

**ASSESSING THE LAND CONFLICTS AND MANAGEMENT STRATEGIES
USED BY SMALLHOLDER IRISH POTATO (*Solanum tuberosum*)
FARMERS IN KISORO DISTRICT, UGANDA**

BY

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DECLARATION

I, Gad Kwizera, hereby declare that this thesis is my original work and has never been presented by me or any other researcher to any institution of higher learning for any award.

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APPROVAL

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DEDICATION

This thesis is dedicated to all smallholder Irish potato farmers in Uganda for they will find it an invaluable resource in increasing productivity of Irish potatoes basing on the findings, conclusions and recommendations made.

ACKNOWLEDGEMENTS

I would like to thank God for the work done. It is all by His mighty power that I have managed to go up to the production of this document. I thank Him for the protection while doing this work as required.

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LIST OF ABBREVIATIONS AND ACRONYMS

Av.	Average
DLO	District Lands Officer
DPO	District Production Officer
DRC	Democratic Republic of Congo
FGD	Focus Group Discussion
Ha	Hectare
ha⁻¹	Per Hectare
IYP	International Year of the Potato
KDLB	Kisoro District Land Board
KDLG	Kisoro District Local Government
Kg. ha⁻¹	Kilograms Per Hectare
LC	Local Council
m	Million
MoLHUD	Ministry of Lands, Housing and Urban Development
Mt	Metric tonnes
MZOs	Ministry Zonal Offices
sq. km	Square Kilometre
sq. m	Square metre
UBOS	Uganda Bureau of Statistics
UIPS	Uganda Irish Potato Sector
UNEP	United Nations Environment Program
UNIFTPA	United Nations Interagency Framework Team for Preventive Action

ABSTRACT

Celebrated in 2008, the United Nations International Year of the Potato (IYP) highlighted the important role of the Irish potato in agriculture, the economy and world food security. Globally, agriculture and food security are affected by a number of constraints including land conflicts. As population grows, land becomes scarce and its demand rises. In Uganda and Kisoro District in particular, there is an increasing level of land conflicts needing mitigation among smallholder Irish potato farmers. Thus the study was conducted to assess land conflicts and management strategies used by smallholder Irish potato (*Solanum tuberosum*) farmers in Kisoro District, Uganda. The specific objectives were to: determine the nature and effects of land conflicts on the productivity of Irish potatoes; establish management strategies used by smallholder farmers to resolve the land conflicts in Kisoro District. A descriptive case study design was adopted for the study. Data was collected from 202 respondents using questionnaires, in-depth interviews and focus group discussions. Qualitative data collected on the nature and management of land conflicts was analysed using percentages and thematic analysis or as verbatim or paraphrased statements while quantitative data on effects of land conflicts on Irish potato productivity was analysed using a paired sample t-test. Findings indicated that 66.8% of smallholder Irish potato farmers in Kisoro District were directly experiencing land conflicts arising mainly from land inheritance, poor and unclear land demarcations. Further findings indicated that land grabbing, borderline fights, illegal relocation of boundaries, selling to multiple buyers and disagreements among siblings regarding sharing of land were experienced. The occurrence of land conflicts resulted into court injunction on the use of the land, leaving land idle for seasons, fights and quarrels that resulted into injuries, loss of finance and time that affected smallholder Irish potato farming. A t-test was done for the mean yield of 4728kg ha^{-1} before conflict and 3789kg ha^{-1} after the conflict at 0.05 level of significance. The results indicated that land conflicts had a significant effect on Irish potato productivity ($p\text{ value}=0.003<0.05$), which means conflict lower yields thus productivity. The yield and income from Irish potatoes were found to reduce by 20% as a result of the land conflicts. The strategies used by smallholder farmers to manage the conflicts include; court arbitration, seeking mediation from family members and clan elders, proper fencing of the land and on rare occasions, the conflicting parties peacefully resolved their differences. Based on the findings, it was concluded that land conflicts had significant delays on Irish potato production activities thus a possible reduction in yields hence needing redress. Therefore, it is recommended that land laws are reviewed, people are educated on land title acquisition and local leaders are empowered to help in proper demarcation of land. For further research study, the researcher recommends examining the role of local leaders and culture in land conflict management in rural farming communities in Uganda.

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

The Irish potato is the world's most important root and tuber crop (Zhongqi, Robert & Wayne, 2012). It is grown in more than 125 countries and consumed almost daily by more than a billion people. Hundreds of millions of people in developing countries depend on potatoes for their survival. Celebrated in 2008, the United Nations International Year of the Potato (IYP) highlighted the important role of the potato in agriculture, the economy and world food security. Potato production and consumption is booming worldwide, with ever greater quantities being processed for the convenience food and snack industries, while its importance as a subsistence crop continues to expand.

The Irish potato (*Solanum tuberosum*) has helped sustain humanity for centuries, and now ranks as the leading non-grain commodity in the global food system with production exceeding 329 million tonnes in 2009 (NeBambi, Oscar, Anton & Daniel, 2009). In fact, the developing world's potato production exceeded that of the developed world for the first time in 2005 (Zhongqi *et al.*, 2011). Millions of farmers depend on potatoes for subsistence and as a local cash crop. Recent uncertainties in world food supply and demand have placed the potato high on the list of recommended food security crops (Lutaladio & Castaldi, 2009). Potato production potential is exceptionally high as approximately 80% of the plant's biomass constitutes economic yield. African nations exhibiting substantial growth in potato production (both in tonnes and hectares) were Algeria, Cameroon, Mali, Namibia, Niger, Tanzania, and Uganda with average yields

(for 2009) ranging from 2.2 to 25.1 tonnes ha⁻¹ (NeBambi, *et al.*, 2009). According to the Uganda Census of Agriculture of 2008/2009, Kisoro District was the leading producer of Irish potatoes in Uganda (UBOS, 2010).

Many developing countries wish to enter lucrative emerging markets for potatoes and potato products, but to do so they need to make major improvements in the productivity, profitability and sustainability of their potato subsectors. For example, potato yields in the developing world average around 10 to 15 tonnes per hectare, less than half of average yields achieved by farmers in Western Europe and North America (NeBambi, *et al.*, 2011).

Food and Agriculture Organisation, FAO, (2011_b) indicates that there is a global reduction in the optimum land size for smallholder farmers from the recommended 0.9 hectares (ha) to 0.5ha per household. Improvement in the productivity of Irish potatoes requires an increase in the size of land under cultivation of the same crop (Andreu, Guevara, Wolski, Daleo & Caldiz, 2006). There is an inverse relationship between land and the population. The increase in population is thus negatively affecting spatial food production systems. By the year 2017, an estimated 0.38 billion tonnes of Irish potatoes were being grown (FAO, 2011_a). The production of Irish potatoes however has reduced in some countries like China, India, and a number of African countries including Rwanda, Malawi, Uganda and Nigeria, hence, a number of communities are missing the food, income and employment from Irish potatoes (Mesfin, Gebrerufael & Feleke, 2014).

The global land area is 26.3 billion hectares (ha); of this, about 14 billion ha are currently being used for cultivation of agricultural crops such as Irish potatoes (FAO, 2011_b).

About 80% of the world poor live in rural areas and derive their livelihood from land through agriculture. However, they are concentrated on small lands with unreliable rainfall and poor fertility. Worse off, these small plots of land are also characterised with conflicts (Rugadya, 2009).

The population growth is almost doubling in most countries, coupled with land scarcity and land tenure practices, land conflicts have become inevitable. Uganda's population grows at 3.4% per annum which mounts more pressure on land as a central factor of agricultural production (Uganda Bureau of Statistics, UBOS, 2014). As a result, output from Irish potatoes has dropped. While it may be seen as a natural and integral part of everyday life, conflicts over land have become a great challenge in many countries. Specific cases of detrimental land conflicts are cited in Indonesia, Brazil China, India and in Africa. Land conflicts pose a threat to rural agriculture in most African countries (Deininger & Castagnini, 2006; Gyamera, Duncan, Kuma & Arko-Adjei, 2016; Yamano & Deininger, 2005). The population in many African countries is almost doubling compared to early 1950s and 60s. This rapid population growth comes with other challenges especially for agro-based economies, including exerting pressure on land use. This challenge is deepening in Kenya, Uganda, Ghana and Rwanda. Kagwanji (2009) asserts that, across eastern Africa, the question of land use, ownership and access to increasingly scarce land resources has been at the centre of ethnic group related conflicts. These land conflicts seem to relate to a number of people's behaviour, activities, and ownership interrelated factors among which is land use pattern and competition for land resources (Quan, Su & Camilla, 2004). All the East African states, including South Sudan are characterized with land conflicts especially among rural smallholder farmers.

With Uganda's population at about 34.9 million people, land is prone to be more scarce and the possibility of land conflicts to occur will be high (UBOS, 2014). In Uganda, land conflicts are intense and have been in existence for a long time and they have worsened since the early 1990s and 2000s in many regions of the country. The north is on top of the most land conflict vulnerable communities, followed by the western and Karamoja regions. The fertile zones of south western Uganda are also victims of land conflicts with an increasing number of landless smallholder farmers (Mugisha, 1998). The causes of land conflicts in Uganda are diverse arising in the deficits in conflict resolution and land administration, corruption, ignorance of the law, population growth, although this may vary from one district to another (Rugadya, 2009).

Studies show a number of areas severely hit by land conflicts in Uganda, including districts of Kibaale, Kisoro, Bulambuli, Kamwenge, and most parts of Karamoja region (Deininger & Castagnini, 2006; Joireman, 2008), and to Muyanga and Gitau (2013), this could be one of the aspects to associate with the decline in agricultural output in these districts. Specifically, this study focused on Kisoro District in south western Uganda. There are a number of land related conflicts in Kisoro District and there was need for mitigation measures to end and resolve the conflicts with proposed focus on this area of study.

Competition over land access and acquisition present a big challenge to agricultural productivity in Kisoro District in south western Uganda. Continuous land conflicts and land grabbing are increasing food insecurity and lowering agricultural output (Jaramogi, 2012). With a fast growing population density of 363persons/sq. km in 2014, land is prone to be scarcer, and instances of galloping land conflicts to rise in Kisoro District (UBOS, 2014). This scenario of land conflicts has related effects that are visible in the community of Kisoro, which ought to be properly handled. These effects are acute and call for having recommendable land conflict management strategies for smallholder farmers (Deininger & Castagnini, 2004). Land conflict management is therefore important if agricultural productivity is to be sustained on plots under conflict. There are a number of suggested approaches which are general and do not specifically address the challenge of land conflicts for smallholder farmers in Irish potato production.

It is important to note that the smallholder farmers in Kisoro District have experienced land conflicts. A study conducted by Mercy Corps in 2011 found out that there had been nobody who had not been affected by land conflicts in Acholi land. The same applied to Bufumbira land in Kisoro District. Despite the challenge, the findings indicated that the farmers could begin with a customary strategy involving elders and local committees. Should customary strategies fail, they would rush to the formally established institutions of the government for help. Worth noting is that the formal strategy could be decried due to taking what was called unnecessarily long time. Several factors pose a challenge to the resolution of land conflicts, including the existence of multiple dispute resolution strategies, lack of coordination between dispute resolution strategies, the erosion of

customary dispute resolution strategies, lack of government capacity and political will to implement or enforce land policy and, corruption. The variety of conflict resolution strategies has led to confusion about who has the authority to resolve land conflicts (Mercy Corps, 2011). Despite these efforts, the land conflicts have persisted in many communities within Kisoro District, especially in Bufumbira South.

With a population size of 287,179 persons settled on only 644 square kilometres (km²) of open land in addition to forests and swamps in Kisoro District, the intensity of land conflicts is yet to increase. Given that Irish potatoes form not only a source of subsistence food but also grown for commercial purposes, land for smallholder farmers is increasingly getting scarce and associated with conflicts. Studies show that the evolution of land conflicts is also associated with lack of awareness and mitigation measures to provide immediate resolutions. As a result, most households in Kisoro District are engaged in land conflicts especially over land most often used for Irish potato production activities (Kisoro District Local Government, KDLG, 2008).

A number of scholars have studied land conflicts. Studies on land conflicts in Uganda concentrate on the Acholi and or Northern Uganda and less on smallholder farmers (Mercy Corps, 2011; Rugadya, 2009). The impact of land conflicts on smallholder farming has also been less studied, except for one by Muyanga and Gitau (2013) conducted in Kenya. Nevertheless, Muyanga and Gitau, (2013) also did not focus specifically on Irish Potatoes. In Kisoro District, 36% of the rural households are involved in some form of land conflicts some of which have lasted for years, and yet no

recent study focused on this impasse to suggest possible land conflict management strategies (Mugisha, 1998; UBOS, 2014). It was therefore, deemed necessary to undertake a study so as to understand how to manage land conflicts and explore strategies that could be utilized by smallholder Irish Potato farmers in managing land conflicts in Bufumbira South, Kisoro District.

1.2 Problem Statement

Uganda's population density is 174persons/sq. km. In particular, Kisoro District's population density is 446persons/sq. km (UBOS, 2014). This population requires major drivers to increasing food productivity for the staple foods like Irish potatoes to feed the growing population. However, as the population multiplies, land becomes more scarce leading to competition for the resource since land is considered a source of livelihood in agrarian economies. Kisoro District's land size of 64,400 ha places the 287,179 households to an average of 1ha per household which is much less than the minimum recommended 2ha for a smallholder farming household (FAO, 2011b; UBOS, 2014). Such population versus the available land for agricultural production explains the competition on the land that results into conflicts. The conflicts result into a drop in Irish potato productivity. Nevertheless, the crop's historical importance in the study area can be evidenced from the Irish potato variety 'Kisoro'. In Kisoro District, 36% of the rural households are involved in some form of land conflicts some of which have lasted for many years (Mugisha, 1998; UBOS, 2014). Majority of these land conflicts are among smallholder Irish potatoes farmers (Kisoro District Local Government, KDLG, 2017). However, there had been no detailed information regarding the nature of these land conflicts and the effects these conflicts have on smallholder Irish potato production. In

addition, there has not been a recent study to suggest possible land conflict management strategies for smallholder Irish potato farmers in Kisoro District to address these conflicts. This study was therefore envisaged to examining land conflicts and their management strategies among smallholder Irish potato farmers in Kisoro District.

1.3 Objectives of the study

1.3.1 General objective

To overall objective was to investigate the land conflicts and management strategies used by smallholder Irish potato (*Solanum tuberosum*) farmers to reduce land conflicts in Kisoro District.

1.3.2 Specific objectives

The specific objectives of the study were to:

- (i) Describe the nature of land conflicts among smallholder Irish potato farmers in Kisoro District.
- (ii) Determine the effects of land conflicts on the productivity of Irish potatoes in Kisoro District
- (iii) Establish the management strategies used by smallholder farmers to manage land conflicts in Kisoro District.

1.4 Research questions

To address the above research objectives, the following research questions were explored:

- (i) What is the extent of land conflicts experienced by smallholder farmers in Kisoro District?
- (ii) What are the types of land conflicts among smallholder Irish potato farmers in Kisoro District?
- (iii) What are the causes of land conflicts affecting Irish potato farming activities in Kisoro District?
- (iv) In which way have land conflicts affected Irish potato production activities in Kisoro District?
- (v) How have land conflicts affected the yield productivity of Irish potatoes in Kisoro District?
- (vi) How have land conflicts affected the income productivity of Irish potatoes in Kisoro District?
- (vii) What land conflict management strategies are being used by smallholder farmers to resolve land conflicts in Kisoro District?

1.5 Significance of the study

The study was conducted due to the unavailability of data regarding the nature, effects of land conflicts and their management specific to the smallholder farmers and also the need to mitigate encumbrances in food production in highly populated areas in Uganda. The findings of the study add to the existing literature on land conflicts, causes, effects and their management in the Ugandan context pertaining to smallholder Irish potato

production. The data generated may help smallholder farmers to understand the nature of land conflicts so as to identify the relevant strategies/approaches to managing the conflicts. Evidence gathered from the findings of the study may be important for reforming the land law, policy and ordinances for peaceful coexistence among farmers. Policy makers enabled to design appropriate interventions that ought to enhance appropriate (time-saving and less costly) strategies for better management of land conflicts among smallholder Irish potato farmers.

1.6 Scope of the Study

This covers the geographical, content and time scope for the study on assessing the land conflicts and management strategies used by smallholder Irish potato farmers in Kisoro District.

1.6.1 Geographical Scope

The study was carried out in Kisoro District. Kisoro District is bordered by Kanungu District to the north, Kabale District to the east, Rwanda to the south and the Democratic Republic of Congo to the west. The town of Kisoro is approximately 45 kilometres by road, west of Kabale and km by road south west of Kampala. The geographical coordinates of Kisoro District are 1°17'06.0"S, 29°41'06.0"E (Latitude: 1.2850; Longitude: 29.6850). Kisoro District is at an elevation of 6,200 ft (1,890 m) south of the Muhavura ranges. According UBOS, (2014), Kisoro District has a total population of 287,179 people settled on 644sq. km of land (UBOS, 2014; KDLG, 2008). Four sub counties of Nyarusiza, Nyakinama, Muramba and Chahi were covered in Bufumbira South Constituency for this study.

1.6.2 Content Scope

The study was limited to agricultural land conflicts with particular focus on Irish potato productivity. The nature (extent, causes and types) of land conflicts, how the conflicts affect Irish potato productivity and the management of the conflicts were studied. Information based on the aforementioned aspects was collected to establish the strategies of management of land conflicts by the smallholder farmers.

1.6.3 Time Scope

The study focused on data available for the seasons of the years 2016-2017. This is because within this period, the data collected was recent enough to guide the recommendations. Also, there was a reported increase in land conflict related instances among smallholder Irish potato farmers in Kisoro District (KDLG, 2018; Kisoro District Police Records, 2017) especially in Bufumbira South, which is dominantly an Irish potato growing area. Therefore, information within this period (2016-2017) suitably answered the study purpose and objectives regarding land conflict management strategies used by smallholder Irish potato (*Solanum tuberosum*) farmers in Kisoro District.

1.7 Limitations of the study

In undertaking this study, a number of challenges were experienced that limited the smooth flow of the study. However, mechanisms to mitigate the challenges for the successful conduct of the study while protecting the validity and reliability of the results were put in place as follows;

- i. At first, some respondents refused to give in their consent to be part of the study and to provide the information required. They were however later sensitized about the value of the study to them which encouraged them to participate in the study. This delayed the progress of the study although the researcher prepared the study schedule to accomplish the research study activities in time.
- ii. Budget constraints were encountered but using educated and trained research assistants helped to minimise the costs while producing the required work quality in respect to the time schedule.
- iii. Coordinating the various research assistants in the four Sub-counties within a rugged terrain was a bit difficult since the study descriptive case study design. The researcher, however, used a motorcycle to run through the sub counties guiding the activities of research assistants.
- iv. Some respondents delayed to complete the questionnaires but through regular follow-up, the respondents were encouraged to fill the questionnaires and also, back up information had been collected through interviews.
- v. Some plots under conflict were far from the homesteads of the owner farmers hence affected data collection through failure to observe those plots. Using the accessible nearby plots, the farmers were asked to highlight the changes and indicators resulting from conflict on their land.

1.8 Conceptual framework

Independent Variable

Dependent Variable

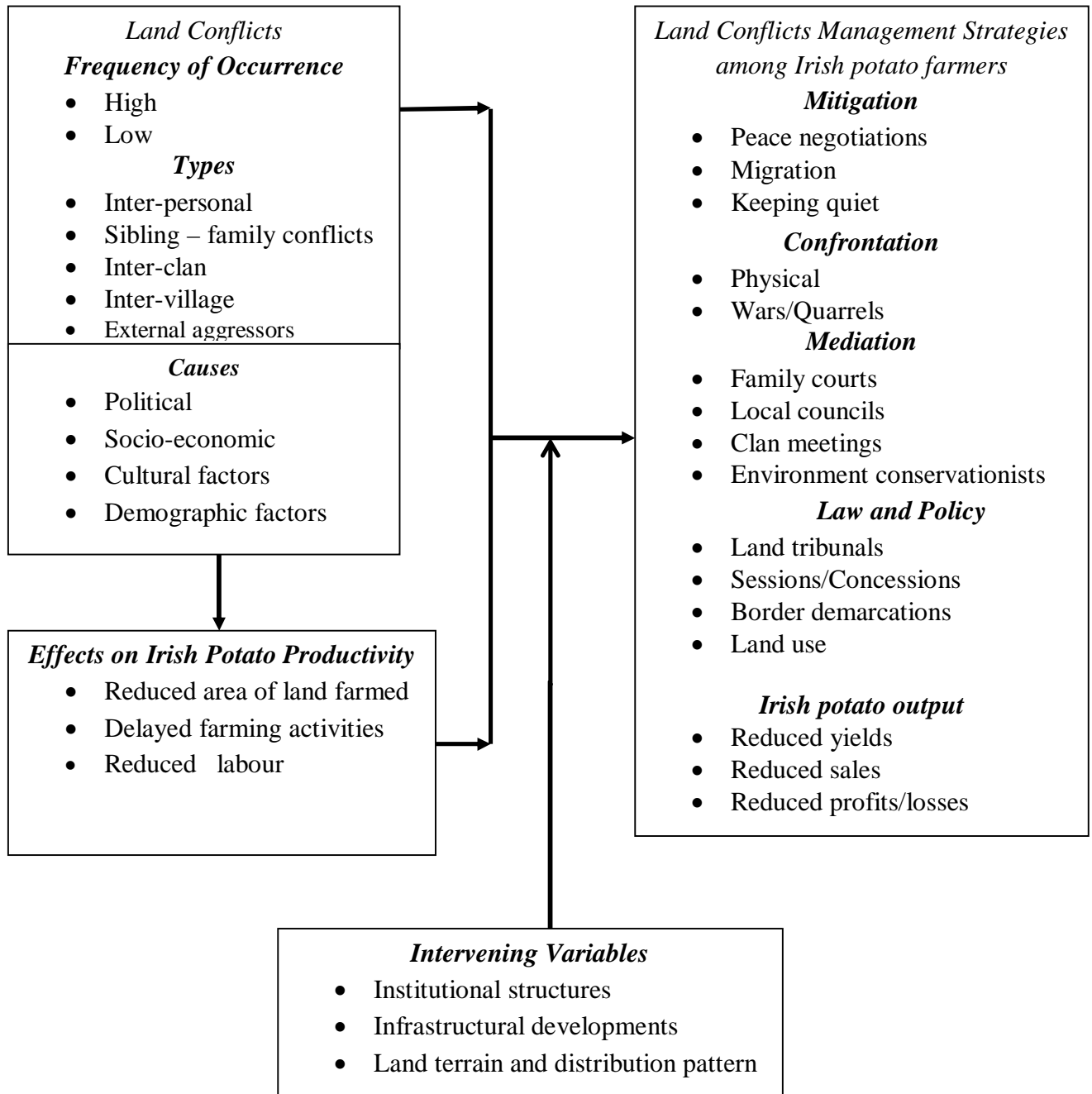


Figure 1.1: Conceptual framework on the land conflict management strategies among smallholder Irish potato (*Solanum tuberosum*) farmers in Kisoro District.

Source: Adapted from Castagnini and Deininger (2004); Yamano and Deininger, (2005).

Figure 1.1 shows a conceptual framework for land conflicts and management strategies used smallholder Irish potato farmers in Kisoro District. The concept of land conflicts and its effects were the independent variables. The independent variables were investigated basing on the extent to which land conflicts occurred among households per village visited, type of land conflicts experienced, causes and effects of land conflicts. These were thought to influence the dependent variables. In addition, the independent variables cited would be influenced by institutional structures for land conflict management, infrastructural development, terrain and land distribution patterns. These were key factors considered as intervening variables which were held constant in the study.

As a result of the prevailing land conflicts, it was considered that these conflicts have had a bearing on smallholder Irish potato farmers. Some of the possible effects were that land conflicts affect farming activities by reducing yield and area of land farmed, reduce labour and waste what would be capital needed in production. This subsequently mandated the need to examine land conflict management strategies being adopted in the study area.

The study considered land conflict management strategies as dependent variable on land conflicts. This was examined under four (4) dimensions: mitigation, confrontation, mediation and law and policy. Mitigation would be measured basing on peace negotiations, or decision by the parties involved migrating or keeping quiet. On the

contrary, confrontation could either be in mere quarrels and wars while mediation was considered in terms of courts, clans and family interventions. The strategies could also mean using the law and policy strategies. These meant adhering to the legal approach to redress the land conflicts. This can include setting up a land tribunal, calling for affected parties to secede from the land, set land border demarcations. These were considered to be key strategies that could be used hence were investigated for their use by farmers in the study.

Land conflict management was considered as a dependent variable basing on the extent to which people and the leadership of Kisoro District managed the issues of land conflicts and their effects. Therefore, this study focused on those land conflict management strategies that were practically being undertaken in Bufumbira South. Henceforth, the study examined in an in-depth manner, different land conflicts and how these were being handled in Kisoro District to lessen their effects on Irish potato production and productivity.

1.9 Operational definitions

Conflict management: This refers to the provision of a solution that is acceptable by the majority and relevant to end a conflict (Bercovitch, 2011). The various ways or methods smallholder farmers use either individually or collectively to resolve land conflicts.

Conflict management strategy: These are approaches/ways in which conflicts are handled through providing competing, collaborating, compromising, avoiding and accommodating the endeavors to address the various conflicts in the given area (Kodikal

& Rahman, 2014). In this study, it meant all the mechanisms/approaches/strategies to mitigate the effects of land conflicts on Irish potato production and productivity.

Irish potato productivity: The production of Irish potatoes and their scope in Uganda is described in the Uganda Irish Potato Sector, UIPS, (2015) as yield and income outputs per hectare. In this study, Irish potato productivity was explored to mean a measure of the benefit from an Irish potato production enterprise that is expressed as yield, land size under cultivation and income per hectare.

Land conflict: Conflicts over land emerge and several times may be short term or perennial depending on the parties involved (Filley, 2012). According to this study, it was considered to mean any contest/disagreement on access, acquisition, use, management and ownership of land that has an effect on Irish potato productivity.

Smallholder farmer: According to Aaron (2012), a smallholder farmer is that farmer owning small-based plots of land on which they grow subsistence crops and one or two cash crops relying almost exclusively on family labour. In the context of this study, a smallholder farmer is one owning small-based plots of land usually two hectares or less on which he grows Irish potatoes relying almost exclusively on family labour.

Strategy refers to the adaptation, suggestions, ideas that are put in place to address a given phenomenon at a given point in time (Nickols, 2016). In this study, strategy was used to refer to approaches being used to address land conflict management at various intervals of time in Kisoro District.

Conflict: Conflict is a struggle or contest between people with opposing needs, ideas, beliefs, values, or goals (Diez, Stetter & Albert, 2006). In this study, a conflict was used as a constraining contest/disagreement in which a smallholder farmer is involved and has effects on Irish potato productivity.

Policy is a formal document or framework in which a government or other institution outlines goals and the guiding principles and strategies for achieving those goals; and gives the authority to undertake actions in pursuit (Torjman, 2005). In this study it was used to refer to the land related policies that are operative and/or in existence in Uganda.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The study investigated land conflicts and management strategies used by smallholder Irish potato (*Solanum tuberosum*) farmers. Literature was reviewed according to the study objectives that constituted the three subthemes that include the nature (extent, types and causes) of land conflicts, effects of land conflicts on production activities and productivity of Irish potatoes and the management strategies used by smallholder farmers to mitigate the land conflicts.

2.2 Trends of Irish Potato Production in Uganda

Irish potato (*Solanum tuberosum*) is one of the main food crops grown in Uganda in addition to bananas, sweet potatoes, cassava, maize, beans and groundnuts. Uganda is the ninth largest producer of potato in Africa with an annual production of 188,000 tonnes harvested from about 39,000 ha per year (FAOSTAT, 2014). The crop is particularly suited to the land-scarce farm households at higher elevations and it fits well into the country's farming and food systems (Aliguma, Magala & Lwasa, 2007). It is high yielding, highly nutritious both in protein and carbohydrates, has a short maturity period and can be stored for a long time under good storage conditions.

The national production of Irish Potatoes during the 2008/2009 Agriculture census was 154,000 Metric tonnes (Mt), which came from an estimated area of one 33,000 Ha. In terms of regions, the Western Region reported the highest production of Irish Potatoes

with the total output of 135,000 Mt (87.6%) followed by the Central Region with 13,000 Mt (8.6%) and the least was the Northern Region with 1,000 Mt (0.8%). The western Region with 5.2 Mt/Ha had the highest Irish Potato yield, followed by the Eastern Region with 3.6 Mt/Ha while the Northern Region with 2.2 Mt reported the least yield (UBOS, 2010).

The major potato producing districts are Kabale, Kisoro, Rukungiri, Mbarara, Kasese, Kabarole, Masaka, Mubende, Mbale, Kapchorwa and Nebbi (Aliguma, *et al.*, 2007). Formerly, the crop was restricted to the south-western and eastern highlands of Uganda but has currently expanded to mid-elevations in the country. Essentially, potatoes were a food security crop, however, today they constitute a major source of cash income to many rural and urban households resulting from increased demand due to population growth and urbanization.

The agriculture census conducted in 2008/2009 indicates Kisoro district was the leading producer of Irish Potatoes with a total of 138,000 Mt from 3,000 Ha followed by Isingiro District with 111,000 Mt from an area of 2,000 Ha and the third district was Kabale with 61,000 Mt from 9,000 Ha. Nakaseke and Lira districts were the least producers of Irish Potatoes with 48 Mt and 53 Mt respectively (UBOS, 2010).

Of the total potato production in Uganda, 10% is used as seed, 10% is wasted and 80% is consumed within the country. The bulk of the potato crop in Uganda is sold as ware potato and consumed as boiled vegetable. Most potato farmers traditionally produce and

sell ungraded, mixed varieties of potatoes at the farm gate. These farmers have a number of potato varieties with various attributes from which to choose and the most common commercial varieties are the Victoria type followed by Rutuku. Both of these varieties are strongly adopted in south-western Uganda. Other varieties cultivated on a small scale include Kisoro, Kabale, Cruza, Sangema, Singo/Musitamya and NAKPOT (UBOS, 2003).

Table 2.1 illustrates the Uganda's of Irish potato production levels per year for the past 11 years since from year 2000.

Table 2.1 Uganda's Irish Potato Production Levels since Year 2000

Year	('000 tonnes)
2000	478
2001	508
2002	546
2003	557
2004	573
2005	585
2006	628
2007	650
2008	670
2009	689
2010	669

Source: UBOS, 2005.

It can be observed that the total production of Irish potatoes increased by about 4.5% from the year 2000 to 2009 and dropped by about 3%. Factors leading to such trend is worth investigating so as to realise the required Irish potato yield potentials under optimum conditions.

2.3 Nature of Land Conflicts in Africa

The nature of land conflicts was studied under the extent, causes and types of land conflicts among smallholder farmers in developing countries.

2.3.1 Extent of Land Conflicts

Global and scholarly research has shown that land conflicts remain a core global challenge in many countries despite the presence of land laws, policies and statutes in many Sub-Saharan countries (Adam & Humle, 2013; Boone, 2013; Funder, Signe, Ginsborg & Nanna, 2012). Land in Africa like elsewhere in the world remains not just like any other commodity but keeps appreciating in value. This has exposed individuals to value land resources dearly, that they can even engage in recognisable peaceful or violent conflicts. Given that more than 67.1% of Africa's population depends on arable land for food and pasture, there remains many land disagreements, conflicts and to a worse extent wars that relate with land management and related conflicts (Maganga & Odgaard, 2002). The question of land conflicts hence is undeniable and can hardly be exclusively ignored by the researchers in developing economies. The land resources are also a conflict-ridden resource, and as a result, is susceptible to conflicts at household, family, community and national levels, whose causes may not only vary but arising in different circumstances.

With evidence that in Africa land is increasingly getting scarce, as the population and other human activities put occupational stress on it. The incidences of land conflicts may not be ignored (Neumann, 2010). The land conflicts among individuals, neighbours, and communities remain a great social challenge. In Tanzania, for instance, more than 9% of

the total land is associated with strict game conservation, and between 45– 65.1% is under contestation (Barrow, 2013). As a result, the challenge of land conflicts is prevalent and considered to be high for many communities in East Africa. Critiques argued that land conflicts tend to move with agronomic activities; population pattern and nature of terrain, but these seem to lose grip of the same context, when land conflicts even emerge in sparsely populated areas, or in areas with less of commercial utilisation such as forests along the borderlines (Lund, Rie & Sjaastad, 2006). To this aspect, the extent of occurrence of land conflicts remains peculiar with a community setting of lifestyle and emerging deviations in well-known system of co-existence of different households, families, clans and nations.

Conflicts between neighbours about field boundaries; between men, women, and generations about their respective land rights as well as those between pastoralists and farmers, states, immigrants and indigenous people among other groups are rising today (Kassibo, 2005). The different communities world over are under a land conflicts crisis, and therefore, having proper strategies for land conflict management is ideally key and overdue in many communities (Toulmin, 2005). Ideally, the land conflict is wide spread and accounts for 30-56% of the global social problems, with severe instances reported among the agro-based economies of Africa, such as Kenya, Uganda, Rwanda, Zimbabwe, South Africa, Nigeria, among others.

Uganda alone has had land conflicts relating to the boundaries with Kenya, South Sudan and Tanzania which are among the interstate conflicts in the region. The most recent violent intrastate-intertribal conflict was in Northern Uganda between Madi and Acholi tribes in Amuru District that left over 20 people dead and several others injured (Ocungi,

2017). Moreover, as Wiley (2005) has noted, land issues have played a significant role in all but three of the more than 30 intra-state conflicts that have taken place in Africa since 1990. Traces of land conflicts continue to emerge in Uganda, increasing the challenge of land grabbing and subsequently land conflicts going high. Most affected zones associated with land conflicts in Uganda include the South western regions, western districts of Kibaale, Kiboga, and Kamwenge, Eastern parts of Acholi, Teso, and the endemic war zones of Northern Uganda and Karamoja region (Rugadya, 2009).

As Uganda's population increases, so do issues with land ownership and management deteriorate. According to the UBOS (2016), Uganda's population was 34.6 million people, which could have increased further to date (2019), but land resource remains only 241,551 square kilometres, and only 200,523km² is cultivable land. More than 80% of the Uganda's communities depend on land, and as such the land holding has significantly reduced with the increase in population (Rugadya, 2008).

Rugadya (2008) also revealed that land conflicts were high in Uganda, with 34.9% in rural households, while 33% were city/urban based land conflicts, land wrangles, inheritance and succession wrangles were close to 15.5% and land occupied illegally was about 12.3%. There were varying trends of land conflicts which were generally high in rural as compared to urban areas (Rugadya, 2009). While these demographics prevail, the insurgencies, land grabbing and other push and pull factors towards use of land increase subsequently widening the scope of land conflicts in Uganda. As a result, this study focused on instances of occurrence of land conflicts in Uganda, particularly for communities with in Kisoro District.

2.3.2. Types of Land Conflicts

Owing to the variation in land tenure systems and the way in which people and households own, and use their land, different land conflicts are manifested (Funder *et al.*, 2012). Funder, *et al.*, (2012) is quick to assert that land conflicts prevail in varying circumstances, as a result different types of land conflicts prevail. Studies including (Lund *et al.*, 2006; Ocungi, 2017; Rugadya, 2009) all agree with the perception that land conflicts tend to take up the name in regard to what is the causative factor, reaction of the personalities involved and how they are mitigating associated challenges. This gives an understanding of the different land conflicts prevalent in communities, as further described.

Boureaux, Vhegen and Walter (2017) state that land conflicts can result in many forms and as a result exist as either individual conflicts or community conflicts. Leadership disputes may involve claims of land because one is in position of leadership; conflicts may arise when young people share borders which were demarcated long ago and they are not certain as to where each stops. Failure to negotiate the right demarcation exposes them to quarrels, and subsequently into conflicts (Cotula, Vermeulen, Leonard & Keeley, 2009). Studies conducted by Iff & Joras, (2015); Hall, (2011) and Tanko, (2016) agree that the largest category of land conflicts are interpersonal conflicts, especially arising at the borderlines, poor cultivation practices and selling beyond where one's land stretches.

According to Saviori and D'odorico (2013), land conflicts arise out of the siblings from one or different families. These may be inter-family land conflicts, and in Indonesia, this is one of the commonest forms of land conflicts. Siblings fighting for inheritance and estate rights, as well as inter village and inter-clan land disagreements exist not only in

Indonesia, but also in African communities such as Kenya, Uganda and other countries such as South Sudan, Nigeria, DRC and Zimbabwe. The difference arises in the diversity and extent to which such inter-family and inter-clan land conflicts are intensified (Rugadya, 2009; Takashi & Deininger, 2005). In this study, attention was put on the communities and clans within Bufumbira South, Kisoro District in south western Uganda.

Wehrmann (2008), while making a description and a guide on how to handle land conflicts, notes that it all begins with identifying the nature of land conflict at play. In order to successfully resolve land conflicts, it is vital that one is aware of the type(s) of land conflicts that exist in a given community. Categorising them, Wehrmann (2008) considers them as conflicts occurring on all types of land property, or special conflict over special terms of land ownership. Such causes may include boundaries, inheritance, ownership against various claimants of the land, multiple sale of land, violent land grabbing, as well as disputable payments (Rugadya, 2009; Wehrmann, 2008).

In other related studies, Cotula *et al.* (2004) and later Boureaux *et al.* (2017) consider land conflicts in terms of scope and category of aggressors. In the study by Cotulla *et al.* (2004), the intercommunity invasions such as people from neighborhood country outgo push factors such as war, epidemic, can invade and take over land in another country or community, forcefully, until the push factor has ceased. When the incidence ceases, some of the external persons to the former land ownership system may refuse to go back, breeding a land conflict. While Boureaux *et al.* (2017) revealed that while there have been a lot of landlord-tenants conflicts, such conflicts have several times been complemented by international conflict over borders as it is in the Gaza between

Palestine and Israel. From the presentation of the literature above, it is observed that there are a number of forms in which land conflicts occur in our communities, and this study particularly focused on the community in Kisoro District.

2.3.3. Causes of Land Conflicts in Uganda

Uganda's population density is currently 174 persons/sq. km, projections suggest that by 2040, Uganda's population will have doubled from 35 million to more than 70 million, and its population density will have increased to about 388 persons/sq. km of arable land (UBOS, 2014). The population size describes the amount of pressure that often drives into conflict over land. With population growth and subdivision or sale, family farm holdings fell from 2.0 ha per family in 1960 to a situation in 2001 in which 60% of the population had less than 0.5 ha to cultivate (John & Sally, 2011). FAO has recommended that the average plot size for family farms should not be less than 0.9 ha. Moreover, land concentration has also increased over time, with an increasing share of arable land owned by fewer and fewer families (United Nations Interagency Framework Team for Preventive Action, UNIFTPA, 2012). This is the major driver for conflicts across generations or ethnic groups as most of the land conflicts are in highly populated areas (Rugadya, 2009; Funder *et al.*, 2012). Owing to this different land related dynamics, the instances of land conflicts have increased, and their causes as diverse as the communities in which they emerge themselves. Such causes include socio-economic, political, demographic, cultural and personal disagreements between individuals and households.

Socio-economic factors such as evolution of land markets, increasing land prices, limited capital markets, poverty and poverty-related marginalization/exclusion, extremely

unequal distribution of power and resources (including land) and lack of microfinance options for the poor have often resulted into land conflicts (Wehrmann, 2008). In Uganda, cash sales of land have increased in frequency since the end of the war in the Acholi land in the late 1980s and 1990s. Conflict arises when one family member sells the land without the consent of his relatives (Mercy Corps, 2011).

Land inheritance disagreements among family members breed conflicts over land. As regards land conflicts among families, in Kenya, the prevailing practice after the death of a husband is for the wife of the deceased husband to hold land in trust for her male children because customary laws rarely allow widows to legally inherit land (Huggins, 2005). In some cases, widows are often threatened to leave their land, which belongs to their husbands' ancestral land, especially when they have no children or refuse to marry one of their husbands' brothers (Wanyeki, 2003). In Uganda, for instance, Wehrmann (2008) found that households headed by females and widows experienced more land conflicts than male headed households.

Land scarcity and agricultural commercialization are expected to increase land value and lead to the individualization of land rights, creating opportunities to establish institutions to better define and enforce property rights (Van Leeuwen, 2009). In Kenya, however, formal individualization of land has been in place since independence. The 1954 Swynnerton Plan granted secure individual land titles to African farmers, and the Plan was reinforced further by the Native Lands Registration Ordinance of 1959 that was replaced after independence by the Registered Land Act of 1963 and the Land Adjudication Act 1968 (Peters, 2004). While the registration process might have

increased tenure security for many land owners, it has also created new forms of land conflicts, such as challenges over registered land and conflicts over land sales (Odgaard, 2006). Moreover, the high cost of registration has discouraged updating the registrations after land transactions, such as inheritance and sales.

As asserted by Food and Agricultural Organisation, FAO (2005), access to rural land and land administration after violent conflicts, without a solid conceptual and pragmatic approach to land issues, structural causes of conflict may not be adequately understood and addressed. The increasing and continuing proliferation of administrative and statutory land governance institutions existing in parallel with traditional institutions is creating a complex land governance infrastructure (Rugadya, 2009). The potential risk is that peace-building interventions will be poorly designed, producing a less than desirable result. Without careful analysis and planning, efforts to promote peace and improve agricultural productivity especially for Irish potatoes may inadvertently exacerbate tensions or, in the worst-case scenario, contribute to new, or renewed conflict (Funder, *et al.*, 2012).

As observed by Wehrmann (2008), land conflicts that result from political issues such as nationalisation or privatisation of land such as the land on the slopes of mount Muhavura in Nyarusiza sub county, lack of political stability and continuity especially in Muramba subcounty due to constant fighting with the M23 rebels in Eastern Democratic Republic of Congo (Yaxley & Jaber, 2015). This led to the introduction of foreign external institutions that are not popularly accepted such as the emergence of new sects or

churches managed by the Congolese refugees in the area (John & Sally, 2011). Politically ignited land conflict arose over the issue of compensating farmers (largely retired civil servants) who had planted trees in the reserve as part of a peri-urban plantation project in Namanve Central Forest Reserve in the mid-1990s when the Ugandan Government made the land available for industrial development (Kazoora, 2003).

Heterogeneity of the society can contribute to land conflicts (Funder *et al.*, 2012). The ethnic diversity of the population in Uganda and Kisoro District in particular made up of the Hutu, Tutsi and Twa causes greater differences when it comes to land and land management (KDLG, 2008; Rugadya, 2009). This ethnic diversity among the populations has recently been observed as another source of land conflict (Green, 2010). The most predominant ethnic-based land conflicts in Uganda include Bafuruki-Banyoro in Bunyoro sub region, Bakhonzo-Basongora-Banyabingi in Kasese and the pastoralists-Bagungu in Buliisa (Rugadya, 2009).

Basing on the literature reviewed on the conflict causes of land conflicts that have been identified focus on the variety of land conflicts involving urban areas, rural areas, state, refugee resettlement lands but fail to clarify the position of the smallholder farmer (John and Sally, 2011; Funder, *et al.*, 2012; Mercy Corps, 2011; Yaxley and Jabber, 2015;; Odgaard, 2006; Rugadya, 2009; & Wehrmann, 2008). Wehrmann (2008) classified land conflict causes on urban, peri-urban and rural areas. He further classified the causes of conflicts on state and collective lands that provide evidence of lack of concentration on

private agricultural plots. This study provides detailed information to smallholder farmer Irish potato production enterprises in Uganda and Kisoro District as a case study area.

2.4 Effects of Land Conflicts on the Productivity of Irish Potatoes

Land conflicts have significant effects on the livelihoods of the population by increasing costs, slowing down investment, reducing the quality of life, causing social and political instability and can also result in the loss of property for a conflict party (Gyamera, *et al.*, 2016; Wehrmann, 2008). Not all conflicts are necessarily negative, but when they escalate into violence and/or abuse of power they can have significant negative impacts in both human and developmental terms (Funder *et al.*, 2012).

Mercy Corps (2011) identified limited private sector investment, limited infrastructure development projects and limited youth economic engagement as non-agricultural effects of land conflicts. Land conflicts have also hindered the entry of private sector actors into Acholi-land and the supply of raw materials. This is due to several factors, including security concerns, the difficulty of negotiating land use and acquisition in a transparent and inclusive manner, and community mistrust of private sector actors. Plots that are owned with title deeds are also likely to be more productive because of security of tenure (Muyanga & Gitau, 2013). Prohibiting land use when disputes are heard in court, physical insecurity and violence that prevent cultivation, uncertain ownership that discourages investment in the land and loss of life, injury, or imprisonment as a result of land conflicts are some of the key drivers to reduced agricultural productivity (Mercy Corps, 2011).

Overall, it is clear that land conflicts interfere with farmers livelihoods because they cannot farm their plots in an optimal way (Arias, Ibanez & Zambrano, 2013; Muyanga & Gitau, 2013). Given the challenges caused by population growth and high household poverty levels in Uganda, it is vital that land conflicts are resolved effectively and efficiently with the urgency expected (Rugadya, 2009). How adept the government is at resolving land issues therefore becomes a very important policy issue as far as agricultural productivity is concerned. Because of the overwhelming nature of land conflicts in Uganda that affect agricultural production and productivity, the President of the Republic of Uganda instituted a commission of inquiry into land matters headed by Justice Bamugemereire that started work in 2017 (Wesaka, 2017).

Delayed planting or leaving land unfarmed due to conflict ultimately had negative effects on the productivity of smallholder farms. Since most smallholder farmers' agricultural production is rain-fed, proper timing of farm activities is necessary to enhance optimum productivity (Muyanga & Gitau, 2013). In particular, Kisoro District experiences a long dry season from March to August; poor timing of planting can have serious effects on Irish potato productivity. Irish potatoes, more so, being short season crops may be harvested without having experienced much rain if delayed planting occurred yet adequate rain is necessary for tuber development and enlargement (Funder *et al.*, 2012). In such a case, land conflicts will reduce agricultural productivity (Deininger & Castignini, 2012).

When other production inputs are controlled for, active land conflicts reduce agricultural productivity through other avenues such as constrained crop choice and reduced crop care. It is also believed that plot productivity increases by 18% on farm lands that are formally registered (Muyanga & Gitau, 2013). This is due to the confidence the owner has in the land that encourages the farmer to invest in long term programs such as soil and water conservation measures and other practices such as application of organic matter, removal of loose and hard rock from the plots to increase planting area and planting windbreaks on the windward side of the field are deemed to improve agricultural productivity (Rugadya, 2009). Reduction in the probability of losing some parts of the land provides land owners with greater assurance that they will be able to ‘enjoy the fruits of their labour’ especially if they engage in long-term land conservation investments hence carry out all the measures possible to increase productivity of the agricultural enterprises on the land thus better yield output (Mercy Corps, 2011).

The reduction in the yield output definitely reduces the income obtained from an agricultural enterprise on the disputed farm plots (Mercy Corps, 2011). Since labour input reduces on farms experiencing conflicts, it is clear that the output from the enterprise undertaken will reduce due to reduced interest in timely planting (Muyanga & Gitau, 2013). A study conducted in Uganda found that plots with conflicts had 17% lower yield than those without conflicts (Mwesigye & Matsumoto, 2013)

Land conflicts have a number of effects on agricultural productivity. The effect on the farmlands differs depending on many factors both explicit and implicit (Barreiro, Iqbal,

Limberg, Pradodjo, Silew & Schweithelm, 2016). The output per unit of input is greatly affected due to low investment in agricultural improvement and technology adoption programs in terms of the yield from each unit of land under production, low or no fertilizer application and reduced or limited plant care (Muyanga & Gitau, 2013; Yamano & Deininger, 2005). Also, total agricultural production might be lower because shocks and uncertainty result in more land being idle (Arias *et al.*, 2013).

Several scholars have highlighted the effects of land conflicts on the population (Gyamera *et al.*, 2016). Muyanga and Gitau (2013) conducted a study in Kenya on land conflicts and the effect they have on agricultural productivity. Mercy Corps (2011) briefly identifies the economic consequences of land conflicts. Even the study by Muyanga and Gitau (2013) fails to isolate the effects of land conflicts for smallholder farmers from the commercial farmers and yet these two categories of farmers are affected by land conflicts differently. Basing on the literature therefore, no study has been conducted in Uganda to evaluate the effects of land conflicts on smallholder Irish potato productivity. This study was therefore intended to bridge the gap of inadequacies in the information available on the study objective drawing lessons from Bufumbira South, Kisoro District in western Uganda.

2.5 Strategies to Manage Land Conflicts

It is important to recognize that violent conflict over land is not inevitable, nor are conflicts unmanageable. Practical steps can be taken to prevent grievances from turning into violent conflict, mitigate the short and long-term negative effects when conflicts do occur and to harness the potential of land issues to contribute to broader peace-building

objectives (Kagwanji, 2009). If effectively managed, conflicts can contribute to societal transformation and perhaps even feed into creation of a new social contract between government and its citizens. This transformation aforesaid has positive effects on agricultural productivity of the smallholder farmers as even government will support productivity related improvement programs for such communities through effective extension service provision rather than investment in formal conflict resolution.

Mercy Corps (2011) identified customary strategies (elders, clan leaders, and religious leaders), formal strategies (local government officials at the village and parish level; land officers, parish level land committees, sub county court committees, and District courts, magistrates, and land boards) and the peace committees (comprised of community leaders and may have been created by Non-Governmental Organizations). It is thought that these peace-building committees appear in post war areas such as after LRA insurgency in Acholi and the Genocide in Rwanda.

Deininger and Castagnini (2006) highlight the informal and formal strategies of land conflict resolution. The UNIFTPA (2012) in the toolkit for preventing and managing land and natural resource conflict identified the various institutions for land dispute resolution as traditional authorities, civil society and Non-Governmental Organisations, local governments, national government ministries, courts, political leaders, land and property commissions. In each case, the potential strengths and weaknesses are highlighted. To a smallholder farmer, the low cost interventions by the traditional authorities may be appropriate.

John and Sally (2011) in their handbook, 'Land and Conflict Prevention' highlight the executive, ministries, land commissions and customary institutions. In Uganda, the executive, Ministry of Lands, Housing and Urban Development (MoLHUD) and the Uganda Land Commission have less or no affinity to managing non-public/state lands. Despite the existence of a number of land conflict resolution strategies, Yamano and Deininger (2005) in their study on land conflicts found out that people resorted to informal institutions first to resolve the conflicts and then to formal institutions only when the informal institutions have failed to resolve the conflicts. Also, the study found that there were fewer pending conflicts in communities with more elder groups. Thus, it is important to recognize the ability of the local informal institutions and clarify the institutional responsibilities of different institutions. Otherwise, the lack of clarity of institutional responsibilities could be exploited by powerful individuals and may have negative consequences for equity resulting into deeper impact of conflicts.

In some places, customary systems may provide adequate security of tenure, recognition of transactions and conflict resolution. In other circumstances, customary systems may well be deficient, and yet regulatory intervention will simply serve to dispossess vulnerable groups and enhance uncertainty by creating parallel systems (Fitzpatrick, 2005). In Afghanistan, the formal justice system has never managed to penetrate the entire country, especially in rural areas (Rassul, 2013). This has led to the emergence of a hybrid and patchwork legal system, composed of both formal and informal institutions that reflect various Islamic, traditional, secular, and Marxist influences, which provides

conflict resolution services (Wardak, 2004). The smallholder rural farmers can best benefit from the systems that are easy to reach and can solve their conflicts consensually.

Wehrmann (2008) identified the strategies of land conflict resolution as consensual and non-consensual approaches. Less related are the customary and formal strategies respectively as identified in the study on the land conflicts in the Acholi land (Mercy Corps). The intended outcome of any conflict resolution strategy is a peaceful end of the contest. Local informal dispute settlement fora were therefore identified. State institutions increasingly took control of conflict management processes and make attempts to take over the dispute resolution role of religious leaders (Pankhurst, 2003). The outcomes of conflict management processes depend on the type of conflict and the power relations among stakeholders. A growing number of institutions are addressing issues relating to land conflict and focusing on a broad range of different aspects including sensitization, capacity building, legal aid and dispute resolution, advocacy and policy formulation (Rugadya, 2009). The United Religions Initiative, URI and Acholi Religious Leaders Peace Initiative, ARLPI, (2012) identified a referral pathway in land conflict mitigation involving grassroot leaders, local council I courts, sub county court committee, chief magistrate court and high court. Area land committee, District land board and the police act on the sides. However, due to the violent nature of conflicts experienced, the police are found to take a lead in managing conflicts. Various non-governmental Organisations have also been established to help in sensitisation of the rural people on the existing land laws and reforms (Vaughan & Stewart, 2011).

Sensitization and rising awareness of statutory and customary law is an effective way to transform conflict (Rugadya, 2009). Improved sensitization of the community about their rights and obligations relating to new land laws could lead to large benefits and that “well-disseminated legal reform can be an important and far-reaching first step to reap the benefits of higher tenure security as asserted by Deininger & Castagnini (2006). Such benefits of higher tenure security include among others increased productivity per unit input of an agricultural enterprise of the smallholder farmers and increase in the value of land in case of sales or land renting.

According to the Constitution of the Republic of Uganda (1995), formal and customary dispute resolution strategies have been cited and follow different procedures to resolve land conflicts and may arrive at different resolutions. Government policy has failed to clarify the jurisdiction of each strategy or how these strategies should coordinate to produce a single outcome. For example, while traditional dispute resolution is recognized as legally binding in the Uganda’s Land Act of 1998, it is not clear whether this resolution should prevail over a resolution achieved in court. Mercy Corps (2011) adds peace committees as institutions for resolving land conflicts. Such committees are however found in areas recovering from armed conflict such as the Northern Uganda. The choice of a suitable strategy of land conflict resolution, whether customary or formal, largely depends on the degree of escalation present. Customary strategies of land conflict resolution include facilitation, moderation, consultation, socio-therapeutic consultation, conciliation, mediation and arbitration (Wehrmann, 2008).

URI & ARLPI (2012) highlighted the procedure followed by the various institutions in managing land conflicts. Procedures are indicated for customary (families of conflicting parties, clan and religious leaders), LC courts (Parish and Sub county level), the Chief Magistrate's and the High Courts in Uganda. URI & ARLPI (2012) noted that the procedure of resolving conflict by customary strategy was not the rule of the thumb but the procedure depended on the type of conflict (boundary or ownership) conflict.

2.6 Summary of Literature Review

The literature review summarised previous works related to land conflicts and the management of the conflicts that affect Irish potato productivity. Literature reviewed explains that land conflict is a phenomenon that has existed from time immemorial. In recent years, it has escalated to large scale due to population pressure on the land, environmental degradation, corruption, failure of justice delivery in formal institutions, greed by the wealthy class, civil wars, government resettlement plans for refugees, inefficient and inadequate land registration institutions and over-reliance on agricultural land for livelihood (Deininger & Castagnini, 2006; Muyanga & Gitau, 2013; Rugadya, 2009; Wehrmann, 2008). The literature further opines to the fact that the occurrence of land conflicts significantly varies from one community to another and significantly high in different parts of the west, south west, eastern and northern parts of Uganda, though particular attention of this study was in Kisoro District- South western Uganda. Literature revealed that land conflicts have a number of effects including reduction in agricultural productivity, reduced economic development, loss of life and physical incapacitation, delayed development of infrastructure; break down of social systems and loss of

contested land parcels (Deininger & Castagnini, 2006; Mercy Corps, 2011; Rugadya, 2009; Wehrmann, 2008;).

Agriculture was negatively affected by land conflicts through reduced crop care, delayed planting, destruction of the growing crops and reduced input application (Muyanga & Gitau, 2013; Mercy Corps, 2011). Information on the losses experienced by the smallholder farmers with focus on food crop production was not provided in the literature hence the attention of the study. In management of land-related conflict were identified as customary or formal or intermediate including traditional institutions, local council courts, chief magistrate, high court, ministries, executives, land commissions and the land tribunals (Kagwanji, 2009; Mercy Corps, 2011; Rassuli, 2013; URI & ARLPI, 2012; UNIFTPA, 2012; & Vaughan & Stewart, 2011). Generally, the review paid attention to various land conflict management strategies; although there remained a gap to address in this study for the rural households in Bufumbira South, Kisoro District whose information was not well researched and published by previous studies. As a result, this study focused on exploring and putting together related information that could contribute information regarding land conflicts and management strategies used by smallholder Irish potato (*Solanum tuberosum*) farmers in Kisoro District.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covers research design, study area, target population, sample size, sampling techniques, data collection methods and instruments and data analysis.

3.2 Research Design

The study used case study survey design. A case study is an empirical inquiry that explores a given case/phenomenon in depth and real life context (Creswell, 2013) and hence was appropriate for assessing land conflicts and the land conflict management strategies used by smallholder Irish potato (*Solanum tuberosum*) farmers in Kisoro District. For purposes of obtaining a comprehensive data, both qualitative and quantitative approaches were utilised to establish the extent of occurrence of land conflicts, types, causes, and effects of land conflicts in regard to smallholder Irish potato farmers in study area. Qualitative approach was considered appropriate for providing detailed information as presented by the residents of Bufumbira South where this study was undertaken. The design provided an extensive scope of coverage and a representative descriptive data on the possible strategies that were being used by smallholder Irish potato farmers to manage land conflicts, providing room to pave a way forward.

3.3 Study Area

The study was conducted in Kisoro District in Uganda which occupies a land area of 644.6 sq. km. Kisoro District is bordered by Kanungu District to the North, Kabale District to the East, Rwanda to the South, and the Democratic Republic of Congo (DRC) to the West. Kisoro is approximately 75 kilometres by road, West of Kabale town in Kigezi sub-region and about 468km from Kampala, Uganda's capital city. The geographical coordinates of Kisoro District are 1°17'06.0"S, 29°41'06.0"E (Latitude: 1.2850; Longitude: 29.6850). Kisoro District is among the top five (5) districts growing Irish Potatoes in addition to Mbale, Kabale, Kapchorwa, and Mubende (UIPS, 2015), though highly characterised by land conflicts compared to the rest of the growing Districts (KDLG, 2017). This made it a peculiar area for the study.

Kisoro District has a population density of 363 persons per square km (UBOS, 2014) which partly explains the pressure on land that may result into competition over land that culminates into land conflicts (Funder *et al.*, 2012). Literature explains that where there is ethnic diversity, land conflicts are eminent (Rugadya, 2009). The ethnic composition of Kisoro District made up of the Tutsi, Hutu and Twa explains the prevalence of the land conflicts. Poverty due to large family sizes breeds property inheritance conflicts (Wehrmann, 2008; Huggins, 2005). The influence of refugees from the Eastern DRC due to civil war and Rwanda due to economic struggle have led to the evolution of land markets that have increased land conflict prevalence in the area (Yaxley & Jaber, 2015).

In the study, respondents were drawn from Bufumbira South which has consistently been the biggest Irish potato growing area in the District. An estimated 36% of the population were facing land conflicts implying these conflicts have increased overtime as the

population increased (Mugisha, 1998). UBOS (2014) highlights that there are 21,813 households practising smallholder farming in Bufumbira South. The Crop Area and Production Report indicates that there were 3,000ha of smallholder plots in use for Irish potato production in Kisoro District (UBOS, 2010).

Bufumbira South is made up of four (4) Sub counties namely: Nyarusiza, Muramba, Chahi and Nyakinama. It is the most densely populated constituency hence population pressure on land and on border with DRC and Rwanda explaining the ease of foreign entry into the land (UBOS, 2014). All these aspects made Bufumbira South a potential area of study in assessing the land conflict management strategies among smallholder Irish potato (*Solanum tuberosum*) farmers in Kisoro District.

3.4 Target Population

Kisoro District has a total population of 287,179 people and 63,035 households. Bufumbira South has a total human population of 106,513 people and 23,890 households (UBOS, 2017). The target population was drawn from all those households which were primarily engaged in smallholder Irish potato production in Bufumbira South, the study area. All the four (4) sub counties in Bufumbira South out of the thirteen in Kisoro District were considered for the study. These were about 23,890 households in Bufumbira South (UBOS, 2017). This target population was considered because it was informed about the land conflict issues as they were active farmers. The household was considered as a unit of study and in each household, the head (whether male, female or child-for child-headed families) was considered as the unit of analysis of an in the target population. In

total, 106,513 persons were the study target population, suitable to provide an entire view of residents in Bufumbira South.

3.5 Sample Size

The researcher collected data from 202 respondents. Household heads were the respondents. The sample size of 202 respondents is a representative of the study population that would enable some generalisation of the findings. The sample size was determined using the formula developed by Yamane (Yamane, 1967). The formula was chosen because it gives a definite figure with consideration of the possible response error margin. Survey designs require that a margin of error be adjustable to explain the allowance given for divergence that results from uncontrollable external factors. Sample size determination by Morgan has a fixed range of margin of error (Yamane, 1967). This is needed because some people do not feel happy expressing information about their unpleasant situations as related to land conflicts.

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

Where; n =sample size, N=total population (Total number of households heads in Bufumbira South =23,890) and e=margin of error (7%)

Therefore, $n = 23890 \div 1 + 23890(0.07)^2$

$n = 23890 \div 118.061$

$n = 202$ respondents

Hence the sample was distributed per Sub County as shown in Table 3.1

Table 3.1: Sub-counties Represented in the Study (n=202)

Sub-county	Frequency	Percent (%)
Muramba	51	25.2
Nyarusiza	50	24.8
Chahi	51	25.2
Nyakinama	50	24.8

As shown in Table 3.1 above, an equivalent number of respondents was obtained from all Sub-counties, with exception of Muramba and Chahi where other respondents that is the District Lands Officer (DLO) and District Production Officer (DPO) for Kisoro District were residents. This provided a representation of all the Sub-counties equally, providing an opportunity to suggest relevant strategies basing on views from each sub-county.

3.6 Sampling Techniques

The study utilised stratified, simple and purposive sampling techniques to arrive at the sample. Stratified sampling is used when the population can be sub-divided into groups each group with similar characteristics (Creswell, 2013). Stratified random sampling was adopted to categorise farmers according to their sub counties. Each of the sub counties was a stratum. All households in Bufumbira South were found to be growing Irish potatoes. The smallholder farmers with or had ever had land conflicts were randomly selected from each of the four sub counties. This helped to obtain a representative sample for getting views from those experiencing or those who had ever experienced land conflicts.

A total of 202 farmers, including the DPO and DLO were selected. Purposive sampling was also used to select key informants for information regarding land conflict management among smallholder Irish farmers in Kisoro District. The DPO and DLO were specially selected to provide detailed scope of information about the study variables. These were also residents and Irish potato farmers hence considered under the category of farmers in Kisoro District.

3.7 Data Collection Methods and Instruments

Primary data was collected from 202 respondents using interview guides and questionnaires. The instruments were piloted on 51 respondents from Nyakabande Sub County in Bufumbira East which borders with the study area. Nyakabande Sub county was selected because of its large population, and having a history of land conflicts just like those that were perceived to be in Bufumbira South. The tools were then modified and used on the actual respondents for data collection. The questionnaire and interview guide had similar questions and were used on the same respondents to complement each other. Where the respondent (smallholder farmer) was not found at home for the interview, the questionnaire was left to be filled and the respondent would be notified to respond to the tool and then the tool collected the following day. In instance, where the researcher could not read or write in English, the interview was held instead. Interviews were also held with the DPO and DLO, for detailed information about the study. The use of both tools helped to triangulate data. Focus group discussions were held with smallholder farmers who had on-going or had ever had on-going land conflicts at the sub county so as to conceptualise more information regarding land conflicts and land conflict management strategies being used and their effectiveness in resolving land conflicts.

3.7.1 Questionnaire

A questionnaire with close ended questions was used to obtain data on the extent of occurrence of land conflicts, types, causes of land conflicts and their effects on Irish potato productivity. The strategies being used by smallholder Irish Potato farmers in management of land conflicts were also considered. Close ended questions were relevant especially for collecting data on Irish potato productivity because they saved time, allowed respondents to answer without bias, are cheap and economical (Kothari, 2005). It also allowed for a high response rate on land conflict management among smallholder Irish potato farmers in Kisoro District (see Appendix I on page 96).

3.7.2 In-depth Interview Guide

Interview guides were used to collect data on the types and level of occurrence of land conflicts, their causes and effects on Irish potato productivity and the smallholder farmers' management of the conflicts. The interview helped to solicit for detailed responses and was administered to farmers who could not write in English as well as the Key Informants (KIs). The use of interviews complements and provides detailed opinions in a study (Mbabazi, 2011) and allows response freedom and flexibility (Kothari, 2005). The interview guide consisted of four (4) sections including bio-data, self-introduction information, demographic characteristics of the farmers, Section B on the extent, types, and causes of land conflicts among smallholder Irish potato farmers, Section C on effects of land conflicts on the productivity of Irish potatoes. It also has section D which focused on questions about the management strategies used by smallholder farmers to resolve the conflicts (see Appendix II).

3.7.3 Focus Group Discussion

Two (2) Focus group discussions (FGD) were held in each sub county for the farmers who had experienced or were experiencing land conflicts at the time of the study. A minimum of 12 members constituted a FGD. Focus group discussions help to obtain information from a group of people brought together for the purpose, several times affecting the group members. It is guided by the researcher and respondents are participants (Sarantakos, 2005). Responses from the FGDs like those of the interviews were categorised under themes, and hence the FGD checklist constituted of four sections. Section 1 on introduction and sections 2-4 on study objectives. FGDs were the most appropriate means of getting detailed information about land conflict management strategies from those practically experiencing the challenge in Kisoro District (see Appendix IV).

3.8 Research Procedure

Data was collected from 202 respondents who were Irish potato farmers that were or had ever been involved in land conflicts. The 202 respondents were selected on the basis that they were household heads from a population of 23,890 households in Bufumbira South 66.8% respondents of whom had ongoing land conflicts at the time of the study. Questionnaires, interview guides and Focus Group Discussions were used to collect both qualitative and quantitative data. Qualitative data was collected on the nature and management strategies of land conflicts while quantitative data was collected on the effects of land conflicts on yield and income output of Irish potato enterprise. The data was collected by the researcher with the aid of some few trained field assistants. The field assistants were used due to the wide geographical location of the respondents and the

need to translate to the respondents who could not write or read in English language. The data was collected from the Bufumbira south in a period from May to July, 2018.

3.9 Validity and Reliability

Piloting the data collection instruments was done and the pilot study findings enabled the researcher to ascertain the reliability and validity of the instruments. Piloting was done on 51 smallholder Irish potato farmers in Nyakabande Sub County, Bufumbira East and these represented 25% of the sample size. The sub county was selected to make the generalisation of the results to the whole district relevant and also, it is a close neighbour to Bufumbira South at Chahi Sub County, hence having related land conflict challenges and Irish potato production activities/seasons. Therefore, the smallholder farmers in Nyakabande Sub County were expected to have similar experiences as those of Bufumbira South where the actual study was conducted. The piloted questionnaires, were re-edited, and printed out for data collection. Also, the high population size and the presence of a refugee transit centre were expected to contribute to the existing land conflicts.

The validity of the instruments was established by having all the content relating to the nature, effect and management of land conflicts included in the study. The interview guide, questionnaire and focus group discussion checklist were scrutinised by the supervisors to ensure they were valid. Using Cronbach alpha, the internal consistency ($[\text{number of items rated as relevant} \div \text{total number of items}] \times 100\%$) of the questionnaire was also computed. This was found to be at 0.87 which was higher than the recommended 0.7 hence the instrument considered reliable (Tavakol & Dennick, 2011).

3.10 Data Analysis

Thematic analysis was used to explore and analyse the qualitative data. Each of the objectives was considered as a theme, and different aspects/ constructs rose per objective considered as sub-themes. Respondents' statements were presented as direct quotation or paraphrased statements. The presentation focused on presenting on-ground views of respondents regarding different forms of land conflicts, causes, effects and possible strategies to manage land conflicts in the study area.

Quantitative data on the effects of land conflicts on Irish potato productivity was analysed for statistical significance using a paired sample t-test to determine the strength of the relationship between yield before and after a conflict on the land and then similarly income (see Table 4.9 and Table 4.10 respectively). Qualitative data in questionnaires and interview guides was coded and analysed for percent ages. Qualitative data collected using Focus Group Discussions and Key Informants interviews were presented paraphrased or as verbatim statements and narratively analysed as descriptive statements. The analysed and presented data was interpreted and discussed to provide a detailed coverage of results on the nature, effects and management of land conflicts affecting smallholder Irish Potato farmers in Bufumbira South, Kisoro District.

3.11 Ethical Considerations

The respondents were informed of the purpose of the study as investigation into the smallholder farmer management of land conflicts that affect Irish potato productivity and that the study sought to collect information on extent to which they occur, types, causes, and their effects on smallholder Irish potato productivity. This aimed at giving them

confidence that the study was for academic purposes, but useful to their daily life experiences. Respondents were informed of the benefits of the study. During data collection, respondents were verbally asked to give their formal consent before participating in the study. The researcher ensured that participation was voluntary and the information obtained was kept confidentially. The views of the respondents were kept anonymous, used only for academic purposes and not circulated without prior written permission of the relevant local authorities in study area.

CHAPTER FOUR

RESEARCH RESULTS

4.1. Introduction

This chapter contains a detailed description of the results on the nature, effects and the management strategies of land conflicts used by smallholder Irish potato farmers in Kisoro District. The findings were established on the extent, types and causes of land conflicts among smallholder Irish potato farmers in Kisoro District, effects of land conflicts on the productivity of Irish potato and management strategies used by smallholder farmers to resolve the land conflicts.

4.2 Demographic Characteristics of the Respondents

The study focused on bio-data of the respondents drawing focus on the key aspects of gender, age, marital status, level of education, and number of children in the household. The knowledge about demographic characteristics helped to examine opinions of respondents regarding land conflicts and strategies to manage the conflicts. The findings are presented below.

4.2.1. Gender of the Respondents

Gender provides the basis upon which to account for the involvement of men and women in land conflicts. The distribution of the respondents by gender was as shown in Figure 4.1.

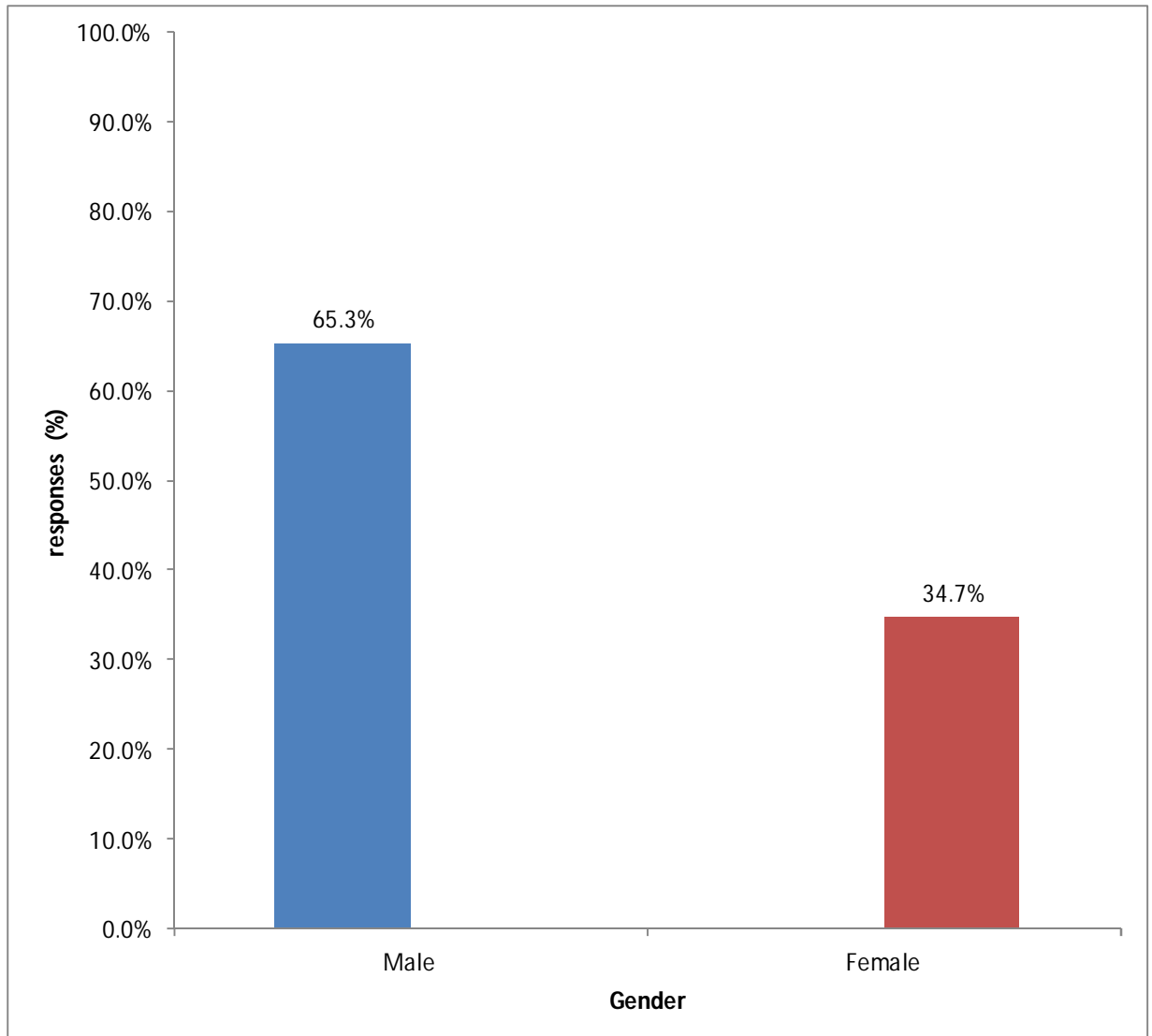


Figure 4.1: Gender of the Respondents

Results show that males dominated the study (65.3%). The dominance of males in the study was due to the fact that most households were headed by men (husbands). More so, men, as per culture in Kisoro District, had full responsibility of acquisition, control and management of land. Men were also family representatives in cases where land conflicts occurred.

4.2.3 Marital Status

Respondents of different marital status were involved in the study. Their distribution is summarised by percentage as shown in Table 4.1.

Table 4.1: Marital Status of Respondents, (n=202)

Marital Status	Respondents (%)
Married	79.2
Single	13.9
Widows	5.0
Divorced	2.0

Results in Table 4.1 indicate that the married respondents dominated the study (79.2%). The respondents also included the single (unmarried) at 13.9%, widows and the divorced at 7%. This implies that land conflicts and land conflict management mainly affected household where both men and women are involved. The land for widows and the divorced women were often drawn into land conflicts. Usually, the land left to widows or orphans by departed spouses or parents respectively had been grabbed by either the relatives and or neighbours. Nonetheless, all groups of the different marital status were potential victims of land conflicts.

Table 4.2: Number of Children in the Household (n=202)

No. of children	Respondents (%)
0 - 5	33.2
6 -10	51.5
Over 10	14.9

The results showed that more than half of the respondents (51.5%) showed that the families had 6-10 children, while 14.9% of the respondents had over 10 children. A few households had fewer than five children. This implies that most households had many dependants ranging between 6-10 children and which was fundamental in influencing the farmers to get involved in land conflicts.

4.3 Nature of Land Conflicts among Smallholder Irish Potato Farmers

The first objective was to determine the nature of land conflicts among smallholder Irish potato farmers in Kisoro District. In quest to answer this objective, the extent to which land conflicts occurred, types of land conflicts, and their causes were examined.

4.3.1 Extent of Experience of Land Conflicts among Smallholder Irish Potato Farmers

The study focused on exploring the extent to which small holder farmers were experiencing land conflicts. The respondents were asked on various aspects related to land size, involvement in land conflicts, and nature of land conflicts. When asked on the size of land for Irish potatoes under conflict, the following respondents pointed out as shown in Table 4.3.

Table 4.3: Size of Conflicted Land under Irish Potatoes (n=202)

Size of land(Ha)	Respondents (%)
0.0 - 0.5	28.2
0.6 - 1.0	57.4
1.1 - 1.5	9.9
1.6 - 2.0	3.5
Over 2	1.0

Results of the study in Table 4.3 indicate that majority of the respondents (57.4%) had land area from 0.6-1ha in use for Irish potato production, an indication that less of the land was being utilised for Irish potatoes. Results further show that only 1% of the respondents had over 2 ha an evidence that they are smallholder farmers. This finding implies that the size of land owned was ideally small hence a probable aspect in regard to causes, effects and management of land conflicts that affect Irish potato productivity.

Occurrence of Land Conflicts

Respondents pointed out a number of aspects regarding their involvement or involvement of their neighbours in land conflicts, and duration of land conflicts. These findings are shown in Table 4.4.

Table 4.4: Status and Occurrence of Land Conflicts as of 2018 (n=202)

Ever involved in the Conflict	Respondents (%)
Involved	66.8
Not involved	33.2
<i>Whether neighbors experience conflicts</i>	
Experience conflicts	74.6
Do not experience conflicts	25.4
<i>Duration of last land conflicts</i>	
Ongoing (May to July 2018)	44.1
Previous year, 2017	5.9
2 years ago (Before 2017)	14.9
More than 2 years	35.1
<i>Reasons why a few did not have land conflicts</i>	
Shared well and knew their boundaries	52.9
Bought land with title	11.8
Father demarcated land well	35.3

Results of the study showed that more than six out of ten (66.8%) of the respondents had ever been involved in land conflicts, and those who had their neighbours engaged in conflicts was 74.6%. It was generally found out that there is an increasing level of land conflicts where the respondents were directly or indirectly involved. The study further showed that while majority still had on-going land conflicts (44.1%), most of the cases that existed were more than 2 years before 2017 (35.1%). This implies that the instances

of land conflicts were high and this was also a core challenge experienced generally in Kisoro District for a period of not more than two years before 2017. The findings hence showed that whether directly or indirectly involved in land conflicts, respondents had experienced this challenge for a period of not less than 2 years in Bufumbira South, in Kisoro District.

Results from the interview with key informants, also complemented the findings from the farmers. From the District Lands Officer (DLO), he was able to note:

“It has been a serial challenge here in Kisoro. People have a lot of conflicts, and these, several times occur among people sharing the same demarcation of land. Other people engage into land quarrels, when they are cheated... and one curious person sells one same piece of land to two or more persons, among other conflicts...” Six (6) in every ten (10) land related matters received at this office are land conflicts” (DLO Interview, 2018).

From this perception of the District Lands Officer, it was found that land conflicts were a common social challenge among the people of Bufumbira South. In a related perspective, the District Production Officer (DPO) also had this to say regarding occurrence of land conflicts.

“It has been some time since violent land conflicts took place in Kisoro, but land conflicts remain an everyday issue.... he who does not quarrel because the neighbour has cultivated poorly on the borderline, quarrels with shifting of border stones, sale of the land without his notice, as well

as cultural favours to boys against girls.” I have a feeling that land conflicts are a common challenge among farmers, that we need a serious lasting solution” (DPO Interview, 2018).

The above views of the DPO and the DLO, corroborate to the findings in Table 4.4 that land conflicts were not a new phenomenon, and arise from the circumstances that prevail in the community. Land conflicts are a challenge that has existed in Kisoro District for a number of years, and seems to be still going on as a number of participants in the Focus Group Discussion also pointed out they had a number of unresolved land conflicts.

Different Focus Group Discussions (FGDs) were held in each of the sub counties, to get on-ground information, and a number of opinions were obtained regarding the occurrence of land conflicts, how often they occurred, and the most perpetrators. Different opinions were raised. In a discussion, it was established that land remained a key contentious issue. In many villages in Nyarusiza Sub County, it was observed and revealed that land conflicts and quarrels existed in many communities. This did not exonerate land owners by size, as both farmers owning small pieces of land as well as those with large areas experienced land conflicts and most often had court cases. In some instances, land conflicts were solved before reaching the formal courts.

To others, land conflict was a considered a normal thing as it occurred quite often, and reflecting on this, one of the respondents, said,

“Ooh, you mean land quarrels, why not... they occur any time..., a person does something wrong on your land.... or sells his land and includes some area along your plot.....” FGD participant, Muramba Sub County.

About seven of the participants in a FGD held in Nyakinama Sub county also agreed that the issue of land conflicts was a common challenge, and reaffirmed that the most perpetrators in all instances were brothers/family members, people who grab and sell land without involving their neighbours, as well as greed by neighbours to keep on digging poorly along the borderline with a reason/goal of stealing part of the other farmers' land.

Respondents were asked to mention the different types of land conflicts prevalent in Kisoro District and most specifically, in Bufumbira South. Findings on this were also established as presented in Table 4.5.

Table 4.5: Types of Land Conflicts Experienced by Smallholder Irish Potato Farmers (n=202)

Nature of conflicts	Respondents (%)
Dislocation of the land boundary	44.1
Grabbing land by the family/relative	38.1
Grabbing land by a clan member	4.0
Grabbing land by a member of another clan	7.4
Government take over	4.5
Occupancy by foreigners	2.0

From Table 4.5, 44.1% show that dislocation of the land boundary was the leading form of land conflict experienced in Bufumbira South, while 38.1% considered that grabbing land by one of the family relatives forcefully was another common form of land conflict.

More so, grabbing of one's land by a clan member or a member of another clan was also common. Least occurring was land conflicts inform of occupancy by foreigners (non-Bafumbira) on one's land. The study implies that boundary conflicts, family/relative conflicts, clan differences and land ownership disagreements were the major forms of land conflicts in Bufumbira South.

Further results were obtained from interviews held with the District Production Officer (DPO) and the District Lands Officer (DLO). These key stakeholders in land management issues agreed that land conflicts were as result of multiplicity of factors. The District Lands Officer also noted that land conflicts started with how the person obtained land. The avenues such as inheritance, buying through local mechanisms without using titles, as well as customary land ownership challenges had increased the basis for land conflict later on. People can disagree any time, especially when the land is sold in hiding, or family members do not agree that one of their siblings is the real owner of the plot, when the parents died before giving them an "agreement" or local certificate of ownership. To others, it is greed, grabbing, unfaithful land neighbours, land prices where people grab land to fetch high prices after sale, among others.

From the above perceptions, the DLO pointed out a number of possible causes of land conflicts, although these were also revealed in the view of the DPO and the opinions arose from the Focus Group Discussions. In the statements made by the DPO, he said:

"In real sense, most of the land conflicts are personal. People act as fraudsters, sell land to multiple buyers, title manipulations, grudges, as well government take over as they construct roads, or other social

facilities. All these describe what is known as a land conflicts in our community...” (DPO Interview, 2018).

The study further obtained various statements from respondents who contributed by way of FGDs. In a Focus Group Discussion held in Nyakinama, respondents raised number of opinions on types of land conflicts. From their views, they said that people have land conflicts in form of quarrels, border conflicts and family disagreements. This is also aggravated by the inflow of migrants from DRC and Rwanda who grab some of the land. Similarly, a number of responses were obtained from other sub counties of Nyarusiza, Muramba, and Chahi. In a summative manner, these opinions included:

“Land grabbing, family /sibling enmity, take over by an investor, lack of a title, forged titles, sale of the land to many buyers, **Statements in FGDs in Muramba Sub County.**

“Family disagreements, border disagreements on plots, clan related misguidance, land takeovers by government also get some form of resistance until people have been paid (compensated)” **Statements in FGD, Chahi Sub county.**

Opinions on the type of land conflicts from Nyarusiza Sub County stated that people do not agree with the way boundaries between their plots of land are made, interpersonal differences on land ownership, family related conflicts and also some form of grabbing had started to be manifested in the Sub County. Respondents were asked to state level of occurrence of land conflicts in their areas. Results of the study on this aspect were established as presented in Figure 4.2.

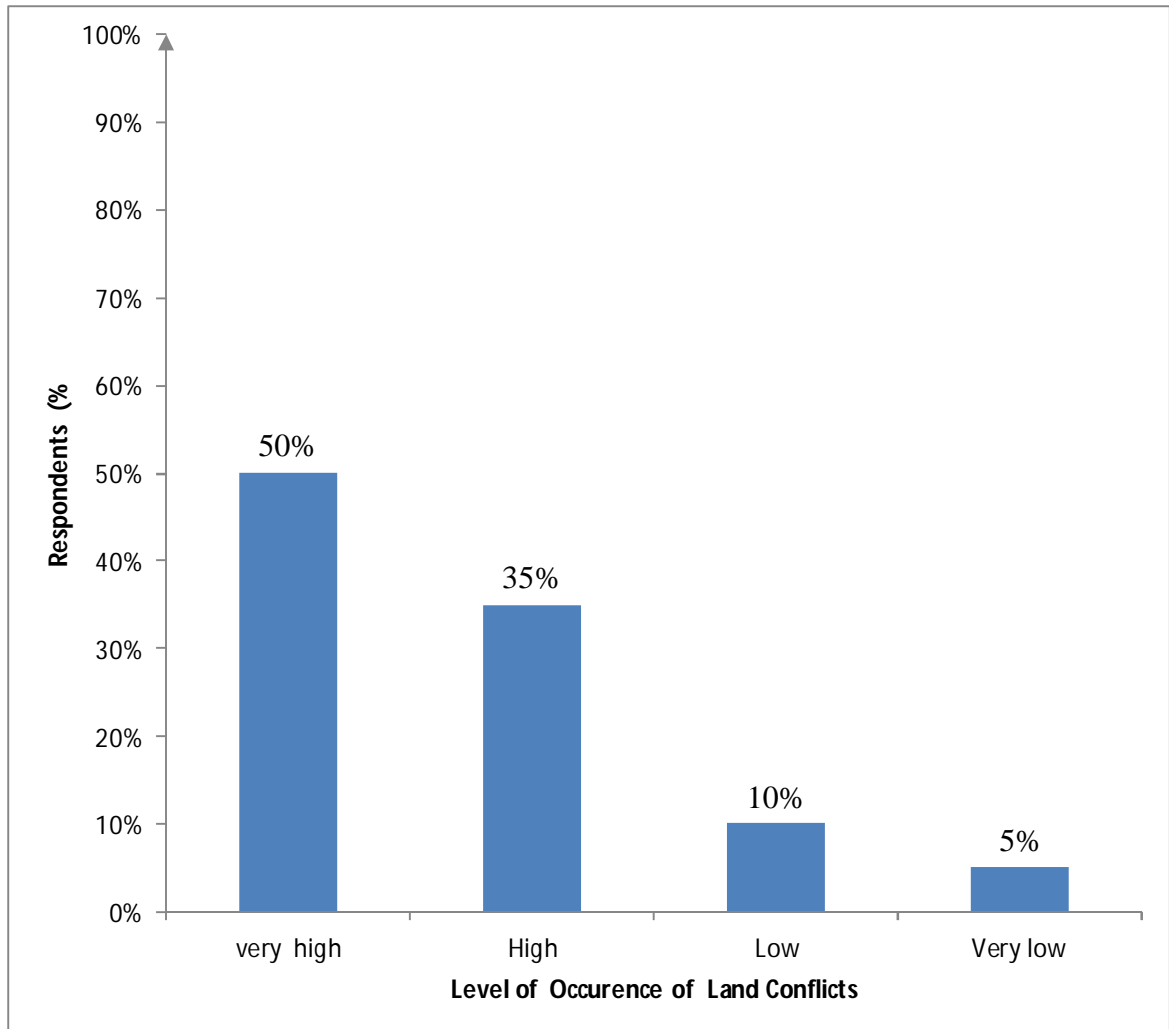


Figure 4.2. Level of Land Conflicts in Bufumbira South, Kisoro District

Results from interviews, FGDs, and questionnaires showed that majority of the respondents affirmed that the level of land conflicts was high (85%). More than 85% of respondents conceded that land conflicts were common among families in Bufumbira South, Kisoro District.

The major cause of land conflicts among Irish potato farmers in Kisoro District were established as presented in Table 4.6.

Table 4.6: Causes of Land Conflicts among Smallholder Irish Potato Farmers in Kisoro District (n=202)

Causes of land conflicts	Respondents (%)
<i>Land ownership causes</i>	
Land donation by parents to children without agreement (customary ownership)	5.0
Land inheritance without wills	41.6
Disagreements among siblings	38.6
Poor demarcation of boundaries	14.9
<i>Political causes</i>	
Government takeover without notice	1.5
Gazette of land for reserves and parks	7.4
High land compensation to people	9.9
Construction of social and public infrastructure	12.4
<i>Legal causes</i>	
Corruption in courts	51.0
Delayed justice in courts	44.6
Settling conflicts locally	4.5
<i>Socio-economic causes</i>	
Forceful take over by rich land owners	49.0
Favoritism by parents in distributing land to their children	55.4
High population pressure	38.6
Wars and refugees	4.5
Poverty	14.9

Results show the four (4) major categories of causes of land conflicts as legal, socio-economic causes, political and land ownership related causes were revealed as the most common cause of land conflicts in Kisoro District.

One of the causes pointed out was the nature of land ownership. 41.6% of the respondents pointed out that land conflicts were due to land inheritance, disagreements between siblings, customary ownership which does not give true ownership, poor demarcations and boundaries. In addition, findings showed that, on average, 31.2% of the respondents attributed the land conflicts to political causes in Bufumbira South. These causes were manifested in constructions of social and public infrastructure, high land compensation to people, as well as government efforts to gazette land for reserves and parks.

From Table 4.6, legal causes were the core cause of land conflicts in Bufumbira South. Key legal causes were corruption in courts (51%), delayed justice in courts (44.6%) and basing on the local setting of the conflicts (4.5%). Majority of the respondents revealed that one of the leading socio-economic causes pointed out was the forceful take over by rich land owners as expressed more than half (55.4%) of the respondent. These showed that there was high population pressure, as well as occurrence of wars and refugees. Close to 15% of the respondents attributed the existing land conflicts to poverty. In addition, the above study findings concurred with the opinions from the interviews and Focus Group Discussions.

In an interview held with the District Lands Officer-Kisoro, he attributed land conflicts to a number of factors including personality. In his perspective, personality was key as even on a small matter, a quarrelsome person will quarrel and breed a land conflict. Land conflicts arise from differences among land owners, how they own land, and sometimes government takeover. More so, people who cheat, and sell land to many buyers, also leave these people to engage in a land conflicts. In a related perspective, the District

Production Officer (DPO) remarked that land conflicts in his opinions were mainly community based, although some personal and economic factors had a role to play. In his opinion, he remarked;

“What takes place in the community matters a lot, how people acquire land, who pays who, and the cultural attachments to land inheritance. Individual dishonesty and disagreements as well as greed, are also a common cause. People’s interests to earn more from their plots make them stealthily add onto their plots some portions of their neighbours’ (when the demarcation is porous), which results into conflicts with the new buyer, (DPO Interview, 2018).

From the views of the District Production Officer above, the land conflicts in Kisoro District and specifically Bufumbira South was due to a diversity of causative factors. This perspective was also revealed after series of Focus Group Discussions (FGDs) in the sub counties. Results from Focus group discussions held in Nyarusiza Sub County attracted a number of responses regarding the causes of land conflicts. Key causes pointed out were land wrangles thus conflicts because of enmity, greed, and poor land ownership controls. Land conflicts due to failure of parents to leave wills, poor land management laws, and dependence on clan elders to settle cases, who may not generally end the conflict. Responses from participants in Focus Group Discussions held in Muramba also complemented findings in Table 4.6 and views from other sub counties. The typical views of respondents in the FGDs were summarised as noted:

“Land conflicts and disputes have been a common challenge in our community, people are used to having disagreements which they settle

among themselves. Causes of land conflicts are, poor demarcations, increased land prices, poor behaviour of some land owners, intentions to defraud, and cause loss to the buyers, internal and external migrations

”FGD Statements, Muramba Sub county.

Related views were also obtained from Chahi and Nyakinama sub counties, including the views that land conflicts due to land inheritance, untrustworthy land agents/dealers, high level of wildlife gazettement of some areas as reserves, increased population demands and weak legal strategy to address disagreements among people in the area.

4.4 Effects of Land Conflicts on the Productivity of Irish Potatoes

The study set to determine the effects of land conflicts on the productivity of Irish potatoes. The study findings on the effects of land conflicts on the productivity of Irish potatoes in Kisoro District were as shown in Table 4.7.

Table 4.7: Level of the Effect of Land Conflicts on the Productivity of Irish Potatoes

Particulars	Respondents (%)
<i>When do land conflicts arise</i>	
Planting along borderlines	39.6
Every season of cultivation	
Harvesting	1.5
At the time of selling the land/plot	10.9
<i>Level of the effect</i>	
Highly negative	99.0
Highly positive	0.0
No big effect	1.0

Results show that, from all respondents who were contacted using questionnaires, interviews and focus group discussions, 48% pointed out that land conflicts occurred every season of cultivation, 39.6% occurred when planting a long borderline, 1.5% at harvesting and 10.9% at the time of selling the land/plot. These findings further show that virtually all the respondents (99%) agreed to the view that land conflicts were highly negative towards production and productivity of Irish Potatoes. These findings imply that land conflicts were highly negative in affecting performance of Irish potatoes in Bufumbira South, Kisoro District.

When asked on whether the challenges being experienced by smallholder Irish potato farmers could be associated with the occurrence of land conflicts, the findings revealed the following as in Figure 4.3.

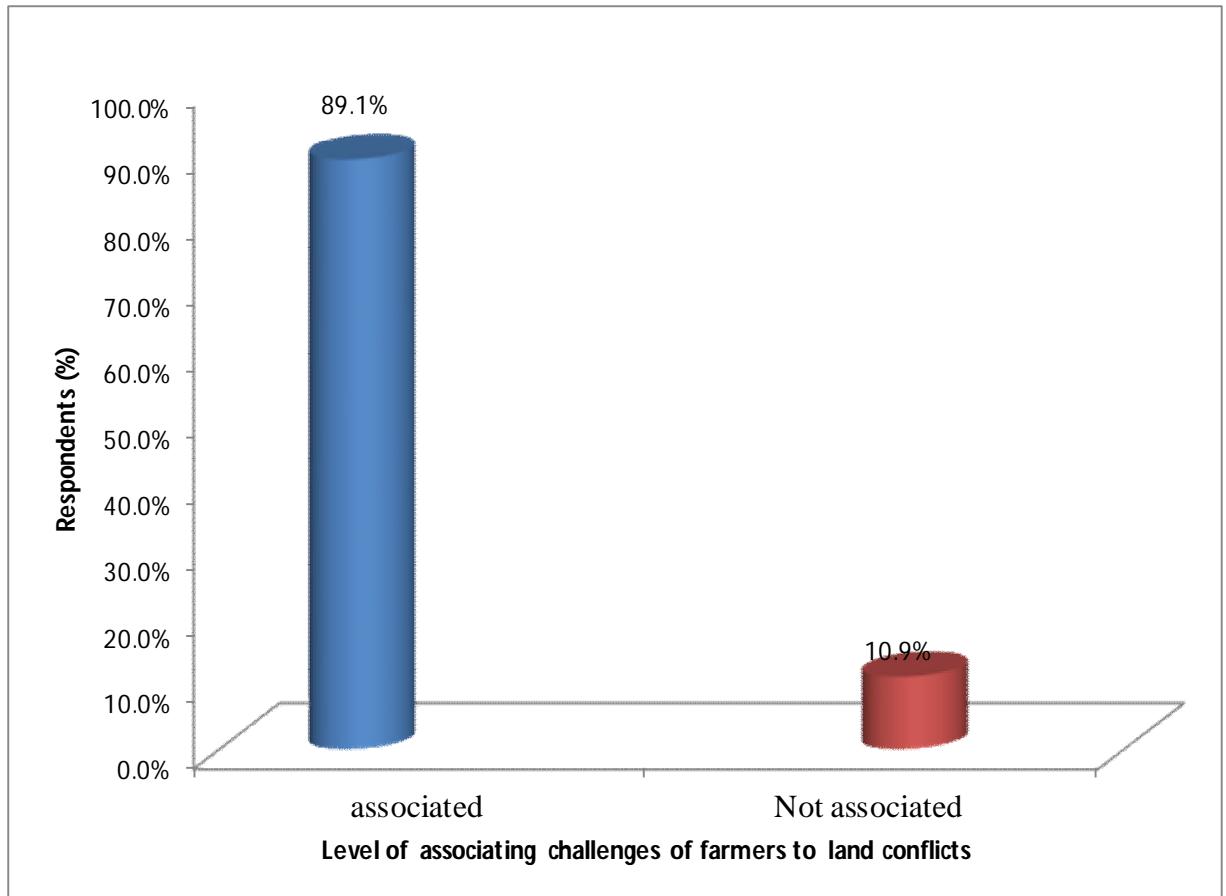


Figure 4.3: Associating Challenges faced by Irish Potato Farmers to Land Conflicts

Figure 4.3 shows that the prevailing challenges being faced by Irish potato farmers were highly associated with land conflicts (89.1%). This implied that land conflicts were reportedly affecting the overall Irish potato production in Bufumbira South. Effects of land conflicts on Irish Potato productivity were also established as presented in Table 4.8.

Table 4.8: Effects of Land Conflicts on Potato Farming Activities (n=202)

Effects	Respondents (%)
Delayed planting due to land conflicts affects harvest quality	38.6
Court orders stop land use and reduce area under potato farming	29.7
Quarrels and court cases waste time needed for potato farming	17.3
Land conflicts affect farming processes	9.9
Injuries and death from conflicts reduces potential farmers	4.5
Reduced Irish potato customer flow	12.4
Lowered Irish potato production volume	33.2
Lowers interest and devotion to work	5.9
Widened family conflict and instability	5.0

Results show that majority of the respondents (38.6%) pointed out that land conflicts delayed planting which affected the harvest quality of the Irish potatoes. In addition, 29.7% respondents pointed out that due to land conflicts where court orders stop land use, there was a reduction in the area of land under Irish potato farming. This finding indicates that court injunction on land under conflict reduced usage of the land which further reduced the land area under potato farming.

Results showed that land conflicts affected farming processes. This was pointed out by 9.9% of the respondents. Land conflicts caused people to stop farming and severally resulted into injuries and or death hence reducing the number of potential farmers, all of which lowered the productivity as revealed by 4.5% of the respondents. More so, as a result of land conflicts there had been a reduction in Irish potato customer flow to Kisoro

District. People were scared of the conflicts and do not invest in buying potatoes since some farmers sold potatoes while still in the garden. This was revealed by 12.4% of the respondents.

From Table 4.8, 33.2% maintained that land conflicts reduced Irish potato production volume which significantly declined. People lost interest and devotion to work when their land is being fought for and associated with quarrels. This reduced the area of land under Irish potato production and subsequently the overall productivity. Land conflicts widened family disagreement at times yielding into bloodshed and family instability. Such instances reduced the interest of people buying Irish potatoes to flock towards Kisoro for the same. These factors, to some extent, hinder overall Irish potato production in Bufumbira South and Kisoro District in general.

Results of the study from interviews, and focus group discussions (FGDs) show related effects that land conflicts had on Irish potato farmers. Typical statements to this effect as obtained from interviews were:

“Obviously, as people engage in land conflicts they farm less and even the land they cultivate remains of small area. Most of the time is spent in courts, and this affects the output per unit of labour.... A few people having land under contestation are allowed to cultivate it; hence this land is left idle... All this reduces the output farmers engaged in land conflicts get from Irish potatoes farming activities. (DPO Interview, 2018).

Findings further showed that land conflicts had affected the productivity of Irish potatoes. Prominent farmers who used to sell a lot of Irish potatoes ran out of business after court blocking their plots due to conflicts, little was produced from the land contested resulting into a few traders coming to Kisoro District for business in Irish potatoes. The output per farmer also reduced with the peace of mind lost as people engaged in quarrels, fights, and disagreements due to land conflicts.

Related opinions were raised from the FGDs held in all the four (4) Sub counties in Bufumbira South. Effects pointed from majority of participants in FGDs conducted in the selected sub counties were summarised thus; land conflicts exposed farmers to injuries which deter them from engaging in farming activities for long, court injunctions not to use land reduces the land available for Irish potatoes, fear and quarrels and sometimes murders in the end. As a result of land conflicts, smallholder Irish potato production in Kisoro District had reduced.

Specifically, results on the effects of land conflicts on the yield attained by smallholder Irish potato farmers were established and presented in Table 4.9.

Table 4.9: Significance of Land Conflicts Effect on the Yield of Smallholder Irish Potatoes (2017)

Paired Sample test	Paired differences					t	df	Sig. (2-tailed)
	Mean	Standard deviation	Std. Error	95%CI				
				Lower	Upper			
Average yield before	4727.95	21191.794	1521.482					
	9.386	4.295	308.377	330.331	1.547	3.044	193	0.003
Average yield after	3789.39	18428.002	1323.053					

Results in Table 4.9 show that, using a t-test there was a significant difference in average yield of Irish Potatoes before a conflict and after engaging in a conflict. This was indicated by a significant p-value ($0.003 < 0.05$). This showed that, as a result of the conflict, the average Irish potato yield per season reduced. This is because part of the land being contested would be idle not giving any yield. The researcher further established the effect of land conflicts on the income earned by farmers. This was established through comparing the average income held by farmers before and after the conflicts. These findings were established as presented in Table 4.10.

Table 4.10: Average Income per Hectare of Irish Potatoes among Smallholder Farmers (2017)

S/No.	Period	Average Income (Shs/Ha)
1	Before conflict	3,939,954.18
2	After conflict	3,157,826.46
	Difference	782, 127.27

Results indicate that on average, the yield per hectare reduced by 782,127.27 UG shillings after the farmer got involved in a conflict on the land. This reduction in income was attributed to the effects of land conflicts among others, on farming activities such as time devoted to planting, caring for the garden, the size of farm land cultivated, and the labour flow/usage during the process of farming. The reduction from Ugx 3.9 million (m) to Ugx 3.2m, accounted for a 20% decline or loss in income from the yields before conflict on the land.

4.5: Land Conflict Management Strategies among Smallholder Irish Potato Farmers

The other study objective was to establish the management strategies used by smallholder farmers to resolve land conflicts. Results obtained on this were categorised under inter-personal land conflict management strategies, Local Government mediated in resolving land conflicts among farmers, as well as laws and policy strategies that have been used to resolve the land conflicts among smallholder farmers in Kisoro District. The findings on the land conflict management strategies as used by smallholder farmers were as presented in Table 4.11.

Table 4.11: Existence and Scope of efforts to Minimise and Resolve Land Conflicts**(n=202)**

Response	Respondents (%)
<i>Are there efforts to reduce land conflicts?</i>	
Yes	83.2
No	16.8
<i>Stakeholders involved in reducing land conflicts</i>	
Local leaders	4.5
Local Government	26.7
Family	19.8
Courts	33.7
Clan leaders	9.9
Individual persons	5.4
<i>Actions taken when a land conflict occurs</i>	
Take person to court	54.0
Ask family members' intervention	17.3
Fight person out of land	9.9
Ignore and leave it	0.0
Ask for clan elders' help	9.9
Fence the land	8.9

Results in Table 4.11 show that eight (8) out of each ten respondents (83.2%) revealed that it was true there were efforts to control and reduce land conflicts in Bufumbira South. This was mainly considered to be a role of courts (33.7%), local government leaders (26.7%) and the family (19.8%). There were also efforts to manage land conflicts such as land demarcation and historical boundary conflicts by clan elders, local leaders and individual persons themselves. However, most of these efforts were not a success and not often used by the majority smallholder Irish potato farmers in Bufumbira South.

More so, results revealed that, taking a person to court was the most immediate action taken by aggrieved persons due to land conflicts in Kisoro District (54%), other measures were also used such as asking for the family members' intervention and settle the dispute, fencing the land and asking clan elders for help. Close to 10% fought/confronted the person with whom they had a land conflict. Important to note was that none of the respondents ignored or left the land for the other party indicating the level of attachment to land as a source of livelihood, power and prestige. Findings on strategies being used to manage land conflicts were presented in Table 4.12.

Table 4.12: Strategies being used to Manage Land Conflicts (n=202)

Strategies	Respondents (%)
Talking over the area of contestation individually	4.5
Ignoring by migrating to a new place	1.5
Keeping quiet and ignoring the conflict	0.0
Negotiations to sell the land	7.4
Physical confrontation	38.6
Legal action	44.6
Seeking help from land tribunal	1.5
Putting a land commission	2.5
Mediation through clan meetings	5.9

Results indicate that most of the respondents (44.6%) used legal action that involved taking the offender to local courts or land courts at the district. None of the respondents (0.0%) had ignored the conflict on their land. Findings further established that peaceful negotiations to sell land and mediation of conflicting parties by clan elders in clan meetings practised. This was because most of the clan elders knew boundaries, traditional

background information about the land under conflict and were considered to be impartial in handling land related issues. Where the party was not comfortable, then he either sold the land or resorted to legal action.

Further findings also revealed that where no strategy could help the aggrieved parties, one of the parties would migrate to new places leaving the land in the hands of the tribunal, commission or court to be sorted with time. Also, results showed that while majority of the people resorted to court, some of the respondents believed courts could not fully resolve their land conflicts. This was attributed to a number of reasons including no land courts in the area, distance travelled before they get the nearest courts of law and the traditional belief people still had in local and clan courts in resolving their own land matters. To others, courts were considered to be corrupt and several times took longer to grant justice which wasted time and financial resources on part of the aggrieved land owners.

Table 4.13: Suggestions to End Land Conflicts in Bufumbira South (n=202)

Suggestions to end land conflicts	Respondents (%)
Have better land laws	34.2
Setting borders with community leaders	43.1
Acquiring titled land	54.0
Getting a land tribunal closer to people	11.4
A corrupt free land court	29.7
Better land inheritance procedure	50.5

Other related suggestions to end land conflicts in the study were pointed out in Table 4.13 and included, acquiring land title to every land holdings or transfer from the genuine authorities, and improving on the land inheritance procedures followed among the

Bafumbira community. The study also found that setting borders between two land owners should be done in the presence of the community leaders (43.1%). More so, it was revealed that there was need to have corrupt free court to assist settle most of the land disputes. A number of conflicts taken to court for address were overdue. This finding implies that there were a number of individual, community and legal strategies that could be used not only to reduce but totally end land conflicts in Bafumbira south, most preferably using formal way of acquiring land by title.

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

5.1. Introduction

This chapter presents the discussion of the findings regarding the study to assess the land conflicts and management strategies used by smallholder Irish potato (*Solanum tuberosum*) farmers in Bufumbira South, Kisoro District. The results were obtained from 202 respondents from Muramba, Nyarusiza, Chahi, and Nyakinama sub counties who actively participated in the FGDs and interview sessions. The respondents were representative in terms of gender, age, and education. The male dominated since land ownership and decisions regarding land were taken mainly by men. For the case of a widow, the in-laws stood in for her in matters regarding land in most instances. Most of respondents, however, were not educated, and this caused them to be more susceptible to land conflicts than the educated ones. Based on these bio-data characteristics, the specific findings on study objectives are discussed.

5.2. Nature of Land Conflicts Experienced by Smallholder Irish Potato Farmers in Kisoro District

Results showed that majority of the farmers grew Irish potatoes on small land area of less than two (2) hectares of land. Surprisingly, from the previous trends, Kisoro was considered top Irish potato suppliers in the country (UBOS, 2010). This was due to changes in farming processes including the increased occurrences of land conflicts. This was pointed out by Yamano & Deininger, (2005), who noted that land-related conflicts pose a threat to rural economic activities such as agriculture in most Sub-Saharan African

countries. Such conflicts caused adverse effects on overall productivity of farmers. This was a key finding in regard to land conflicts and Irish potato productivity in Bufumbira South, Kisoro District.

On issues regarding the occurrence of land conflicts, at least six out of each ten respondents revealed they had ever been involved in a conflict, or their neighbours had one. The study found out that, by the study time (2018), more than 40% of the respondents had on-going land conflicts. This significantly showed that the level of land conflicts was high for people in Bufumbira South, a finding that relates closely to what was pointed out by John & Sally (2011), that Uganda is experiencing a great level of land conflicts. With only a few exceptions, where parents had spelt out sharing in a 'will', or an individual had acquired land with a genuine land title, most of people in Kisoro District, specifically Bufumbira South, experienced high levels of land conflicts.

Further findings revealed different dimensions in which people experienced or were engaged in land conflicts in Bufumbira South, and this was attributed to boundaries, and their dislocation, and land grabbing by relatives, or clans from other communities. These 'grabblings' were common causes and reflected on what had earlier been pointed out by Lund, Rie & Sjaastad, (2006) who said, "the nature, magnitude and scope of each conflict depends on the perpetrators, land size, as well as ownership rights." This however, was not the case for most households in Kisoro District since most of the farmers did not have large hectares of land. Additionally, the study noted that in instances of government takeover of land to offer social services, it was met with stiff rejection, at times causing conflicts until the land owners were compensated. The family differences dominate the

nature of the land conflicts in Kisoro District. Land title manipulations as well as inflow of immigrants caused tension on land exposing the community to internal and external land aggression and conflicts. In relation to these findings, Rugadya, (2008) noted that land conflicts were high in Uganda based on the causative factors and the way they occurred.

This study found out that among the various causes of land conflicts was the nature of land, and how it was owned. The study noted that majority of the land in Kisoro District was owned customarily and thus ownership depended on inheritance, and sharing of the family property by children. There were disagreements between siblings on land demarcations and boundaries between plots as presented in Table 4.6. This consequently resulted into land conflicts among siblings (Barreiro *et al.*, 2016), that land conflicts may be inter-family land conflicts or siblings' disagreements as mentioned in the study by Saviori & D'odorico, (2013).

Among other causes of land conflicts were socio economic activities and as shown in Table 4.6, these included forceful takeover of land belonging to the poor farmers by the rich landowners, favouritism by parents at the time of distributing their property to children, high population pressure among others. Given that most households dominantly depended on Irish potatoes for subsistence food, and income, the demand for land was very high. This forced people to sell their land, sometimes encroaching on the neighbours' land which bred land conflicts with the new buyer. This complements the earlier view of Wehrmann (2008) who pointed out that the nature of land conflicts arose from the way farmers shared land/plot boundaries, inheritance, ownership by various

claimants of the land, multiple sale of land, violent land grabbing, and disputable payments. These were key causes of land conflicts in Bufumbira South.

In addition, poverty made people to falsify their boundaries and fake land titles to get money. This cause of land conflict was also key in other parts of Uganda, and this finding relates with the study conducted by Rugadya, (2009) and URI &ARLPI, (2012) who noted that poverty was one of the indirect causes of land conflict which increased greed for land influenced shifting of boundaries where no boundary markers existed or where there was a heap of stones. Where no boundary markers existed, respondents had faced encroachment on their plots during primary cultivation and this later resulted into land conflicts.

Demographic causes of land conflicts identified included population explosion, refugee influence and the ethnic heterogeneity. A population density of 363 persons per square km indicates severe land scarcity that was identified to cause inheritance conflicts among the family members. A vast number of new refugee immigrants from the DRC was a contribution to population explosion. Yaxley & Jaber, (2015) noted that Kisoro District received 3,746 refugees in 2015. This is in line with Funder *et al.*, (2012) and Rugadya, (2009) who noted that population pressure is one of the key demographic drivers to land conflicts. Rugadya, (2009) and Green (2010) further noted that ethnic differences such as those in Kasese District among the Bakhonzo, Basongora and the Banyabindi can drive to land conflicts. This study found out that there was a struggle for land among the Hutu, Tutsi and Twa.

Political factors were also cited as key factors escalating the level of land conflicts. According to Table 4.6, these included government takeover without notice to the land owner for purpose of providing social services and high land compensation rates which made people falsify their demarcations to Chief Government Valuer (CGV). More so, as a need to construct social and public infrastructure for political and social reasons arose, the government would forcefully take over land, which was considered as bad. This was so when people affected were compensated. This is in tandem with the study by Kazoora (2003) on conflicts resulting from nationalization of private property. The privatization of the formerly public land in Rugina, Nyarusiza and extension of the boundaries (compulsory land acquisition/nationalization of state land) of Mgahinga Gorilla National Park in Muramba and Nyarusiza was a political factor which led to political land related conflicts. Indeed, this further signifies that the nature of governance and political ideologies influenced the nature of land conflicts in the area. This concurs with the earlier view of Wehrmann, (2008) who noted that land conflicts arose from political issues such as nationalisation or privatisation of land. Also established were legal related causes of land conflicts, which mainly put blame on how and in what manner land conflicts were attended to.

Most often, people developed deviant behaviour after seeing their neighbours and friends, taking long without receiving justice in courts due to corruption. Local clan elders also meddled into land affairs with little experience and legal expertise which increased land conflicts and grudges.

5.3. Effects of Land Conflicts on Irish Potato Productivity in Kisoro District

The study found out that as a result of land conflicts, most households and Irish potato farmers in Kisoro District, specifically in Bufumbira South experienced challenges which constrained their productivity. Results indicate that most land conflicts were associated with primary cultivation along borderlines, and every season, very high but negative effect of land conflicts was noted in relation to potato farmers (Table 4.7). These findings concur with what was cited by Funder *et al.*, (2012) that land conflicts have significant negative impacts to farmers and to development.

The study results showed a number of ways in which land conflicts affected potato farming activities which included delayed planting due to conflicts and several times the plots remained idle. This lowered the scope of land farmed and overall productivity levels, just as cited by Muyanga & Gitau, (2013) that when plots are not having titles or are not legally owned, they may not be productive. This is because most often land in conflict is associated with the yet- to-be heard cases in court and as result, is left idle.

More so, through interaction with key potato farmers, it was established that as a result of land conflicts, people engaged in quarrels and court cases, which were time consuming, exposed them to fights and injuries, while the survivors got imprisonment sentences. This affected their contribution to land usage and productivity in the short and long run. This is in agreement with the view held by Mercy Corps (2011) that land conflicts severally resulted into physical fights, at times resulting into loss of life, injury, or imprisonment.

These people involved are key players in agricultural productivity which reduces outcomes of the activity in the long run.

In a practical point of view, there had been reduced flow of customers to Kisoro with the increase in land conflicts. Kisoro District and more specifically Bufumbira south used to be a dominant potato producing area but this has now reduced as shown by the study findings. More so, land conflicts had widened the family differences, and hence lowered motivation and interest for people to take an active role and devotion to farming activities. These challenges which translated into significant negative effects on the farmers concurred with the earlier views held in Muyanga and Gitau (2013) that land conflicts interfere with farmers' livelihoods because they cannot farm their plots in an optimal way.

5.4. Management Strategies used by Smallholder Irish Potato Farmers to Mitigate Land Conflicts in Kisoro District

The study focused on establishing the different management strategies that smallholder farmers could utilise to resolve land conflicts. The study findings in Table 4.10 indicate that to a great extent, farmers believed it was possible to minimise land conflicts as cited by majority (83%) of the farmers. This required involvement of local leaders, local government representatives of the family, courts, clan leaders and farmers themselves. What was a key area of question, was whether these stakeholders performed this noble mandate, and to what extent? Results to answer the questions were further established (see Table 4.10) and this included mainly seeking court redress, among other measures noted and described.

From the study, over half of the respondents (54%) noted that the address of the challenges related with land conflicts required taking the person to court. This was a formally recognised means of solving land issues, as mentioned by Wesaka, (2017). However, actions taken by court thereafter were not well relevant to address and resolve the challenge fully (see Table 4.11) as courts were blamed of being corrupt and delaying justice to the land victims. These were pointed out in the earlier study reports of URI & ARLPI, (2012) where they highlighted the procedure followed by the various institutions in managing land conflicts especially courts of law. This was primarily considered as legal measures, which included setting up land tribunals and working towards fulfillment of the set land laws of Uganda.

From the findings in Table 4.11, the study noted that interventions and mediations by family members and clan leaders in addition to help from local leaders were core areas in which land conflicts could be resolved more resolutely. The study findings showed that more than 17% of the respondents believed in having mediation where the family takes a leading active role, although nearly 10% considered seeking the clan elders' help since these people knew the history of the land being contested. This delayed the process of resolving these conflicts, and a number of such conflicts remained unsolved. This largely focused on family and customary approaches, which are also emphasised by Wehrmann (2008) who identified the strategies of land conflict resolution as consensual and non-consensual approaches.

In other instances, respondents revealed that peaceful resolutions could be made although this did not mean ignoring the land conflicts completely (Table 4.11). Among these measures were fencing the land and ensuring that each farmer kept to his portion of land.

This was revealed by about 9% of respondents (Table 4.11). This was one way of avoidance which was adopted by a few (less than 10%) of the people involved in land conflicts in Kisoro District. On the contrary, there was confrontation where people got involved in a physical fight over the land under contestation. These aspects were not new as they had earlier been recommended in the study by Pankhurst, (2003) that resolving land conflict depends on type of conflict and powers/decisions taken by the parties. This several times determined where the persons could use confrontation or avoidance approaches in resolving the problem.

Conclusively, the study found out that other possible means of ending land conflicts in Kisoro District included paying attention to laws and making them better, setting borders with community leaders, acquiring land, and setting up a land tribunal to expedite the process of delivering justice to the people affected by land conflicts.

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1. Introduction

This chapter contains the summary of the entire study. It also presents the conclusions arising from the study and recommendations which can improve the management strategies of land conflicts particularly those which affect Irish potato productivity in Kisoro District.

6.2. Summary of the Study Findings

The study drew its attention to three (3) objectives. The summary is presented in line with these study objectives.

In regard to the first objective, it was found out that the level of land conflicts was high and most found among the rural parts of Bufumbira South. People who were not actively involved in land conflicts had their neighbours involved. Different conflicts were noted including land grabbing, siblings' disagreements, inter-clan quarrels, government takeovers, and the influx of immigrants and foreigners from DRC and Rwanda. The study further established that the major causes of land conflicts were discriminative tendencies in land inheritance, disagreements between siblings, poor demarcation of boundaries, government takeover of land, poverty and population increase.

In regard to the effects of land conflicts on productivity of Irish potatoes, it was established that usually conflicts emerged at the time of cultivation and were recurrent over the seasons. The findings revealed a high negative effect of land conflicts on

productivity of Irish potatoes that caused a 20% loss in yield and income. It was evident that land conflicts delayed the planting seasons, court injunctions due to land conflicts reduced the land area planted; quarrels and fights increased injuries, at times death of potential farmers; reduced customer flow, devotion and motivation to engage in work. Farmers affected by land conflicts wasted productive time in court hearings all of which affected the production and productivity of Irish potatoes in the study area.

From the findings, a number of management strategies used by smallholder farmers to resolve land conflicts were established. These include talking it over between parties with a land conflict, negotiation to sell the land, fencing off the land and involving clan members to mediate the conflicts. Taking legal action was the most noted strategy and physical confrontation was also pointed out although discouraged. There was need to improve on land laws, set borders well, acquire registered and titled land. There was need for emphasis on a corruption free land court in the study area.

6.3. Conclusions

The study investigated the nature, effects and management strategies of land conflicts used by smallholder Irish potato farmers in Kisoro District. The following conclusions were drawn from the study findings.

1. Land conflicts are increasing in Bufumbira South. The land conflict management strategies were known but less practiced which significantly affected overall productivity of Irish potatoes- the leading agro-based activity in the study area.

2. Land conflicts in Kisoro District are manifested as land grabbing, borderline fights/relocation of boundaries, selling to multiple buyers and disagreements by siblings regarding family land inheritance. All these exacerbate the rate of land conflict occurrence in Bufumbira South, Kisoro District.
3. Land conflicts reduce the productivity of Irish potatoes. This is shown by the fact that most potential farmers are idle during land conflicts or are not interested to take part in farming activities on the land that is associated with a conflict. Less land is being cultivated and a number of customers fear to go to Kisoro District for trading in Irish potatoes in case they buy from contested lands and make losses. Yields and incomes from Irish potatoes are reduced by 20%.
4. It is vital to mitigate the vice of land conflicts in the area. This requires taking not only peaceful negotiations and mediation but also implementing the land laws and policies. Additionally, there is need to refer land conflicts to court which should give timely justice free from corruption and to no extent allowing for confrontation among the persons involved. Some strategies are not well implemented such as court options where in some matters justice is delayed and marred with corruption tendencies.

6.4. Recommendations

Land remains a key resource for the community of Kisoro District, Uganda at large and globally. However, results showed that conflicts on land were at an increase in Bufumbira South and Kisoro District in general. There is need to address the challenge of land conflicts through coming up with practical land policy strategies and

recommendations. In light of the findings and conclusions established, the study comes up with the following recommendations:

1. The local leaders and other stakeholders especially at the district level need to have an improvement in handling land conflicts and where possible a review of the laws, ordinances and policies regarding land. This can be done with support from the Uganda Law Society, Uganda Land Board and the Ministry of Lands Housing and Urban Development. Such laws should clearly spell out the scope and nature by which land can be owned through inheritance. Proper procedures of inheritance need to be included in the laws of Uganda governing land by referring to the Uganda Land Policy and the Land Act, 1998 with its amendments.
2. The study recommends that the Kisoro District Land Board in collaboration with local leaders undertake regular sensitization regarding the land matters especially in rural areas. This can help understand the process of land transfer especially through buying from local persons and land inheritance.
3. There is need for the Government and Policy makers to encourage people to process and acquire land titles for their lands which can be supervised to avoid land quarrels and conflicts. This can be done through reducing the title deed processing costs, and making the services reach closer to the people, for instance, putting an officer at the sub county to help in this matter. The Uganda's MoLHUD established and operationalised Ministry Zonal Offices (MZOs) in some parts of the country to deal with issuing of title deeds but there is none in Kisoro District. One of the MZOs ought to be established in Kisoro District to help handle land matters with urgency.

4. There is also need for checks and balances in the judicial system especially the commercial and land courts which were highly blamed for being unfair in delaying justice and having corrupt officials. The sub county land tribunals need to be instituted to complement and oversee the land court issues in Kisoro District specifically.
5. There is need for religious and opinion leaders to encourage people to peacefully settle their differences regarding land conflicts or by use of legal means. This could save fights, injuries and sometimes death which were reported to be constraining productivity of the potential farmers in the area by resulting into a drop in Irish potato yields.
6. The local and clan elders should be entrusted with the mandate of helping people sell their land at the local level under supervision of land tribunals. This is because they have full knowledge of different borderlines and boundaries. People should be sensitised never to buy land without any official since this could expose them to buying land that has already been sold off to other persons.
7. The study recommends that land conflicts ought to be given immediate address since they were significantly and negatively affecting productivity of Irish potatoes in Kisoro District and Bufumbira South in particular. This is essential since Irish potatoes are a leading source of food and income for the people of Bufumbira South, Kisoro District.

6.5 Areas for Future Studies

According to the findings of the study, further research studies should be done in the following areas:

- i. The role of local leaders and culture in influencing land management activities of rural communities in Uganda.
- ii. The influence of agricultural land conflicts on the socio-economic welfare of farm families in Uganda.
- iii. The contribution of formal institutions in the management of land conflicts that affect crop and livestock productivity.
- iv. Factors influencing conflict resolution, management and mitigation on agricultural lands in Uganda.

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APPENDICES

Appendix I: Questionnaire for Smallholder Irish Potato Farmers

Dear respondent,

I am Gad Kwizera, a Master's Degree student of Kyambogo University conducting a research study on "Assessing the land conflicts and management strategies used by smallholder Irish potato (*Solanum tuberosum*) farmers in Kisoro District, Uganda".

I request you to answer the following questions and the information given will be held confidential and only for academic purposes.

Thank you.

Tick in the appropriate box or fill in the spaces provided

Section A: Bio-data and General Information

1. Village _____ of

Residence.....

2. Parish..... Sub

county.....

3. Respondent's

age:.....Gender.....

4. Marital status of respondent

a) Single

c) Married

b) Widow

d) Divorced

5. Education level (highest attained)

a) No formal education

b) Primary

c) Secondary (O &A)

d) Certificate

e) Diploma

f) Degree

h) Post graduate diploma i) Master's Degree j) PhD Other

6. Number of children/dependants in your home?

None 1-5 6-10 Over 10

Section B: Nature of Land Conflicts among Smallholder Irish Potato Farmers

7. What is the size of the land you own (in hectares)?

.....

8. Have you ever experienced or got involved in a land conflict where you grow Irish potatoes?

Yes No

9. In no, in 8 above, do you have neighbours who are having a land conflict?

Yes No

10. If yes in (6 or 7 above), when did this land conflict (s) occur?

This year (2018) Last year (2017)

Two years ago More than Two years ago

11. If no, why do you think you have had no land conflict?

Properly set my boundaries

I share the land with my brothers so we know our boundaries

We bought land with a title

Our father had properly demarcated the land

Any other (specify).....

12. What was the nature of the land conflict?

Dislocation of the boundary of the land

Grabbing of the land by a brother/member of family

Grabbing of land by a member of another clan

Taking over land by force by the government

People from Rwanda / DRC occupied my plot by force

Any other form/type (specify)

13. How do you consider the land conflict you had/have with the person (s) above?

Very bad

Small issue

14. In your opinion, how would consider the level of land conflicts in your village?

Very high

High

Low

Very low

15. In which way has the nature of land ownership caused the above conflicts?

Owning land customary has no true ownership

Inheriting land from parents who do not write you a will.

Siblings deny boundaries and this causes conflicts

Any other (specify).....

16. Which of these political issues have increased land conflicts in your sub county?

Taking land for government use

Government constructing roads and other facilities without pay

Taking over land as a forest reserve/game reserve without pay

Government land compensation causes conflicts among family members

Corruption in land courts

Any other form/type (specify).....

17. Which of these are socio-economic factors that cause land conflicts in your village?

The rich want to take land by force

Land fragmentation where people sell their plots, and encroach on boundaries

Poverty has increased land grabbing among family members

Favouritism among parents when giving their children

Wars and refugees inflow

Any other form/type (specify).....

18. Apart from the above, in your opinion why have land conflicts continued to occur in your village?

Land inheritance is cause of land conflicts among siblings

Favouritism by parents to some children during sharing their land to children

Having many children and dependants

Increasing population pressure on land

Section C: Effects of Land Conflicts on the Productivity of Irish Potatoes

19. When can a land conflict arise?

When planting / cultivation along the plot/land borderline

Every season of cultivation

On harvesting

When he/she is selling or intends to sell the land/plot

20. In your view, how would you consider the effect of land conflicts on your potato production activities?

Highly negative Highly positive Have no big effect

21. Would you associate challenges you have in your potato farming activities to the land conflicts you have had on that land?

Yes No

22. In which way have land conflicts affected your potato farming activities?

Delayed planting which affects quality of harvest

Results into court orders to stop using the land reducing land acreage cultivated

Widens quarrels and court cases which waste time needed for potato farming

Affects the farming processes such as weeding and spraying lowering quality

Increased Injuries and death of some potential potato farmers

Any other, specify.....

23. How has land conflicts affected the social and economic activities related to potato production?

Reduced the flow of customers

Lowered the yield level of Irish potatoes in the sub county

Lowers emotions and interested to work

Widened family conflicts and instability

Any other, specify.....

24. Note: The farmer is free to give the yield in bags in which 1 bag/sack=120kgs.

Period	Season I(kgha ⁻¹)	Season II(kgha ⁻¹)	Season III(kgha ⁻¹)
Before the land conflict			
After the land conflict			

Note: The farmer is free to give the yield in bags in which 1 bag/sack=120kgs.

The yield will be used to determine the income in which 1 bag/sack=Ugx.100,000/

1kg=Ugx.833

Section D: Management Strategies used by Smallholder Irish Farmers to Resolve Land Conflicts

25. Are there efforts to minimise and resolve the land conflicts in this area?

Yes No

26. Who is taking a lead in reducing land conflicts in this area?

The Local Leaders Family Clan elders
 The Local Government Courts Individuals

27. If you have a land conflicts, what would you do with it?

Take the person to court Ignore and leave it

Ask for family heads to intervene Ask for help from clan elders

Fight the person out of the land Fence my land

Any other.....

28. In you view, how can one resolve a land conflict peacefully?

Talking over with the neighbour about the right borderlines

- Migrating and leaving the person there
- Keeping quiet and ignoring the conflict
- Negotiating to sell the land to another person

29. How are some people handling their land conflicts in your area?

- Physically fighting each other
- Taking them local council courts
- Seeking for a land tribunal
- Asking for the government to put a land commission
- Have unending quarrels and silent enmity against each other
- Holding clan meeting to re-set the boundary

30. Do you think people can get help to resolve the land conflicts through courts?

- Yes No

31. Why do you think so,

- Courts handling land conflicts are few in our area
- Courts are a distance far for locals to visit them regularly
- Land conflicts can be solved well using local communities
- Some court officials are corrupt and give injustice judgement
- Court solutions take longer which wastes time and money

32. In your view, what could be done to end land conflicts in your sub county?

Proper land laws

Setting borderlines with the community leaders

Selling land and acquiring title documents

Getting a land tribunal to help in sorting land cases

Any other, please specify below.....

Thank you for participating!

Appendix II: Interview Guide for Smallholder Irish Potato Farmers

Topic: **Assessing the land conflict and management strategies used by smallholder Irish potato (*Solanum tuberosum*) farmers in Kisoro District, Uganda**”.

Section A: Bio-data, Introductions and General Information

I am Gad Kwizera, a Master’s Degree student of Kyambogo University conducting a research study on ‘**Assessing the land conflict management strategies used by smallholder Irish potato (*Solanum tuberosum*) farmers in Kisoro District**’. I request you to answer the following spare some of you time and interact with me on the above topic. Please note that the information you give will be held confidential and used only for academic purposes

1. Would you please tell me about yourself (Probes for village of residence, age, gender, marital status, level of education and other general information

Section B: Nature of Land Conflicts among Smallholder Irish potato Farmers

2. What is the size of land you own (in hectares) under Irish potato growing?
3. Have you ever had a land conflict with your neighbours where you grow Irish potatoes?
Yes No
4. What about your neighbors?
5. If there was a conflict, when did this land conflict (s) occur?
6. Why do you think people (including you), get land conflicts in this area?
7. What are the common forms of land conflicts in this sub county?
8. How bad are these land conflicts?

9. In your opinion, how would you consider the level of land conflicts in your village?
10. How have the way people owned land in this area caused land conflicts?
11. Which of these political issues have increased land conflicts in your sub county?
12. What factors within your society can you blame for the increase in land conflicts in your village?

Section C: Effects of Land Conflicts on the Productivity of Irish potato

13. In the activities of Irish potato farming when do people with neighbouring plots or land usually disagree or get into a conflict?
14. How would you consider the effect of land conflicts on your potato production activities?
15. Would you associate challenges you have in potato farming activities to the land conflicts?
16. In which way (specifically)?
17. How has land conflicts affected the social and economic activities related to your potato production?
18. What was the variability in yield due to land conflicts? (Use the table below to fill the information)

Period	Season I(kgha⁻¹)	Season II(kgha⁻¹)	Season III(kgha⁻¹)
Before the land conflict			
After the land conflict			

Note: The farmer is free to give the yield in bags in which 1 bag/sack=120kgs.

The yield will be used to determine the income in which
 1bag/sack=Ugx.100,000/

1kg=Ugx.833.

Section D: Management Strategies used by Smallholder Farmers to Resolve Land Conflicts

19. Are there efforts to minimise and resolve the land conflicts in this area?
20. Who is taking a lead in reducing land conflicts in this area?
21. If you have a land conflicts, what would you do with it?
22. In you view, how can one resolve a land conflict peacefully?
23. How are some people handling their land conflicts in your area?
24. Do you think people can get help to resolve the land conflicts through courts?
25. Why do you think so,
26. In your view, what could be done to resolve and end land conflicts in your sub county?

Thank you for participating!

7. What are the common forms of land conflicts in this District?
8. How bad are these land conflicts?
9. In your opinion, how would consider the level of land conflicts in Kisoro District?
10. How have land ownership systems caused land conflicts?
11. Which political factors have increased land conflicts in Kisoro District?
12. What other social, economic and cultural factors within you society can you blame for the increase in land conflicts in Kisoro District?

Section C: Effects of Land Conflicts on the Productivity of Irish Potatoes

1. When do people with neighbouring plots or land usually disagree or get into a conflict?
2. How would you consider the effect of land conflicts on potato production activities in Kisoro District?
3. Would you associate challenges in potato farming activities to the land conflicts?
4. In which way (specifically)?
5. How has land conflicts affected the social and economic activities related to potato production?

Section D: Management Strategies used by Smallholder Farmers to Resolve Land

Conflicts

6. Are there efforts to minimise and resolve the land conflicts in this area?
7. Are you actively involved in resolving land conflicts?
8. Who else (office/organisation) is taking a lead in reducing land conflicts in this area?
9. If you have a land conflicts, what would you do with it?

10. In your view, how can one resolve a land conflict peacefully?
11. Apart from peaceful resolutions, how else are people handling their land conflicts in Kisoro District?
12. Do you think people can get help to resolve the land conflicts through courts?
13. Why do you think so?
14. In your view, what could be done to resolve and end land conflicts in Kisoro District?

Thank you for participating!

Appendix IV: Focus Group Discussion Checklist

For Persons with or had ever had a Land Conflict

Time of the Focus Group

Discussion:.....Date.....

Location/Place:.....

Topic of study: **Assessing land conflicts and management strategies used by smallholder Irish potato (*Solanum tuberosum*) farmers in Kisoro District, Uganda’.**

Biodata, Introductions and General Information

1. Self-introduction (Researcher)
2. Self-Introduction (Respondents/ Farmers)

The topic will be discussed with the Researcher a Moderator and the Potato farmers as Discussants/Participants. The key Subtopics of Discussion with be:

Sub-Topic 1: Nature of Land Conflicts among Smallholder Irish Potato Farmers

- The scope/extent of occurrence of land conflicts (look at how often do they occur, their severity, perpetrators, etc.)
- Types of land conflicts (look at-small quarrel, grabbing, border conflicts, government take overs, title manipulations, fraudsters in land selling matters, etc.)
- Causes of land conflicts (personal, economic, cultural, political, social, demographic)

Sub-topic 2: Effects of Land Conflicts on the Productivity of Irish Potato Farmers

- How frequent are the land conflicts?
- Those whose conflicts ended, how were they resolved?
- Those with pending land conflicts, why they are delaying to be resolved?
- Effects of land conflicts on (personal, family, community, earnings, farming activities, yield, and land acreage planted, faming process, etc)

Sub-topic 3: Management Strategies used by Smallholder Farmers to Resolve Land Conflicts

- Who should do what in land conflict management (focus on different stakeholders)?
- What is so far done in resolving land conflicts in their communities?
- Areas of improvement in resolving land conflicts in Kisoro District.

Thank you for participating!

Appendix V: Introductory Letter



KYAMBOGO UNIVERSITY

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Office of the Dean, Graduate School

23rd March 2017

To Whom It May Concern

RE: LETTER OF INTRODUCTION

Dear Sir/Madam,

This is to introduce **Mr. Kwizera Gad** Registration Number **15/U/14385/GMAE/PE** who is a student of Kyambogo University pursuing a Masters Degree.

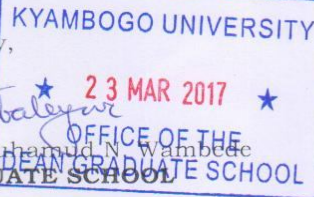
He intends to carry out research on **“Assessing smallholder farmers’ handling of land conflicts affecting Irish potato productivity in Kisoro District for 2017-2018”** as partial fulfillment of the requirements for the award of the Master of Science in Agricultural Education and Extension.

We therefore kindly request you to grant him permission to carry out this study in your institution.

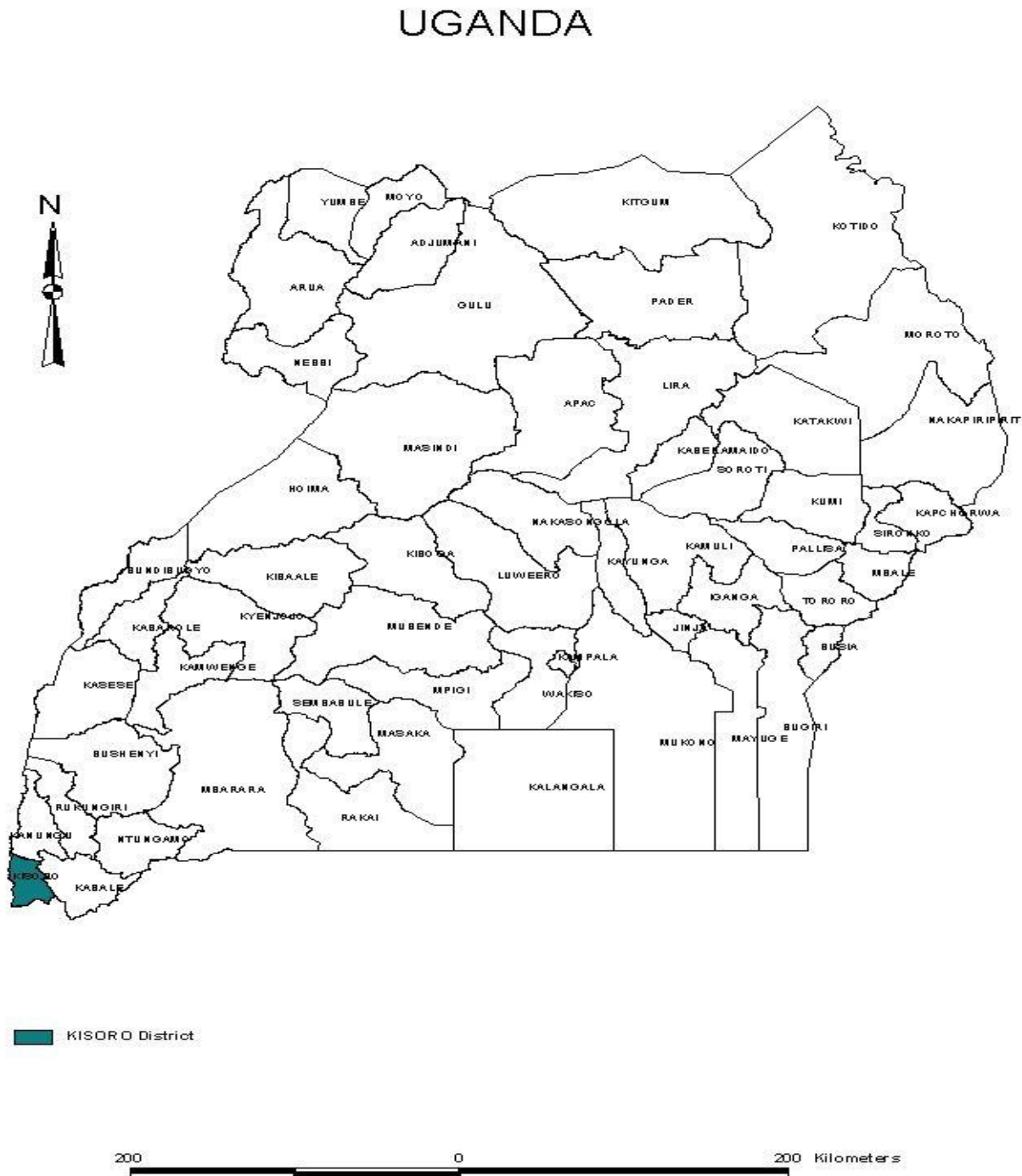
Any assistance accorded to him will be highly appreciated.

Yours sincerely,


Assoc. Prof. Muhammad N. Wambere
DEAN, GRADUATE SCHOOL



Appendix VI: Map of Uganda Showing the Geographical Location of Kisoro District



Appendix VI: Map of Kisoro District Showing the Location of Bufumbira South

