup>
Residual	80.453	373	.216		
Total	90.364	374			

a. Dependent Variable: Multiple sales conflicts

b. Predictors: (Constant), commercial agriculture

The results in table 4.6.2 shows that the overall model was statistically significant. In other words, it shows that commercial agriculture practices is a good predictor of multiple land sales conflicts in Luwero district. This is supported by the F-statistics of 45.952 and the reported p-value of (0.000) which was less than the conventional probability of 0.05 significance level.

**Table 4.6.3: Coefficients Between Commercial Agriculture Practices and Multiple Land Sales Conflicts in Luwero District**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.839	.160		11.522	.000
Commercial agriculture	.340	.050	.331	6.779	.000

a. Dependent Variable: Multiple sales conflicts

The results in table 4.6.3 shows that one (1) unit change in commercial agriculture practices significantly causes multiple land sales conflicts in Luwero district ( $\beta=0.331$ ,  $p=0.000 < 0.005$ ). This implies that commercial agriculture can explain up to 33.1% cases of multiple land sale conflicts.

## **CHAPTER FIVE**

### **DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS**

#### **5.0 Introduction**

This chapter presents the discussion of the study guided by the study objectives. The discussion of this study findings were done by reviewing related literature, and comparing and contrasting with other previous studies. The study was later concluded and appropriate recommendations accruing from the findings were made.

#### **5.1 Discussion of the Findings**

##### **5.1.1 The Effect of Commercial Agriculture Practices on Land Boundary Conflicts in Luwero District**

The first objective of this study was to assess how commercial agriculture practices have led to land boundary conflicts in Luwero district. The study revealed that commercial agriculture practices does not have any significant effect on boundary land conflicts in Luwero district (Adjusted  $R^2=0.001$ ,  $p=0.276$ ). Regarding agricultural marketing, this study is in line with that of Lashgarara (2008), Dorward et al., (2016); Poulton et al., (2015), Dina (2016), De Putter et al., (2017), and Mutabazi et al. (2018). For instance, Lashgarara (2008) found that agricultural marketing involves finding out what customers want and supplying it to them at a profit. Dina (2016) found that an efficient marketing assures adequacy and stability of food supply in ways that reward farmers, agro-traders and consumers without causing any boundary land conflicts. Dina (2016) further revealed that the major challenges underlying agricultural markets that would hamper commercialization of African agriculture include poor infrastructure, inadequate support services, and weak institutions, increasing transaction costs and the volatility of prices, but not boundary conflicts.

Similarly, Dorward et al., (2016) and Poulton et al., (2015) found that in order to successfully promote agricultural marketing, there must be agricultural commoditization, implementation of incentives to ensure competitiveness and addressing of market barriers, price stabilization mechanisms, industrialization and infrastructure development. In addition, Mutabazi et al., (2018) found that African marketing systems still require a range of “old culture” elements to operate. Market exchanges between farmers and downstream actors in the supply chains rely on

lifelong tacit trading relations mainly based on mutual trust and overly involving physical contacts.

Regarding mechanized agriculture, this study is in line with that of Lavanya (2014), Maharjan and Cheltri (2016), Vinay et al., (2012), Garrity et al., (2012), and von Braun (2013). Lavanya (2014) found that mechanized agriculture includes irrigation systems, food processing and related technologies and equipment, thus has nothing to do with boundary conflicts. Similarly, Maharjan and Cheltri (2016) found that mechanized agriculture which involves the development and management of machines for field production, water control, material handling as well as post-harvest operation has not significant influence on boundary conflicts.

This study is in line with the findings of Bahaet al., (2008), Hoza (2009) and Kizoka (2014) who observed that the existence of frequent land use conflicts is a result of disregarding village boundaries. They further concluded that where village boundary is a problem also land disputes are inevitable. In those areas, demarcation of village boundaries was said to be a priority and solution to both the absence of land use plan and land conflicts. According to Kizoka (2014), setting of village boundaries will result into more village land certification, introduction of land use plans and issuing of customary certificate rights of occupancy to individual villagers, families and group land holders in villages as the case may be.

#### **5.1.2 The Effect of Commercial Agriculture Practices on Inheritance Land Conflicts in Luwero District**

The second objective of this study was to establish how commercial agriculture practices have led to land inheritance conflicts in Luwero district. The study found that that commercial agriculture practices does not have any significant effect on land inheritance conflicts in Luwero district (Adjusted  $R^2=0.007$ ,  $p=0.052$ ).

This study is in line with the findings of studies by Human Rights Watch (2001), Mbonde (2015), and Kloos et al., (2016). For instance, Human Rights Watch (2001) found that in Kenya, in the slums of Nairobi, quite a number of orphaned children turned to a relative after their parents died, only to find the relative more interested in land for commercial agricultural purposes. In addition, a study by Mbonde (2015) revealed that land conflicts between family and family is the second land use conflicts in Tanzania. Some of the families had big pieces of land

inherited from their parents or guardians. The study found that the conflict start when one member of the family wants to dispose a piece of land without agreement with other family members. Also the conflict was attributed to mortgaging a piece of land for agriculture by member of the family without permission from other members of the family.

Furthermore, a study by Kloos et al., (2016) revealed that land conflicts over inheritance and ascending partition, disputes involving informal and polygamous unions, and disputes about land transactions were very common. Disputes over inheritance and gifts of land seemed to be the most common, and were typically between parents/children and siblings, and between siblings upon the death of their parents.

### **5.1.3 The Effect of Commercial Agriculture on Multiple Land Sales Conflicts in Luwero District**

The third objective of this study was to examine the effect of commercial agriculture practices on multiple land sales conflicts in Luwero district. The study revealed that commercial agriculture practices significantly affects multiple land sales conflicts in Luwero district (Adjusted  $R^2=0.107$ ,  $p=0.000$ ). This is because the use of mechanized agriculture or intensive land use can easily bring about multiple sale of state land by public officials, or multiple sale of privately owned land by private individuals, or allocation of same land parcels by the land registration office to different entities or individuals thus causing land conflict.

This study is in line with the studies of Salau et al., (2018), Uganda Human rights Commission (2017), Tirkaso (2013), and Mutengo (2011). For instance, Uganda Human rights Commission (2017) revealed that in Karamoja, there were instances where the rush by individuals to acquire land for commercial purposes was in conflict with the pastoralist lifestyle which favours communal land ownership. In addition, Mutengo (2011) found that the government of Tanzania has sometimes attempted commercial agriculture without due consideration to the consequences with regard to the importance and value of land to its citizens.

Furthermore, Salau et al., (2018) examined the effects of agricultural commercialization at the household level on fertilizer use, demand for hired labour and participation in non-farm employment in Northern Nigeria. The study found that commercialization had the potentials for



increasing the demand for fertilizer usage and hired labour among maize farming households which would require too much hectares of land thus leading to land conflicts for farmers who end up using fraudulent methods of acquiring land.

## **5.2 Conclusion**

**Objective One:** Commercial agriculture practices do not have any significant effect on boundary land conflicts in Luwero district. This is because; the use of mechanized agriculture, land use intensification or marketing of agricultural products has nothing to do with land boundary conflicts. Thus implies that boundary land conflicts does not cause or bring about impediment in agricultural practices in Luwero district.

**Objective Two:** Commercial agriculture practices do not have any significant effect on land inheritance conflicts in Luwero district. This implies that the extensive use of land for commercial agricultural purposes or the adoption of mechanized agriculture does not necessarily translate into land inheritance conflicts. However, it should be noted that inherited land conflicts could affect the agricultural practices of the family members thus addressing it before it goes out of hand is very important.

**Objective Three:** Commercial agriculture practices significantly affect multiple sales of land thus causing conflicts. This is because when farmers decide to practice commercial agriculture by intensifying the use of land such as adopting irrigation methods or using mechanized methods, they might need large junks of land, thus crooked individuals can use such chances to make money by selling the same piece of land to different farmers thus causing conflicts.

## **5.2 Contribution to Knowledge**

Several studies by Jaleta et al., (2016); Tshuma (2017); Sibale (2018); Agriseta (2018) have investigated land conflicts but with mixed results. However, the current study adds to the body of knowledge that even if land conflict is prevalent in Luwero district, commercialization of agriculture is not the cause. Rather other factors such as weak court system, corruption, and old laws that are no longer applicable to the current complex land cases could be some of the causes of land conflicts in Luwero district. However, the study also notes that commercialization of agriculture has led to the temptation of corrupt individuals to exploit farmers by selling the same parcel of land to different farmers thus arousing conflicts.

### **5.3 Recommendations**

#### **Objective One:**

The government of Uganda through the Ministry of Agriculture should develop an enabling environment for a demand-driven mechanization process by developing agro-processing industries. This should be done by intensifying agriculture, including livestock production, by increasing irrigation.

In addition, the local government of Luwero district should explore ways to facilitate long term financing needed for agricultural mechanization. This should involve facilitation and access to long-term sources of finance such as re-financing lines of credit or development trust funds.

Equally, the stakeholders through the main stream media should promote awareness on land related matters and conflict resolutions should be considered as a priority issue for security of land use by smallholder communities.

Last but not least, the elders, clan leaders and the district officials should always establish clear and permanent boundaries such as stone-marks, monuments or plant trees to clearly show land boundaries thus avoiding any future boundary conflicts.

#### **Objective Two:**

The local government should strengthen land mediation and negotiation mechanisms, so that disputes are resolved in a timely and peaceful manner and access is provided equitably and transparently. Activities should include raising awareness of both customary and formal land rights and dispute resolution mechanisms, clarifying disparities between customary land rights and formal land laws, coordinating customary and formal land dispute resolution procedures, training relevant stakeholders in alternative dispute resolution methods, and strengthening legal services and land registration.

In addition, the religious and traditional institutions; should work together to sensitize community on land rights. Through such sensitization, communities will be able to participate effectively in curbing corruption on land as well as increasing their ability to solve land disputes and participate in decision making processes on matters related to land and commercial agriculture.

Regarding inheritance conflicts, the deceased should be encouraged to write their wills when they are still alive, specifying which land and property belongs to who. However, this should be done under the guidance of a lawyer and in the witness of at least two trusted clan elders.

### **Objective Three**

Luwero district local government should motivate farmers to form into small groups comprising of 5-8 farmers for purchase and usage of farm machinery (cooperative management of farm machinery).

Furthermore, individual farmers should increase ‘on-farm’ use of tractors and machinery by promoting neighborhood contracting. This should be promoted by reviewing existing regulations on the use of agricultural tractors for ‘off-farm’ applications such as transport of materials, construction of rural infrastructure (roads, irrigation works, etc.) and land clearing.

Similarly, large and medium farmers can form into small groups of 5-10 farmers, buy large farm machinery like tractors, paddy trans planters and harvesters and use them with meticulous planning depending on distance between farms, size of farm, and time of operation.

On the other hand, in order to avoid or curb multiple sales of land, land buying should be in the witness of the local council (LC1 and II), clan elders, government representatives (for example officials from the land board and land registration departments), and an advocate.

### **5.4 Areas for future studies**

This study was done only in one district within the central region in Uganda. There is need for a future study to cover all the districts within the central region of Uganda so as to come up with comprehensive findings and conclusion regarding commercial agriculture and land conflicts in one zone in Uganda.

In addition, the study used only descriptive design using questionnaires and interviews, however, a future study using longitudinal design should be used expanding a period of 10 years to substantiate the impact of commercial agriculture on land conflicts in Luwero district.

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## APPENDICES

### APPENDIX I: INFORMED CONSENT

I am giving my consent to be part of the research work of TSHIANI MBUYI Claude, which will focus on **“commercial agriculture practices and land conflicts increases in Uganda, a case of Luwero district”**.

I am assured of confidentiality, privacy and anonymity and I will be given right to refuse participation and can withdraw my participation any time.

I have been notified that the research is voluntary and the result will be given to me if I request for it.

Initial:.....

Date:.....

## APPENDIX II: QUESTIONNAIRE

**To be answered by the following groups of respondents:** Local government officials (LC1, LCII & LCIII), Local land committee, Tenants (Subsistence/commercial Farmers), and Landlords (Extensive Farmers).

### Section A: Demographic Characteristics of the Respondents

**Instruction:** please tick the option that best describes your status

#### 1. Gender

a) Male ☐

b) Female ☐

#### 2. Age

a) 20-30 ☐

b) 31-40 ☐

c) 41-50 ☐

d) 50 and above ☐

#### 3. Education

a) None ☐

b) Primary ☐

c) Secondary ☐

d) Diploma ☐

e) Bachelor Degree ☐

f) Master's Degree ☐

#### 4. Type of Farming Method

a) Subsistence ☐

b) Commercial Farming ☐

#### 5. Size of Land

a) Less than 1 hectare ☐

b) 1-5 Hectare ☐

c) 6-10 Hectare ☐

d) More than 10 hectare ☐



## 6. Type of Land Ownership

- a) Inherited  b) Rented
- c) Purchased with title  d) Purchased without title
- d) Borrowed

## Section B: Commercial Agriculture

This section is for capturing information regarding the practice of commercial agriculture in your community. Please tick the following options to show the extent to which you agree or disagree with the statements in the following table. Use the following Likert scale to rate your response: 1=strongly disagree; 2=disagree; 3=not sure; 4=agree; and 5=strongly agree.

#	Commercial Agriculture	1	2	3	4	5
<b>A</b>	<b>Agricultural marketing</b>					
1	There is a ready market in this community where farmers can easily sell their farm products.					
2	I have joined a co-operative which has enabled me to know the availability of the markets for my products.					
3	The government has often marketed our products and sometimes provided market for our products,					
4	The road network in this community enables easy access to the market.					
5	I mostly market my farm products on social media.					
<b>B</b>	<b>Mechanized agriculture</b>					
1	I have adopted the use of tractors in my farm.					
2	I have adopted the use of modern machinery in my farm.					
3	I have adopted the use of trucks to transport my farm products.					
4	I have adopted the use of modern storage methods to store and preserve my farm products.					
5	I have adopted the use of modern methods to process my farm products.					
6	I have adopted the use of value-addition to make my farm products marketable.					
<b>C</b>	<b>Land use intensification</b>					
1	I have adopted the use of improved seeds in my farming methods.					
2	I have adopted the use of cross-breed animals and birds in my farming methods.					
3	I have adopted the use of irrigation scheme in my farming methods.					
4	I have adopted the use of pesticides and disease control methods in my farming methods.					
5	I have adopted the use of modern machinery in my farming methods.					
6	I have increased the number of labourers in my farm.					

## Section B: Land conflicts

This section is for capturing information regarding the most common causes of land conflicts cases in this community. Please tick the following options to show the extent to which you agree or disagree with the statements in the following table. Use the following Likert scale to rate your response: 1=strongly disagree; 2=disagree; 3=not sure; 4=agree; and 5=strongly agree.

#	Land conflicts	1	2	3	4	5
<b>A</b>	<b>Inheritance Conflicts</b>					
1	Inheritance conflicts are common in Luwero district within families.					
2	Inheritance conflicts are common in Luwero district within a clan.					
3	Denial of orphans to inherit their parents' property is common in Luwero district.					
4	Disfavoured wives and children not receiving access to fertile land is common in Luwero district.					
5	Unauthorised sale of collectively owned land by head of family is common in Luwero district.					
<b>B</b>	<b>Boundary Conflicts</b>					
1	Boundary conflicts are common in Luwero district between individuals over private land.					
2	Boundary conflicts are common in Luwero district between clan members due to physically unfixed boundary.					
3	Boundary conflicts are common in Luwero district between administrative units such as villages.					
4	Boundary conflicts are common in Luwero district between private individuals and the state over private or state owned land.					
5	Unclear and non-transparent demarcation of state land is common in Luwero district.					
<b>C</b>	<b>Multiple sales of customary land</b>					
1	Multiple sale of privately owned land by private individuals is common in Luwero district.					
2	Multiple sale of common property is common in Luwero district.					
3	Allocation of same land parcels by the land Registration office due to technical shortcomings or acceptance of fake titles is common in Luwero district.					
4	Overlapping/contradictory rights due to double allocation of land titles by different institutions all legitimised to do so are common in Luwero district.					
5	Multiple sale of state land by public officials is common in Luwero district.					

**THE END**

### **APPENDIX III: KEY INFORMANT INTERVIEW GUIDE**

**To be answered by the following key informants:** traditional/cultural institutions (Clan Chiefs & Elders), Leaders of farmers' associations, District Land Registry officials, District Land Boards officials, and Officials from the Office of the RDC.

1. What is the extent to which commercial agriculture is practiced by the farmers in Luwero district?
2. What are the common causes of land conflicts among the people of Luwero district?
3. How are land conflicts resolved in Luwero district?

**THE END**