

**LAND TENURE SYSTEMS AND CONFLICTS IN RURAL SMALLHOLDER
COMMUNITIES OF MVOMERO DISTRICT, TANZANIA**

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
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ABSTRACT

Land conflicts among smallholder communities are becoming common in Tanzania. Mvomero District in Morogoro Region is one of the areas where such conflicts have been occurring frequently. This study was conducted in four villages of Mvomero District, namely Mkindo, Bungoma, Kambala and Misufini and involved about 50 respondents from each village. The main objective was to assess the relationship between land tenure systems and occurrence of land conflicts in smallholder communities in Mvomero District. Data were collected by mainly using a household questionnaire and focus group discussions. The Statistical Package for Social Sciences (SPSS) programme was used to analyse the data. Among other analyses, binary logistic regression was used to determine impact of land tenure systems on chances of land conflicts occurring in the study area. Descriptive analysis was used to analyse demographic characteristics of the respondents and land governance, while an index scale was applied to measure the extent of community awareness. The findings revealed that 100% of the entire land in the study area was village land, thus customary tenure rights were applied to govern land matters. Based on the score results obtained from the index scale, the majority of the respondents (53.6%) were aware of land tenure systems in the research area compared to 46.4% who were not aware of the systems, which implies that sensitization initiatives are still needed to increase community awareness. The major factors for land conflicts were: scarcity of resources, delaying in solving land conflicts, poor community participation in land administration, corruption and lack of land use plans. The recommendations for resolution of land conflicts are: application of land use plans, good governance on land and increasing awareness on land rights.

DECLARATION

I, Thomas John Laiser, do hereby declare to the Senate of Sokoine University of Agriculture that this dissertation is my own original work done within the period of registration and that it has neither been submitted nor being concurrently submitted in any other institution.

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Date

The above declaration is confirmed by:

Prof. Kim A. Kayunze
(Supervisor)

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DEDICATION

I dedicate this dissertation to my guardians; my grandfather the late Mzee Thomas Ole Sainepu and my grandmother NaisujakiYohanes.

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LIST OF ABBREVIATIONS

ACCORD	African Centre for the Construction Resolution of Disputes
CCRO	Certificate of Customary Rights of Occupancy
CHRAGG	Commission for Human Rights and Good Governance
CSO	Civil Society Organization
ECA	Economic Commission for Africa
ESRF	Economic and Social Research Foundation
EWS	Early Warning System
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
FGD	Focus Group Discussion
FIG	International Federation of Surveyors
GTZ	Germany Technical Cooperation
IFAD	International Fund for Agricultural Development
ILC	International Land Coalition
IUCN	International Union for Conservation of Nature and Natural Resources
LHRC	Legal and Human Rights Centre
LP	Land Policy
LUP	Land Use Plan
MVIWATA	<i>MtandaowaVikundivyaWakulima Tanzania</i> (National Network of Small-Scale Farmers' Groups in Tanzania)
NAFCO	National Agriculture and Food Cooperation
NARCO	National Ranching Corporation
NGO	Non-Governmental Organization

PAICODEO	Parakuiyo Indigenous Community Development Organization
PCCB	Prevention and Control of Corruption Bureau
PINGOS	Pastoralist Indigenous Non Governmental Organizations' Forum
TALA	Tanzania Land Alliance
TI	Transparent International
UN	United Nations
UNEP	United Nations Environment Programme
UN-HABITAT	United Nations Human Settlements Programme
UNHCR	United Nations High Commission for Refugees
URT	United Republic of Tanzania
USAID	United States Agency for International Development
VLC	Village Land Committee
WB	World Bank

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

Land is an important resource for any country's socio-economic development because it supports the livelihood of nearly everyone. The importance of land to a country's development is emphasized by the fact that most of the population derives their livelihood from land through activities such as farming, livestock production, industry, construction and other activities (Lugoe, 2008). To smallholder producers, land is an asset of enormous importance for billions of rural dwellers in the developing world (Cotula *et al.*, 2006). The eradication of hunger and poverty, socio-economic stability, and the sustainable use of the resources depend largely on how people, communities and others gain access to land. The livelihoods of many, particularly the rural poor, are based on secure and equitable access to and control over these resources. To them, land is the source of food and shelter, the basis for social, cultural and religious practices; and a central factor in economic growth (FAO, 2012). In Africa, land is vital for poverty reduction whereby about 80% of most rural households rely on it for the survival of present and future generations (ECA, 2009).

Land tenure is a set of rules that determine how land is used, possessed, leveraged, sold, or in other ways disposed of within the societies. These rules may be established by the state or by customs, and rights may accrue to individuals, families, communities, or organizations (Garvelink, 2012). FAO (2010) defines land tenure as the way land is owned by individuals or groups. Therefore, land tenure is security which refers to people's rights to control, use and manage a piece of land which is a key part of sustainable development, as agribusiness and smallholders alike need secure tenure in order to invest in the land.

Yet, in many parts of the world and developing countries in particular, property rights are weak or unclear, undermined by overlapping land claims and intense competition (FAO, 2012). Consequently, unresolved land problems caused by corruption in the land sector (PCB, 2005) or slow progress towards land reform or land use planning for the benefit of all key actors and smallholder producers in particular threatens a household's survival (ECA, 2009).

Although agricultural activities and other livelihood options are affected by various factors such as climatic conditions, markets, infrastructure, physical conditions and unequal access to land; land tenure has the most profound effect on the livelihoods of smallholders in Africa (ECA, 2005). The issue of how best to increase land tenure security of the poor and protect the land holdings of rural communities has been brought to the fore due to increasing land scarcity caused by population growth, environmental degradation, climate change, and violent conflicts. Unfortunately, experience from the areas where land disputes have been happening frequently suggests that smallholder producers in rural communities have very limited capacity to respond to these challenges. This powerlessness is often intensified by the fact that rural communities often operate under customary laws and have no formal legal title to their lands or documentation of their claims due to socio-economic nature of occupants (FAO, 2010). The importance of land issues to social and economic development in Africa is unquestionable. This is due to the fact that land is becoming an increasingly scarce resource in many parts of the continent, and also a more and more conflict ridden resource. This implies that issues related to land rights and land conflicts now range high on the policy agenda, both in African countries and among international donors (Odgaard, 2006).

For Tanzania, as in other parts of the world, land is also a primary means of both subsistence and income generation in rural economies. Access to land, and security of land rights, is a primary concern to the eradication of poverty. In rural areas, land is a basic livelihood asset, the principal form of natural capital from which people produce food and earn a living (Fairley, 2012). The vast majority of Tanzania's agricultural land is "village" land. As such, most land is not privately owned, rather it is nominally owned by the state and administered by village councils (URT, 2011).

For governance of land tenure, Tanzania's 1995 Land Policy, Tanzania's 1999 Land Act and Village Land Act are major guidelines used to govern land issues in order to promote and ensure a secure land tenure system as well as promoting an equitable distribution of and access to land by all citizens (URT, 1995 and URT, 1999). On one hand, the Land Policy (1995) encourages legal ownership of land by individuals, private sectors, communities and villages through acquisition of title deeds, so as to reduce land conflicts and increase value of land. On the other hand, the Land Act (URT, 1999) and the Village Land Act (URT, 1999), both spell out public land to fall under three major categories that are: general land, village land, and reserved land. The aim of all these laws is to guide and regulate land use and ownership, particularly in Tanzania Mainland.

Regardless of provision of all these legislations that aim to guide and regulate land use and ownership in Tanzania, smallholder producers (peasants, pastoralists and others) are seen to be victims of endless conflicts over land. These conflicts have been among smallholder producers themselves on one hand, and between them and large scale investors or government institutions on the other hand. For the context of this research, the terms land conflict and land dispute have been used interchangeably to describe competing claims and contest over the same piece of land.

1.2 Problem Statement

Land use conflicts are common phenomena in Tanzania and the world at large. One of the major reasons is that land does not expand while people and other living organisms that depend on it keep on increasing. This inconsistent ratio between land as a basic resource for livelihoods and its users has been leading to outbreak of land use conflicts (HAKI-ARDHI, 2009a). At the same time the management of land and natural resources is one of the most critical challenges today facing developing countries including Tanzania, where great efforts are being made to attract large scale investors in the agricultural sector and thus leading to increased land conflicts among land users (UN-HABITAT, 2012).

For the past five years, Mvomero District has been one of the areas in Tanzania where land conflicts among land users have been reported frequently (TALA, 2012). In response to the conflicts, some efforts have been made by the government and other stakeholders such as HAKI-ARDHI, Legal and Human Right Centre, MVIWATA and others to solve the land conflicts among land users in Mvomero District. However, still the problems persist, and have even more advanced to a stage of using firearms (LHRC, 2013). As stated by IUCN (2010) and Msuya (2013), it is obvious that there is still a lot to be accomplished or consolidated in order to overcome the problem. Furthermore, there have been a number of researches conducted and reports issued in connection with land conflicts in Mvomero District. Studies by Myenzi (2006), Kushoka (2011), Lyatuu and Urassa (2014); and reports by MVIWATA (2012) and LHRC (2013) were mainly focused on conflicts, implication of large scale investment, food security as well as social insecurity. However, assessments on the relationships between land tenure systems and prevailing land conflicts in Mvomero District were less articulated in previous studies and were not the central focus of the studies. Therefore, the study on which this dissertation is

based sought to assess the relationship between land tenure systems and the prevailing land conflicts among smallholder communities in Mvomero District.

1.3 Research Justification

The results from this study will provide input in the academic arena and in national development. Conflicts are an obstacle to the development of any society. Therefore, the findings from the study will be instrumental in formulating appropriate guidelines for immediate and permanent solutions to frequent land conflicts among smallholder communities in Mvomero District. Also the findings will be applicable to other areas in Tanzania that are facing similar problems. In addition, the findings will be useful to academicians to supplement the existing body of literature as well as being used as reference for further knowledge.

Furthermore, the findings of the study will be useful in the implementation of Tanzania Development Vision 2025 which states that peace, stability, national unity and good governance on natural resources (including land) are significant elements for sustainable development in the country (URT, 2000).

1.4 Research Objectives

1.4.1 General objective

To assess the relationship between land tenure systems and prevailing land conflicts in smallholder communities in Mvomero District.

1.4.2 Specific objectives

- i. To identify land tenure systems in the study area.
- ii. To determine the extent of community awareness on land tenure systems.

- iii. To assess factors influencing land conflicts in the study area.
- iv. To assess efforts taken to mitigate land conflicts in the study area.

1.5 Research Questions

- i. What are the major land tenure systems used by smallholder communities?
- ii. To what extent is the community aware of land tenure systems in the study area?
- iii. What are the major causes of land conflicts in Mvomero District?
- iv. What measures are taken to resolve and manage land conflicts to smallholder communities?

1.6 Null Hypothesis

Land tenure systems do not have significant impact on occurrence of conflicts.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Land Tenure Systems in Tanzania

The concept of 'tenure' is a social construct that defines the relationships between individuals and groups of individuals by which rights and obligations are defined with respect to control and use of land (ECA, 2009). According to FAO (2010) land tenure is the way land is held or owned by individuals or groups. A number of individuals can hold different tenure claims and rights to the same land. These claims may be formal, informal, customary or religious, and can include leasehold, freehold, use rights and private ownership.

For Tanzania, land tenure system has passed through different historical milestones which form the basis for the analysis of the land tenure regime in general and tenure relations for land owners and users in particular in the past eight decades (Myenzi, 2005). Before colonialism, land was largely customarily owned, controlled and disposed off according to the traditions and customs of a particular clan/tribe (LUP, 1999). During colonialism, both German and British colonial masters had an upper hand in changing this arrangement and they introduced the Imperial Decree of November 1895 (Germans) and the Land Ordinance 1923 (British) to suite their territorial occupation motives (Shivji and Kapinga, 1998). According to these laws and decrees, land was officially turned into a private property of the colonial master.

After independence in 1961, the new government of Tanganyika embarked on some broad based socio-economic and political reforms but retained almost the entire colonial land regime characteristics. Very minor changes were made to replace the word Governor with

President of Tanganyika while the overall powers over land ownership and administration continued to be vested on the executive. Land continued to be “public” vested in the President as custodian on behalf of all the citizens (Myenzi, 2005), and classified in three categories, that is to say, general land, village land and reserved land (URT, 1999a).

2.2 Land Distribution and Use in Tanzania Mainland

According National Bureau of Statistics (URT, 2011), the total area of Tanzania is 939701 km² of which 58 100 km² is water representing a part of Lakes Victoria, Tanganyika, Nyasa and several other smaller lakes. Out of that total area, 15.1 million hectares is arable land whereby average cultivated land per year is 5.1 million hectares (URT, 2011). A large part of Tanzania Mainland is dry with about 60 percent of land classified as dry lands, threatened by desertification. Early estimates from 1990s indicated that around 300 to 400 thousand hectares are returning to semi-arid each year. The high growth rate of both human and animal population has been identified as the leading contributing factor. This has resulted in soil erosion, deforestation, deterioration of the natural resources base and land conflicts (URT, 2013).

Moreover, it has been estimated that about 75 percent of the total land area in Tanzania is uninhabited. However, this includes the national parks, game and forest reserves (23% of the total land area), mountains, lakes and rivers (LP, 1995), or areas that are hard to manage due to difficult terrain, tsetse flies and unreliable rainfall (URT, 2011).

2.3 Types of Land Tenure Systems in Tanzania

One of the basic tenets of land legislation is that it protects the land rights of holders as it ensures that the ‘rule of law’ is applied when land rights are extinguished or land is confiscated by the State. This means that, such land has to be appropriated through consent

and that appropriate compensation is paid to the former landowner (ECA, 2009). The Land Act (1999a) provides the legal framework for two of the three categories, namely General Land and Reserved Land. Reserved Land denotes all land set aside for special purposes, including forest reserves, game parks, game reserves, land reserved for public utilities and highways, hazardous land and land designated under the Town and Country Planning Ordinance. General land includes woodlands, rangelands, urban and peri-urban areas that are not reserved for public use. Under the Land Act, general land includes unoccupied or unused village land. The Land Act governs reserved land and general land (URT, 1999a).

Village land includes registered village land, land demarcated and agreed to as village land by relevant village councils, and land (other than reserved land) that villages have been occupying and using as village land for twelve or more years (including pastoral uses) under customary law (URT, 1999b). Regardless of those three classified categories of land, all land in Tanzania is considered public land, which the President holds as trustee for the people (URT, 1999a). According to Shivji (1999), powers of allocating land on general land and even reserved lands (for example, granting rights of occupancy) are given to the Commissioner for lands. No local government authority has any powers of allocating land unless the same is delegated to it by the Commissioner. The Commissioner allocates land with the advice of the Land Allocations Committee (URT, 1999a).

2.3.1 Customary right of occupancy

In Tanzania customary land rights have been deeply rooted in the rural communities for a long time (Shivji and Kapinga, 1998). The customary law is unwritten and largely depends on tell-tales from elders (Komu, 2003), thus land tenure is often grounded in the principle of "first right"; members of the indigenous ethnic group who first settled in a particular area. Customary rights of occupancy can be held individually or jointly, are perpetual and

heritable, and may be transferred within the village or to outsiders with permission of the village council (URT, 1999b). Village land allocations can include rights to grazing land, which are generally shared. The village land which is largely owned through customary law is also sub-divided into three categories, namely; communal land, occupied land and vacant land (URT, 1999b). Full customary rights exist whether or not written certificates are being issued. Certificates of Customary Right of Occupancy (CCROs) are issued in rural areas by village councils. The Customary Right of Occupancy is different from Granted Right of Occupancy, but according to the law the two are given equal effect and status (URT, 1999a).

2.3.2 Statutory right of occupancy

Statutory or Granted rights of occupancy are available for general and reserved land, subject to any statutory restrictions and the terms of the grant (URT, 1999a). Grants are available for periods of 33, 66 up to 99 years and can be made in periodic grants of fixed terms. Granted land must be surveyed and registered under the Land Registration Ordinance and is subject to annual rent. Holders of registered granted rights of occupancy may lease that right of occupancy or part of it to any person for a definite or indefinite period, provided that the maximum term must be at least ten days less than the term of the granted right of occupancy. Leases shall be in writing and registered (URT, 1999a).

A residential license is a derivative right granted by the state (or its agent) on general or reserved land. Residential licenses may be granted for urban and peri-urban non-hazardous land, including land reserved for public utilities and for development. Residents of urban and peri-urban areas who had occupied their land for at least three years at the time the Land Act was enacted had the right to receive a residential license from the relevant

municipality, provided they applied within six years of the enactment of the Land Act (URT, 1999a).

2.4 Land Conflicts

According to USAID (2007), land conflict is the situation where the interests of one individual or group are in opposition to those of another individual or group. Conflicts that arise over use or ownership of resources may be related to differences in boundaries, land use, ethnicities, economic status, or levels of government, and they may or may not lead to violence (Cotula, 2011). FAO (2010) defines conflict over land as a disagreement over land rights, boundaries or uses and that land dispute occurs where specific individual or collective interests relating to land are in conflict.

A fact finding report by TALA (2012) indicates that about five land conflicts are reported daily by media houses involving villagers and investors or farmers and pastoralists. In associating land conflicts and smallholder community in rural areas in Tanzania, USAID (2011) and Msuya (2013) observed the situation as a reflection of competition for natural resources caused by promotion of commercial farming which finally contributes to tenure insecurity.

2.5 Types of Land Conflicts

Wehrmann (2006) classifies types of land conflicts according to the social level at which a conflict takes place: inner-personal, interpersonal, inner-societal and inter-societal. While the inner-personal is not relevant to land conflicts, interpersonal can be reflected on boundary conflicts between individual neighbours or between tribes or villages. Land conflicts among land users which mainly involved smallholder community among

themselves or between them against large scale farmers or investors are massively becoming a song of the day in Tanzania (LHRC, 2013).

2.5.1 Conflict among smallholder community

In rural areas reported cases of conflicts between farmers and livestock keepers are on the increase due to decreasing natural resources (URT, 2011) a state which forced those communities to enter into conflict fighting over common resources like land, water and pastures (HAKI-ARDHI, 2011).

Violent clashes between farming and pastoral communities over land use have been common for decades in Central and East Africa, but their increasing frequency and persistence have turned regions into areas of low-intensity conflict (IRIN, 2012b). The spontaneous clashes between crop farmers and pastoralists in Kilosa (Baha *et al.*, 2008), and long standing conflicts in Loliondo area between Sonjo farming communities and Maasai pastoralists starting in 2000 (HAKI-ARDHI, 2010) are among of the examples of land disputes which has left serious scars among smallholder communities in Tanzania.

2.5.2 Conflict between smallholders versus large scale producers

According to ESRF (2011), the government of Tanzania has sometimes attempted economic growth measures without due consideration to the consequences with regard to the importance and value of land to its citizens. ESRF (2011) reiterates that, there is a tendency to attract investors at any cost so long as there is growth in the Foreign Direct Investment (FDI) to invest on conservation, tourism, mining, carbon trading, bio-fuels and food security, that all depending on large tracts of land.

With regard to the implication on investment motives on land, Action-Aid (2011) found that the reality on the ground in many areas is that the types of investments defined as land grabs are fundamentally failing to meet these economic targets and are in fact increasing poverty among smallholder communities, partly because of corruption.

2.5.3 Conflict between smallholder users versus government agencies

According to Shivji and Kapinga (1998), the land conflicts between the community and the state are historical in case of Tanzania. This is due to the fact that since the independence time there has been the use of force from the government demanding the villagers and other land users to leave land they own for other uses mostly termed as public demand such economic growth.

Appropriation of land that has been done by the government and its agencies had resulting to decrease of land used for production (Action-Aid, 2011), displacement of villagers from their area of origin (ESRF, 2011) as well as triggering conflicts among smallholder producers (TALA, 2012) in struggling to fight for survival. The events of establishment and redistribution of land to the public corporations such as National Agricultural and Food Corporation (NAFCO) and National Ranching Company (NARCO) as well as National parks, Game Reserved Areas went together with violation of villagers' rights on land which led to the occurrence of multiple conflicts over land among the villagers and the reserved areas (Shivji and Kapinga, 1998).

2.5.4 Boundary conflicts between villages

Conflicts that arise over use or ownership of land may be related to differences in boundaries (USAID, 2007). Wehrmann (2008) and Hoza (2009) reiterated that boundary conflicts can appear between administrative units such as villages, communes,

municipalities and districts and that, are mainly triggered by competition over scarce resources which available in the competed area. Bahaet *al.*(2008) and Kisoza (2014) reveal that,if the process of establishing a new village will lack the transparency in demarcating boundaries and its neighbours, it is more likely for land disputes to occur in future.

2.6 Factors Contributing Land Conflicts

Concerning the factors that have been contributed to land conflicts; it was well-known that people have fought over land since the beginning of recorded history (USAID, 2004and UN-HABITAT, 2012). There is general consensus that factors such as; population growth and environmental stresses have exacerbated the perception of land as a declining resource, tightening the connection between land and violent conflict (OXFAM, 2012 and Burnett, 2012). Therefore, in discussing factors for land conflicts it is important to acknowledge thatland is a very strategic socio-economic asset (USAID, 2004), particularly in poor smallholder communities where wealth and survival are measured by control of, and access to land. By considering the importance of land among smallholder communities, this section aims to discuss socio-economic factors that have been played a significant role to incidences of land conflict occurrence.

2.6.1 Competition for resources

UNEP (2012) stated the concept of “resourcescarcity” as situation where the supply ofrenewable resources such as water, forests, rangelandsand croplands – is not sufficient to meet the demand. In many cases, the competition over resources reshapes social tensions around landed resources and water access (Peters 2004). Benjaminsenet *al.* (2012) and El-hadary and Samat (2011) have described factors such as global climate change, large scale investment on land as well as rapid growth of population as causes

leading to scarcity of resources and drivers fuelling land conflicts among rural communities in many countries in Sub-Saharan Africa. Resources such as land and water are indeed basic and needed to enable communities to sustain livelihoods especially in rural areas (Msuya, 2013).

Agricultural commercialization emphasized in many developing countries (UNEP, 2012) also contributes to endless land conflicts especially when the arable land used by smallholder produces is taken and privatized to large scale producers. In that context of scramble for resources which mainly affect smallholder community frequent conflicts among land users is inevitable (Yamano and Deininger, 2005).

2.6.2 Inadequate infrastructures in rural areas

Poor or absolute lack of livestock support services such as water supplies, dips and veterinary services as well as poor provision of social services such as schools and dispensaries located in pastoralists areas is among the major factor contributes to land conflicts among rural communities (UN-HABITAT, 2012). This becomes obvious due to the fact that congestion in areas with adequate infrastructure and social services mainly leads to the emergence of conflicts considering that most of the small producers rely much on available resources.

The absence of adequate supporting infrastructure and social services (ECA, 2005) as well as different production such as agriculture and livestock keeping activities facilitate the emergence of conflicts where each community want to control the use existing infrastructure and services efficiently (Msuya, 2013). Regarding poor infrastructures Benjaminsenet *al.* (2012) provide a vivid example of Kilosa District where out of 164 villages in the district, none of these health centres are in the eight pastoral

villages. In addition, while there are 1.26 primary schools per farming village, there are only 0.75 primary schools per pastoral village. The numbers for secondary schools are 0.24 and 0.13 respectively.

2.6.3 Lack of good governance on land

According to FAO (2010), land governance means “the process by which decisions are made regarding the access to and use of land, the manner in which those decisions are implemented and the way that conflicting interests in land are reconciled”. Brankov and Tanjevic (2013), clarified land governance is about the policies, processes and institutions by which land, property and natural resources are managed. With regard to land rights, Haki-Ardhi (2009) entails the good governance as creation, implementation, enforcement of fair laws, and the effective and unbiased adjudication of disputes.

Brown *et al.* (2009); Murtaf (2013); Wily (2012); and Moore (2010), reveal that land conflict is a prevailing phenomenon fuelled by bad governance at all levels. In many African countries, formal institutions for land administration were often simply laid on traditional structures without a clear delineation of responsibilities and competencies, implying that they lack both; outreach and social legitimacy (Yamano and Deininger, 2005). UNEP (2012) shows that, lack of state capacity to extend its presence and authority into rural areas in order to enforce laws and resolve disputes is often a key cause of poor governance of natural resources including land. It further stated that challenges to how the state allocates land rights and the perceived illegitimacy of many of these allocations generates conflicts on the ground.

2.6.4 Contradiction of land laws and policies

Disagreements, contradictions or overlapping rights regarding laws and policies related to land as well as uncertainty over resource rights are often at the heart of conflict (UNEP, 2012). According to FAO (2012), in many countries in Sub-Saharan Africa, policies and laws fail to balance between the business motives on land and community livelihoods interests. Mohammed (2014) argues that, out-dated policies and laws that should provide guidelines for ownership of resources has been a major source of conflict among communities of small producers. In some cases, policies clarify the rules and the rights clearly while in other cases, statutory and customary laws contradict one another (Zwan, 2011).

To justify the truth, Matee and Shem (2006) found and revealed the impacts of existing and emerging policies and laws with a bearing on pastoralism in Tanzania whereby new Livestock Policy, 2005 fails to acknowledge the genetic potential of indigenous livestock breeds and landraces, or the wisdom of extensive grazing regimes in dry land areas. Regarding that; efforts to secure land and resource tenure for pastoralists are generally very limited, and crop growers and private investors continue to appropriate large areas of pastoralist land, often with direct or indirect support from government and development agents thus contribute to marginalization to pastoral community (Shem, 2010).

2.6.5 Ethnic differences

Thomson (2000) described an ethnic group as “a community of people who have the conviction that they have a common identity and common fate based on their history, origin, tradition, kinship ties, cultural uniqueness, and a common language”. He reiterates by explaining ethnicity as the condition of belonging to an ethnic group, the sense of ethnic identity is felt by members of an ethnic community. Ethnic differences among

smallholder communities is one of the major cause of land disputes in the world and Africa in particular (Wily, 2012), where by most of civil wars in countries such as Sudan, Congo (DRC), and previous social unrest in countries such as Kenya, Liberia, Rwanda and Sierra Leone were mainly caused by ethnicity differences with related to scramble for natural resources land in particular (UN-HABITAT, 2012).

However, Horowitz (1985) and Azar (1990) refer to the concept of ethnic conflict as a myth and argue that the root causes of ethnic conflicts do not involve ethnicity alone but also other related social factors such as economic and political. They further emphasize that the concept of ethnic conflict is misleading because it leads to an essentialist conclusion that certain groups are doomed to fight each other when in fact the cause of the conflict could be politically motivated. In this respect, Rothschild (1997) insisted that we will conceive the ethnicisation of land conflicts not as a causal factor but as an expression of tensions over land resource circulating along power and social networks representing conflictive interests.

2.6.6 Poor application of land use plans

In many rural areas in Tanzania, rural land tenure is considered at least somewhat insecure. Although the Land Act No. 4 and Village Land Act No. 5, 1999 requires every village to have in place the land use plan, many villages have not been able to implement this due to various obstacles one being prevalence of the boundary conflicts between the villages (Shem, 2010). This contributes to continued interference of one group land by the other without knowledge of either side or sometimes deliberately by group which is knowledgeable (HAKI-ARDHI, 2009). Study by ESRF (2011) found that, insecure tenure and weaknesses in land administration are the main reasons behind most land conflicts and

disputes that Tanzania are blamed for, among others, the marginal production in crop and livestock agriculture.

2.6.7 Large-scale land acquisitions

In order to facilitate implementation of investment policy, in some area a change in land use tenure transformation is emerging: land is re-allocated to those able to make capital investment (rich farmers and companies) to their advantage and at the expense of poor farmers (Mahonge, 2012). As described by HAKI-ARDHI (2009a), the main victims in this process have been the smallholder community including peasants, pastoralists, artisan miners, hunters and gatherers used to get their daily bread and other social services from the land they owned.

According to Cotula (2011), large-scale land acquisitions or “land grabs” pose serious threats to the human rights of host communities by denying land users access to vital natural resources, undermine local livelihoods, jeopardize food security, and exacerbate tenure insecurity. Cotula (2009) also stressed that the poor smallholder producers have been deprived from their access to land, and increasing concentration of resources has been placed into the hands of minority individuals. LHRC (2013) warned that, in the situation where transformation of tenure hindering community interest to get access to available natural resources in favour of a few powerful private actors, conflicts over land is inevitable.

2.6.8 Corruption

The corruption is both, a major cause and a result of poverty around the world (Brankov and Tanjevic, 2013). Although there is not a universally agreed definition of corruption, Transparent International (TI) defined corruption as “the abuse of entrusted power for

private gain” (TI, 2011). With regard to categories, it can be divided into two groups, small-scale and big-scale corruption. Small-scale corruption includes administrative corruption, while big-scale means political corruption (Brankov and Tanjevic, 2013). Corruption undermines transparency and accountability during the allocation of lands as well as enabling the wrong decision to be made about who deserves to use which land, and for what purpose (MacInnes, 2012). It weakens the rule of law, democracy and human rights, undermines good governance, fairness and social justice, distorts competition, hinders economic development and endangers the stability of democratic institutions and the moral foundations of society (Brankov and Tanjevic, 2013). According to TI (2011), corruption in land is often the cause or an offspring of the breakdown of a country’s overall governance.

In associating corruption and land conflicts, Msuya (2013) and Benjamin *et al.* (2009) argue that corruption, whether administrative or political, does not favour the establishment of long-term national or local land strategies and instead, it undermines people’s trust in authorities. Corruption can involve various actors, ranging from public officials and local leaders to outside investors (TI, 2011). It can vary from small-scale bribes and fraud (e.g. administrative corruption), to high-level abuse of government power and political positions (e.g. political corruption). Smallholder community is likely affected by corruption in land sector, that leads to lack of trust in government authorities hence resulted in actors trying to solve problems through violence (Benjamin *et al.*, 2009).

2.6.9 Population growth

According to the neo-Malthusian conflict scenario, population pressure on natural renewable resources is more likely leading community to the conflict (Urdal, 2008). Natural population growth can result in an increase in the demand for land and consequently of

land prices (Wehrmann, 2008). Addition on that, demographic change in rural areas is one of the factors contributes to rise of conflicts over resources in Sub-Saharan Africa (Green, 2013). Scramble for land played a major role in eruption of civil wars in Sudan, Democratic Republic of Congo, Liberia, and in other parts of Africa (El-Hadary and Samat, 2011). High population growth rate as well as repeated droughts, ecological stresses and climatic changes are major drivers influence conflict over land (UN, 2005).

This argument supported Kahl's (2002) idea argued that high rate of population growth has contributed to increased pressure on land, increased demand for food, water, arable land, fuel wood, and other essential materials from the natural resource pool. Conflicts in Kenya and Rwanda are claimed to be examples of the latter (Kahl, 2002). However, Raleigh and Urdal (2007) stressed that these so-called "underlying factors" are only factors of *change* and not factors of *conflict*.

2.6.10 Little attention given to land conflicts involving smallholder communities

Long pending conflicts without solved, delay to resolve conflicts on time and bias in decision-making (Yamano and Deininger, 2005; ESRF, 2011 and PAICODEO, 2013), are among of the factors contributing to the communities to choose using conflicts to get their right. Issues of land rights and tenure security especially for land used by smallholder community have not been given due consideration as expected (ESRF, 2011). People, especially those in a position to improve the situation, often ignore land conflicts until they cannot be controlled any longer, as tension and violence rise to a level which threatens major parts of society (Wehrmann, 2008).

However, in some cases, the responsible authorities from local to national level may be reluctant to acknowledge either the existence of land grievances or their potential

to escalate and become violent conflicts (UNEP, 2012). In other cases, political motives contribute to hinder provision of timely solution to land conflicts where those in position wanting to use the existing conflicts for political gain as well as fear that such attention may actually inflame tensions and contribute to more overt conflict (PAICODEO, 2013).

2.6.11 Weak conflict management mechanisms

Weak conflict management mechanisms contribute to the un-ending land conflict between the farm herders and crop producers (Myenzi, 2005). According to UNEP (2012), conflict becomes problematic when societal mechanisms and institutions for managing and resolving conflict break down, giving way to violence. With regard to Tanzania land management systems; there is the challenge of efficiency of land disputes settlements organs from the village level to the district level such as Village Land Council, Ward Tribunal, and District Land and Housing Tribunal (HAKI-ARDHI, 2009a).

Prominent institutions in the land conflict context include: national and local government; the judiciary; land administration institutions (statutory, customary and religious); traditional and religious authorities; as well as the mechanisms for dispute resolution within society (UNEP, 2012). Chachage and Shivji (2001) argue that from the 1990s land disputes have become common in Tanzania due to incapacity of land management mechanisms. Moreover, members of these organs (at local level) do not have clear knowledge of the land laws and that of land disputes settlement, something which forces them to use their own experience in solving land conflicts placed before them (HAKI-ARDHI, 2009a).

2.6.12 Lack of land conflict early warning systems

A land early warning system is a tool used in order to identify the causes of conflict, predict the outbreak of conflict, and perhaps most importantly, mitigate that conflict (UNEP, 2012). The system is generally used to produce a variety of information including: baseline studies, risk assessments and trend analysis as well as plays an important role as part of a more systematic approach to land grievances and conflicts (Austin, 2004). Warnings are issued to decision-makers and society when negative trends are detected in order to forestall violent conflict or the spreading and intensification of conflict (UNEP, 2012). Once a potential cause of conflict has been identified, the extent of possible land conflicts and the scope of their social, economic, ecological and political consequences should be thoroughly calculated, and immediately communicated to decision-makers and responsible land management experts at both the central and local level (Eschborn, 2008).

2.7 Consequences of Land Conflicts

2.7.1 Loss of property

Land conflicts have negative effects on individual households as well as on the nation's economy. During the conflict, houses are burnt, crops destroyed and cattle raided as well as wastage of time and money in finding solutions to land conflicts (Mworia and Ndiku, 2012; HAKI-ARDHI, 2010). The chaos generated by conflicts may weaken the customary or local institutions managing and administering land rights (Cotula *et al.*, 2006), thereby generating widespread tenure insecurity, increase poverty as well as escalating security instability among communities. Benjamin *et al.* (2013), Msuya (2013) and TALA (2012) show that rural households experience small-scale land conflicts with relatives, neighbours, landlords, or government institutions and those small-scale conflicts may have significant impacts on their agricultural productivity.

2.7.2 Loss of life for human and livestock

Land conflicts can have disastrous effects on individuals as well as on groups and even to an entire nation (Wehrmann, 2008). Many conflicts that are perceived to be clashes between different communities resulted in loss of people's lives. Burja (2002) reported that most of inter-ethnic disputes and conflicts in many African countries were based on the question of land, control of fishing and hunting areas, and the ownership of other resources. As a result of clashes between parties, deaths of people and loss of livestock have occurred leaving behind communities that are antagonistic to one another (ESRF, 2011). In Tanzania, farmer-herder clashes resulted to death of farmers and pastoralists have been experienced. This manifested several times in Kilosa District in Morogoro region and Kilindi District in Tanga Region. A typical example of this is the sad events in Kilosa, which have attracted much public attention. On the 8th of December, 2000; 30 people were killed at Rudewa-Mbuyuni village in Kilosa District, Morogoro, during clashes between cultivators and livestock keepers (Odgaard, 2006).

2.7.3 Weak socio-economic and political stability

Frequent land conflicts among rural communities destabilizing the economic activities of the residents, hence reducing them into a poor community (Mworia and Ndiku, 2012). Land-related conflicts usually result in increased poverty due to interruption and even total stoppage of agricultural and other productive activities, thus leading to famine in respective areas (ESRF, 2011). Myenzi (2005) argues that, during land conflicts many people are escaping their areas of production due to fear and insecurity. This makes them stop engaging in agricultural production and livestock keeping, which leads to decline of food production and eventually occurrence of hunger.

Social and political stability suffers even more when land conflicts are accompanied by violence (Yamano and Deininger, 2005). Land conflicts affect different groups in different ways. Not only do they generally have a stronger impact on the livelihood of the poor than that of the rich, but they also impact differently on men and women, urban and rural populations, farmers and pastoralists (Wehrmann, 2008). Mworio and Ndiku (2012) present an example of Kenya whereby after post-election violence thousands of families in Nakuru have been internally displaced as a result of land conflicts for several years.

However, Galtung (2000) stresses that the effect of violent conflicts should not be seen in terms of the costs, casualties, displaced persons and material loss. Invisible effects like low violence thresholds, traumas, myths of trauma maybe important in the long run. He advises consequences like sadness, hatred, and addiction to revenge and victory should be explored as part of negative effects caused by land conflicts.

2.8 Land Conflicts Management

2.8.1 Improve land tenure security

For sustainable land use, Adams *et al.* (1999) emphasize the importance of ensured land tenure security for all land users, not only as a right but also to guarantee long term productivity and environmental protection. Tenure security provides confidence in the users to put land to good and productive use (ESRF, 2011). According to FAO (2012), the livelihoods of many, particularly the rural poor, are based on secure and equitable access to and control over land. Security of land tenure is seen as the first among the incentives to overcome disputes over resources and land in particular. The way that land tenure systems are applied influences how benefits, costs and risks are distributed (FAO, 2012).

National Land Policy (1995) revealed that, application of land use plan is integral part of mitigating land use conflicts among land users. That is to say, when land use plans are

available and used to direct allocation of lands especially for large scale investments in agriculture and resettlement of population, land disputes and conflicts will be highly avoided (FAO, 2012).

2.8.2 Improve good governance on land

Land governance can be called “good” when the process of decision-making over access to and use of lands as well as its enforcement and the reconciliation of conflicting interests are done in a fair and transparent way (Wehrmann, 2008). In order to advance governance and curb the land conflicts, it is also necessary to take political factors such as land laws, policies and regulations into account (Benjamin *et al.*, 2009).

In line with this, strong and robust institutions, mechanisms and procedures that enhance transparency and accountability should be at the core of land administration systems (FAO, 2010). Moreover, tackling corruption in the land sector is essentially linked to improving its governance (TI, 2011). According to FAO (2007), good land governance therefore requires the honest and serious application of land policies, transparency, fairness and participation of communities to meet the target of each member of the community to get the equal share of the available resources.

2.8.3 Increasing public awareness

Public awareness might be increased by supporting dialogue on land issues amongst the general population and civil society as a means to generate potential solutions that may support the negotiation process (UN-HABITAT, 2012). Regarding the role of stakeholders on land conflicts, UNEP (2012) emphasize the role of government and CSOs in developing public awareness campaigns, where disputes and tensions arise due to lack of public knowledge regarding existing laws and rights. Myenzi (2011) and Wehrmann (2006) suggest the importance of using different approaches to facilitate

public awareness on land matters such as public meetings, training to land committees' members as well as arts such as music and drama. Raising awareness through public traditions and religious institutions as well as media is also recommended as one of best approach to increase and strengthen public awareness.

2.8.4 Increase community participation on land administration

In building and strengthening the sense of ownership in administering land, community participation in decision making can be taken as fundamental right whose objective is to initiate mobilization for collective action, empowerment and institution creation (WB, 2014). Participation provides avenues for sharing of information and learning (ACCORD, 2010). According to Myenzi (2005), Mahonge (2012), and LHRC (2013) community participation can be achieved through community consultations on land administration at all levels in line with assurance of protection of their rights as well as bringing decision making closer to citizens to improve service delivery and good governance.

2.8.5 Improve capacity of land resolution machineries

According to IFAD (2014) and Emanuel and Ndimbwa (2013), the root cause of conflict over land is people's inability to develop effective institutional frameworks for conflict resolution and for efficient and sustainable land use. Enhancing capacity of land-dispute resolution institutions at all levels, including traditional authorities, local and national can provide effective, efficient, timely and non-violent ways to address and resolve land disputes (FAO, 2012). For effective and sustainable resolutions on land conflicts Yang and Zhu (2013) argue the importance of assessing and strengthening the capacity of dispute resolution institutions (statutory and customary) to address land-related issues at both the household and community level respectively.

2.8.6 Combating corruption

Deal with corruption in the land sector is essentially linked to improving its governance (TI, 2011). In order to combat corruption on land allocation, MacInnes (2012) suggests the importance of governments to ensure that land administration and management, especially processes for acquiring and allocating large areas of land to commercial investors are explicitly prioritized in these broader anti-corruption measures, and that progress towards their implementation is publicly reported.

Furthermore, transparent, accessible and accountable systems of land governance, whether statutory or customary, can create a basis for corruption-free land dealings (TI, 2011). Brankov and Tanjevic (2013) show the significance of national governments to take steps to build transparent, effective and accountable land tenure systems as well as collaborate with local and global civil society organizations in raising awareness to ensure that the land tenure rights of people are respected, protected and fulfilled. Furthermore, TI (2011) stresses that respect for these systems depends on strong and effective oversight institutions such as parliamentary committees, anti-corruption commissions and law enforcement bodies as well as political-will as catalyst in fighting corruption.

2.8.7 Review and harmonize land related policies

For combating land conflicts and improving good governance on land, the revision of land policies is one important solution particularly with regard to the legal and administrative frameworks (FAO, 2012). Msuya (2013) proposes that, despite all regulatory efforts, however, ranging from the National land policy of 1995; the Agriculture and Livestock Policy of 1997; the Village Land Act No. 5 of 1999; the Land Disputes Act No. 2 of 2002; the National Livestock Policy of 2006; the National Land Use Plan Act of 2007 and the Grazing Land and Animal Feed Act No. 13 of 2010, the problem is still there and

perhaps not less than before. It is obvious that there is still a lot to be accomplished or consolidated based on those guidelines and regulations.

With regard to the harmonization of land policies, Msuya (2013) and Brown *et al.* (2009) agreed that there is a contradictory challenge while it is possible for statutory and customary laws to conflict with one another, because two different actors can legally claim rights to the same piece of land where one may hold statutory rights and the other may hold customary rights. ESRF (2013) proposed that policies should also provide for provision of civic education aimed at increasing awareness on land information management in order to make people especially in rural areas aware of their rights on land.

2.8.8 Provision of conflict early warning systems

In searching a sustainable solution to land conflicts, there is need of establishing Land Early Warning System. Land early warning system provides essential information to set priorities for mitigation and prevention strategies (Perry, 2013). Once a potential cause of conflict has been identified, the extent of possible land conflicts and the scope of their social, economic, ecological and political consequences should be roughly calculated, and immediately communicated to decision-makers and responsible land management experts at both the central and local level (Wehrmann, 2008). A systematic approach to land grievances and conflicts can contribute to the following results: enhanced attention to immediate disputes as well as the underlying structural causes of conflict; improved coordination amongst diverse actors engaged in dispute resolution such as traditional leaders, local governments, courts, and security forces (UNEP, 2012).

In addition to that, practitioners must be able to recognize the warning signs and determine effective preventive measures once potential conflict hotspots are identified (UNEP,

2012). The provision of timely early-warning information for conflict caused by competition of resources can help the responsible authorities as well as community take preventative measures and strategies accordingly, thus increase possibility of small disputes brought to a conclusion before they escalate into more serious conflicts (Austin, 2004).

2.8.9 Build and strengthen the partnership with stakeholders

Increase opportunities to resolve land disputes, relying not only on courts, which may be disabled, but on traditional authorities and NGOs through use of mediation and/or arbitration (USAID, 2013). Important institutions in a conflict context include: national and local government; the judiciary; land administration institutions (statutory, customary and religious); traditional and religious authorities; as well as the mechanisms for dispute resolution within society (UNEP, 2012).

According to Salami *et al.* (2010), involvement of various stakeholders in curbing land conflicts is important where traditional and statutory institutions prove inadequate, informal institutions may emerge to facilitate resolution of land-related disputes. Therefore, government and CSOs should have collaborated in providing education to the citizens on the various laws, policies and regulations so that they will use those guidelines wisely. In this case the government must recognize the potentiality of the CSOs in empowering the local community to understand their rights and responsibilities as the citizens of Tanzania (HAKI-ARDHI, 2009).

2.9 The Link between Land Tenure Systems and Conflicts over Land

Land and conflict are often inextricably linked (Cotula, 2006). Where there is conflict, land and natural resources issues are often found among the root causes or as a major contributing

factors. UNEP (2012) report highlighted the fact that natural resources and land in particular have played a role in at least 40% of all intra-state conflicts. Various reports and studies related to land held in Tanzania indicate that there is a close relationship between the prevailing land conflicts and the weakness of land tenure systems. For example studies by HAKI-ARDHI (2009a) and Action-Aid (2011), point out that past and current land conflicts in Tanzania are caused by the absence of a countrywide land use plan—a pillar for land tenure systems, which indicates clearly the demarcation and utilization of every piece of land in the country.

2.10 Theoretical Framework

This study applied the Marxist-based theory on social conflict which argues that individuals and groups within the society struggle to maximize their share of the limited resources that exist and are desired by humans (McDonald and Norman, 2002). These struggles can lead to conflicts over resources when each community opposes each other in an effort to attain scarce resources. Based on this theory, this study links with the theory in the sense that people in Mvomero District are having conflicts because the land which has been there over hundreds of years does not correspond with the rapid growth of population as well as the systems used to govern land use. As a result, smallholder communities are fighting for the scarce land in order to survive.

2.11 Conceptual Framework

According to FAO(2010),GIZ(2011) and UN-HABITAT(2012), land use plans that largely depend on existing land tenure systems indicate clearly the demarcation and utilization of every piece of land. HAKI-ARDHI (2009a and 2010) and Action-Aid (2011) studies indicated the prevalence of various weaknesses such as poor participation of communities in land administration, lack of awareness on legal matters pertaining to land rights and

weak institutions to deal with land issues as challenges based on land tenure systems hence influencing land conflicts.

Other literatures point out unclear regulations on land tenure management (IFAD, 2008), high level of land insecurity (USAID, 2011), black market on land deals, commoditization of land (Cooksey and Kelsal, 2011), lack of title deeds and investment in rural land (Lange, 2008) as well as rule of law to be overridden by politics as issues playing a major role in land conflicts among communities in Tanzania. The conceptual framework underlying this study (Fig. 1) indicates the interaction between factors under land tenure systems, demographic characteristics and their ability to influence land conflicts.

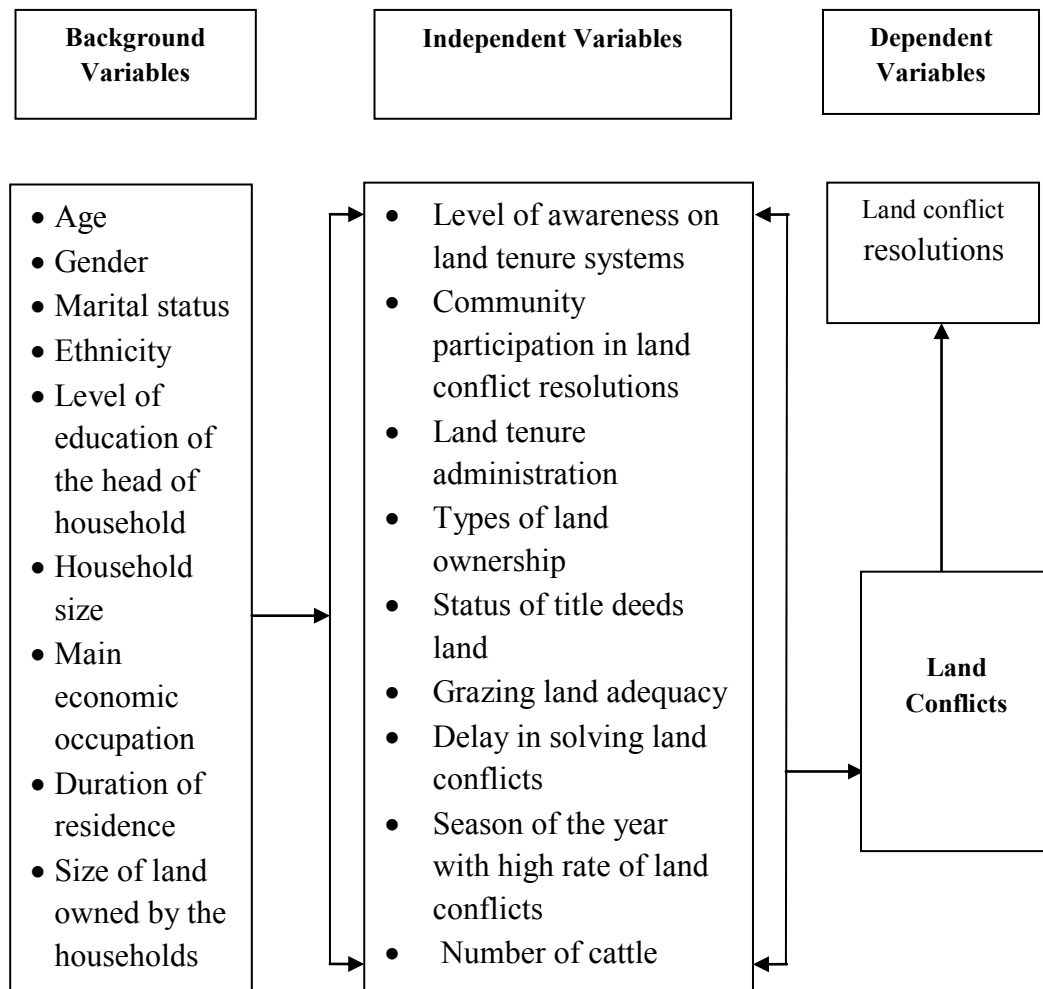


Figure 1: Conceptual Framework

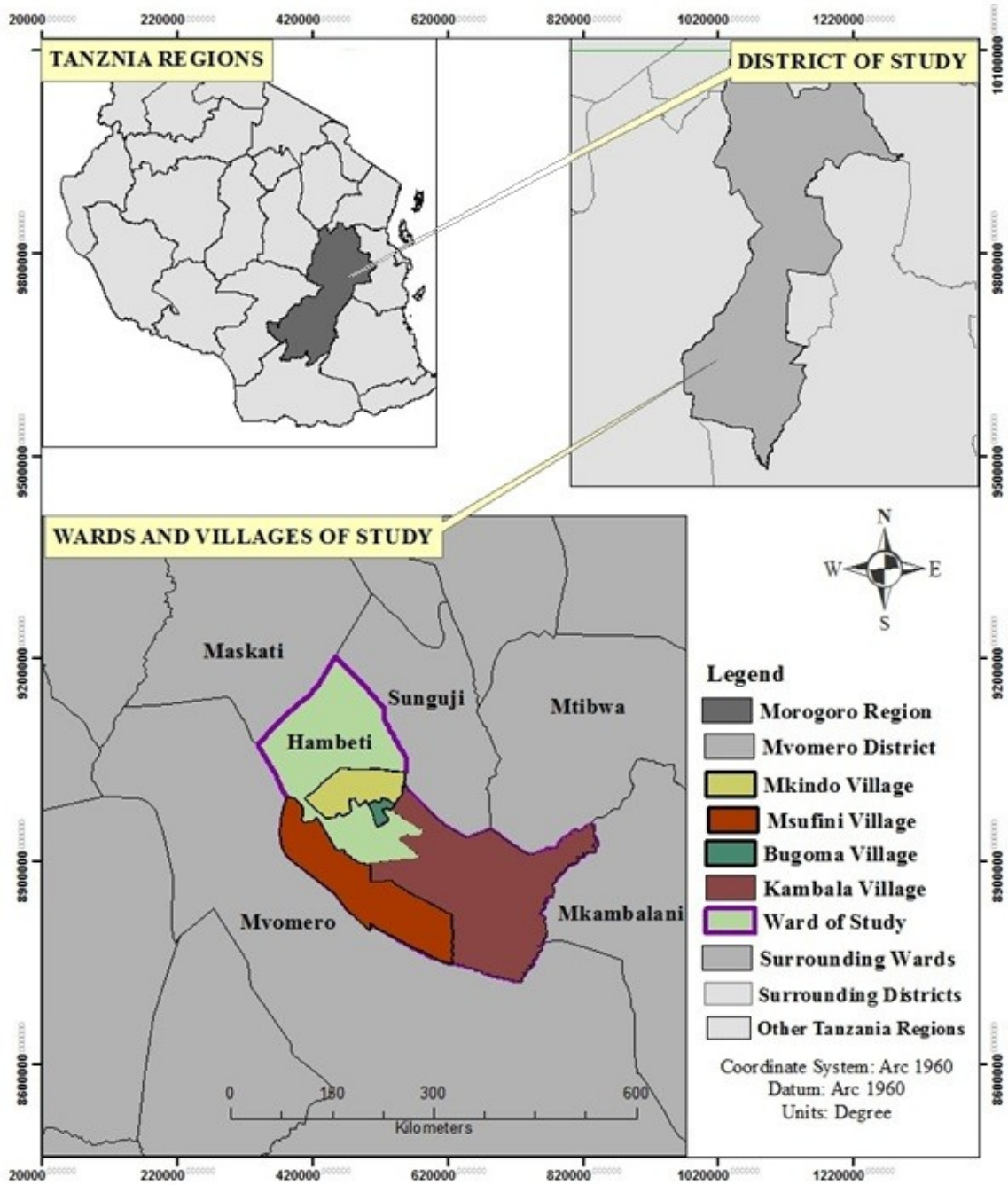
CHAPTER THREE

3.0 METHODOLOGY

3.1 Description of the Study Area

The study was carried out in Mvomero District, which is one among seven districts in Morogoro Region and occupies 7325 square kilometres. According to Tanzania Population Census of 2012, the total human population in Mvomero was 312 109, of which males were 154 843 and 157 266 were females. There were 58 314 households, with an average household size of 4.3 persons and an average population growth rate of 2.6% per year (URT, 2013). The primary economic activities include crop farming and, to a lesser extent, livestock rearing (Saghiret *al.*, 2011). Four villages (Fig. 2) namely Mkindo, Bungoma, Kambala and Misufini were involved in this study.

The villages are among the areas that have been facing major land conflicts among smallholder communities in Mvomero District (TALA, 2012). Respective villages were selected purposely to meet the aim of this study whereby Mkindo and Bungoma village are occupied by farmers, Kambala by pastoralists and Misufini consists both farmers and pastoralists. Pastoralists are characterized as those individuals who rely on livestock as their main activity whereas farmers are those who rely on crop production as their major economic activity.



Data Source: Tanzania Bureau Of Statistics

Figure 2: A map of the study area

3.2 Research Design

A cross-sectional research design was used. According to Casley *et al.* (1998), a cross-sectional design involves the collection of data at one point in time. In this type of research design, either the entire population or a subset thereof is selected, and from these individuals, data were collected to help answer research questions of interest (Olsen *et al.*, 2004). Furthermore, the design is quick, relatively cheap and effective using limited resources in terms of cash, transport and time.

3.3 Sampling

3.3.1 Sampling frame and sampling procedures

The sampling frame of this study was all households in the study area. The research employed different sampling techniques to capture enough information. Both, probability and non-probability sampling were applied in selecting respondents. Probability sampling was employed in selecting randomly households not affected by land conflicts. Non-probability sampling included purposive selection of households affected by land conflicts and key informants such as village leaders and district officials.

3.3.2 Sampling unit and sample size

The sampling unit was the household due to the fact that household sample survey is among the most flexible methods of data collection since almost any population-based subject can be investigated through household surveys (UN, 2005).

The sample size was determined using Cochran's sample size formula (Appendix 4). Based on the formula, a sample size needed was 400, but due to time and financial constraints, half of the sample size that is 200 (0.5×400) was employed. A total of 209 households were involved in this study and considered to be enough.

3.4 Data Collection Methods

3.4.1 Primary data

Primary data were collected from different sources employing a combination of methods including questionnaire survey, focus group discussions and key informants interviews. During the process, primary information on age, residential status, household size, education, occupation, land size and other land issues regarding the aim of the study were gathered. Qualitative data were: awareness on land tenure systems, types of land tenure systems existing in the study area, as well as reasons for land conflicts. Quantitative data about age, household size, duration of residence, size of land owned by household and other quantifiable data also were collected.

3.4.2 Secondary information

Secondary information was obtained through a review of relevant literature concerning the subject. Also, other important materials were obtained from published and unpublished documents, research papers and journals in libraries and from the Internet.

3.5 Data Analysis

Objective 1, 2 and 4 were analysed descriptively using frequencies and percentages. For objective 2 an index scale was constructed to measure the level of community awareness on land tenure systems with scores ranging from well aware= 3, moderately aware= 2 and not at all aware= 1.

Objective 3 was analysed using the binary logistic regression. The use of the regression was motivated by the fact that an incidence of land conflict is a binary response, i.e. "1" if an incidence occurs and "0" if it does not occur (Bishop, 2006). The model was also used because it is a powerful and a popular one in social sciences at predicting a dependent

variable (land conflict) on the basis of continuous and or categorical independent variables, determining the percent of variance in the dependent variable explained by the independent variables, gauging the impact of covariate control variables, and ranking the relative importance of independent variables (Kayunze, 2008). Therefore, binary logistic regression was the model of choice for testing the hypothesis of this study because the dependent variable (land conflicts) in the hypothesis was nominal dichotomous in terms of conflict to occur = 1 and conflict not occur = 0.

$$\text{Lg} (P/1-P) = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \dots + \beta_k x_n + \epsilon_i$$

Where P= chances of land conflicts to occur

1-P = chances of conflicts over land not to occur

$\beta_0, \beta_1, \beta_2, \dots, \beta_k$ = constant coefficient

ϵ_i = error term

X_1 to X_7 = independent variables entered in the model, which were:

X_1 = types of land ownership which = 1 if the respondents own the land communally and 0 if they own the land privately

X_2 = solving of conflict timely which = 0 if the answer was yes and 1 if the answer was no

X_3 = season whenland conflicts occur which = 0 if it was rain season and 1 if the was dry season

X_4 = community participation in conflict resolution which = 0 if the answer was no and 1 if the answer was yes

X_5 = number of cattle owned as measured by count

X_6 = grazing landadequacy which = 0 if the answer was inadequate and 1 if the answer was adequate

CHAPTER FOUR

4.0 RESULTS AND DISCUSSIONS

4.1 Demographic and Socio-economic Characteristics of the Respondents

The socio-demographic characteristics of the households involved in the study are sex, age, household size, marital status, economic occupation, education background and ethnicity of the respondents.

4.1.1 Sex and age of the respondents

The results (Table 1) show that 44% of the respondents were aged between 18 and 40, followed by 38.3% of those whose ages ranged between 41 and 60 years, and 17.7% of respondents were above 61 years. This implies that the majority of the household heads in the study area were in their productive age group, which means that they could engage in land conflicts. According to URT (2013), the age group from 15 to 64 years is regarded as the productive age group.

In respect of the sex of respondents, 90.4% of the respondents were male while 9.6% were female. Of all women (20 out of 209 respondents) involved in the study, there was no one from the pastoral communities. The findings revealed that most of the households in the study area were male headed. These findings support previous studies by Sango (2003) and Hoza (2009) who found that it is likely that the majority of men are involved in land conflicts as opposite to women, because men are the heads of the households and are the ones who own land in the study area. The study also revealed that typical characteristics of most African societies whereby most households are male-headed while very few of the households are headed by females were relevant in the study area.

Table 1: Socio-demographic characteristics of the respondents (n=209)

Variable	Category	n	%
Sex	Male	189	71.0
	Female	20	29.0
Age	18-40	92	44.0
	41-60	80	38.3
	≥61	56	17.7
Marital status	Married	169	80.9
	Widow/ Widower	12	5.7
	Separated	9	4.3
	Single	19	9.1
Family size	1-4 family members	84	40.2
	5-8 family members	92	44.0
	9-12 family members	23	11.0
	≥13 family members	10	4.8
Education level	Non-formal education	54	25.8
	Primary education	138	66.0
	Secondary education	13	6.2
	College	1	0.5
Respondents' distribution`	Mkindo	55	26.3
	Bungoma	51	24.4
	Kambala	51	24.4
	Msufini	52	24.9
Main occupation	Farmers	171	81.8
	Pastoralists	38	18.2

4.1.2 Household size and economic occupation

The household sizes varied as shown in Table 1 which reveals that 39.7% of the heads of household had family members from 1 to 4 people, while 45.9% had the sizes from 5 to 8 people and 14.4% of householdshad more than nine family members. Based on the main economic occupations of the householdheads,the results indicated that almost 81.8% of the respondents were crop farmers while 18.2% were involved in pastoralism. According to Pacific (2012), the results indicate that having the highest percentage of respondents engaged in farming is attributed to strong land holding as well as low level of education which limits them from performing non-farming activities.

The study found that, the majority (72.7%) of the respondents had the ability to read and write. Levels of education among the respondents varied from non-formal to post-secondary level. The majority (66%) of the respondents had primary education. Respondents with secondary and college were 6.7%, followed by 25.8% with no formal education. This finding is similar to that by Emanuel and Ndimbwa (2013) who found that in many rural areas, still the level of education is very low and cannot enable smallholder communities in rural areas to be employed in the formal sectors hence hinder their development.

4.1.3 Ethnicity of the respondents

The distribution of respondents was considered so as to meet the purpose of the study; four focused villages were engaged, and care was taken to target affected persons from communities involved. A total of 209 respondents ageing from 19 to 81 years were selected and involved in the study. Regarding their villages, the results in Table 1 show that 26.3% of the respondents were from Mkindo; 24.9% from Msufini, then Bungoma 24.4%, and 24.4% from Kambala village. Twenty five ethnic groups were identified; the main five of them being: Zigua, Kaguru, Maasai, Pare and Luguru who constituted 75.6% of the respondents (Fig. 3). Other ethnic groups constitute 24.4% of the remaining population. Ethnicity of the respondents was assessed on the basis that communities in conflict prefer to identify themselves in terms of their nature in order to ensure the protection and safety of his/her life and property.

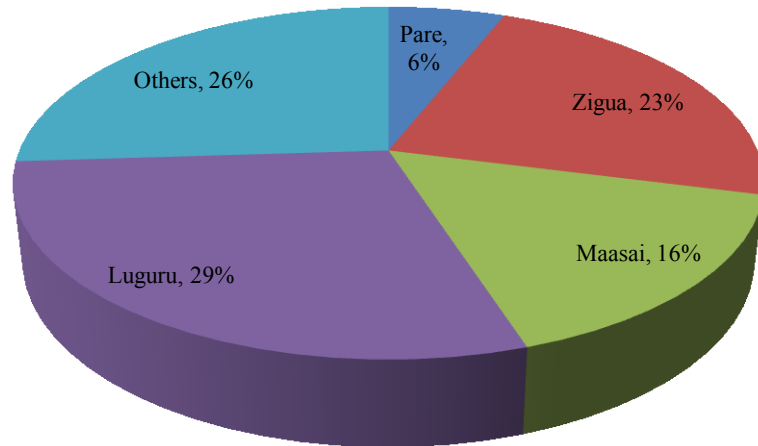


Figure 3: Ethnicity of the respondents

4.2 Land Tenure Systems and Land Distribution Patterns

Table 2 presents information on types of land ownership, security of tenure, acquisition and utilization of land in the study area. The discussion for each of the four aspects follows in sections 4.2.1, 4.2.2, 4.2.3 and 4.2.4.

Table 2: Types of tenure systems/ types of ownership, security of tenure acquisition and utilization of land (n=209)

Variable	Category	n	%
Types of land tenure systems	Private	171	81.8
	Communal	38	18.2
Institutions having legitimacy over land	Village government	189	90.4
	Customary authority	20	9.6
Means of acquisition	Purchased	60	28.7
	Inherited	90	43.1
	Allocated by the government	28	13.4
	Hired	27	12.9
	Pouted (clearing forest)	4	1.9
Land utilization	Cultivation	159	73.7
	Grazing	26	12.4
	Both (cultivation and grazing)	24	13.9

4.2.1 Types of land tenure systems/ land ownership

The results revealed that the entire land in the study area was falling under village land whereby customary right of occupancy was applied by land users. Under the customary right of occupancy, two types of land ownership were applied, mainly by users who were private and communal ownership. According to the results in Table 2 private ownership was predominant for 81.8%, followed by communal ownership at 18.2%. Private ownership was more practiced in farming communities while communal ownership was applied among pastoral communities. Furthermore, the study found that, almost all land in the study area was owned by smallholder producers: farmers and pastoralists. These results concur with studies those by Peters (2004) and El-Hadary (2010) who found that the customary systems did not exclude individual rights, and adding that in some places, the so-called 'customary' tenure would be more accurately seen as 'family property' because individuals and family units have defined rights to specific areas of land

4.2.2 Security of tenure

The study aimed to identify the authority that had the legitimacy in administering land and relied by the community for security of tenure of their land. Table 2 shows that 85.6% of the respondents did not have formal institutional certificate, but they were mainly depending on their village protection. Despite customary ownership providing a room for owners to have formal certificates, out of all the respondents it was only 14.4% who had Certificate of Customary Rights (CCROs). According to IFAD (2012), tenure security is important not only for agricultural production, but also it allows people to diversify their livelihoods by using their land as collateral, renting it out or selling it.

4.2.3 Means of acquiring land

For both; private and communal, the study findings show that inheritance was the major means of land acquisition. The results on Table 2 show that 43.1% of the respondents were those who had inherited their landholdings, 28.7% had purchased, 13.4% had acquired it through allocation by their village governments, while 12.9% were hiring it from private owners and 1.9% had cleared forests. These results confirm that many respondents had lived in the study area for a long time and that the land was previously owned by their parents or guardians.

4.2.4 The main uses of land in the study area

Regarding the main use of land in the study area, 73.7% of the respondents showed to use their land for cultivation, 12.4% were using for grazing while 13.9% were using for both; cultivation and grazing. These results imply that even among pastoral communities where ownership of the land was communal predominantly, to some extent the system provided an opportunity for individuals to decide on the main use of the land for production activities. That means that, in pastoral communities land was used for both cropping and livestock husbandry with similar land management. These results support those of a study by Tschopp *et al.* (2010) who argue that, in order to secure food availability and alleviate poverty, it is difficult for any society to depend on one mode of production, but other means for survival should be used.

4.3 The Extent of Community Awareness on Land Tenure Systems

An awareness index scale was constructed to measure the level of community awareness on land tenure systems with score ranging from not at all aware= 1, moderately aware= 2 and well aware= 3. The respondents were requested to indicate their level of awareness in

each question on the index scale and the scores obtained were used to determine the extent of community awareness of land tenure systems.

The findings in Table 3 regarding the overall extent of awareness among all respondents interviewed reveal that 46.4% were not aware while 34.0% were moderately aware and 19.6% were well aware. These results indicate the reasonable level of awareness of the community on the existence of land tenure systems and other important aspects related to land by 53.6%. Though the overall extent of awareness seemed to be slightly high, however the percentage of those who were not aware was also greater to the extent that it could affect daily land management as well as playing a significant role as a barrier to hinder conflict resolution and community participation in decision making processes on land governance.

It was found that, despite the majority (53.6%) of the respondents having claimed to be aware of land tenure systems, however most of them were not aware of fundamental issues concerning land regulations (National Land Policy 1995, Land Act 1999 and Village Land Act 1999) which are the bases for land tenure systems in Tanzania. This observation is supported by HAKI-ARDHI (2009), TALA (2012) and Murtah (2013) who observed that, despite Tanzania's Land Act No. 4 and Village Land Act No. 5, 1999 having been existing for more than a decade since their enactment and being one of Africa's most progressive decentralized land policies, the vast majority of Tanzanians are not aware of their contents. The reason given by the respondents (for being not aware of the respective laws) was that no formal authority has taken the responsibility for provision of legal education and instead they have been relying on CSOs such as LHRC and MVIWATA who rarely visit and sensitize them on land right awareness. In this kind of situation, there is a clear need

for civic education and legal support for communities and ordinary citizens so that they can exercise and defend their basic rights over land and other resources.

Table 3: Overall awareness of land tenure systems (n= 209)

Awareness level	n	%
Not at all aware	97	46.4
Moderately aware	71	34
Well aware	41	19.6

- **Awareness on different aspects of land tenure systems**

The previous section provided overall awareness on land tenure systems whereby it was shown that the community was in general aware of land tenure systems. However, this section provides level of awareness by specific aspect of land tenure system. The results are provided in Table 4.

Table 4: Awareness on land tenure systems (n= 209)

Variable	Not aware at all		Moderately aware		Well aware	
	n	%	n	%	n	%
Awareness on the existence of land tenure systems	83	39.7	81	38.8	45	21.5
Awareness on the application of land tenure systems in your area	112	53.6	58	27.8	39	18.7
Awareness on land title deeds for security of your land	70	33.5	78	37.3	61	29.2
Awareness on the differences between having and not having land title deeds	73	34.9	70	33.5	66	31.6
Awareness on the procedures to follow to get land title deeds	154	73.7	22	10.5	33	15.8
Awareness of having land title deeds for sustainable utilization of your land	83	39.7	77	36.8	49	23.4
Awareness on the significance of application of land tenure system in reducing land conflicts	91	43.5	59	28.2	59	28.2

The results in Table 4 demonstrate the level of the community awareness regarding seven statements that were used to measure the extent of awareness. In the same essence, the discussion of the results considers respondents who were moderately aware and those who were well aware as people having adequate knowledge on land matters.

The results in Table 4 show the extent of awareness based on the given seven statements used to measure the level of respondents' awareness. Out of the seven statements, the results show that the respondents were more aware on five aspects which were: existence of tenure systems (60.3%), importance of title deeds for security of land (66.5%), importance of having land title deeds (65.1%), awareness on title deeds for sustainable utilization of land (60.2%) and importance of the title deeds to reduce land conflicts (56.4%). The results reveal that the respondents were not aware on two aspects, which are application of title deeds in their area and procedures to follow in acquiring land title deeds at 53.6% and 73.7% respectively.

Based on the available results and explanation given by interviewed respondents and participants of FGDs, these results can be considered and discussed from two points of view. On one hand it seemed that having awareness is associated with occurrence of land disputes. Some respondents claimed that they had been involved in land disputes after being aware of their land rights. One of the respondents from a pastoral community in Kambala village insisted "*...previously it was easy for someone to violate our rights, but not nowadays. Currently, we are aware of our land right, that is why we are ready to use any means- even weapons to protect ourselves and our land*". The observation is similar with URT (1995) and FAO (2012) studies which found that in some cases land conflict was experienced after people being aware of the value of the land, thus they decided to demand for their rights, which sometimes resulted in violence.

On the other hand, low level of awareness regarding land related matters can also be associated with the possibility of someone to violate the right of other land users or involve in land conflicts. It was found that lack of awareness among communities on the land rights and its management procedures were among the factors which contributed to frequent land conflicts in the study area. This insufficient awareness on land matters was also linked with a tendency of disrespecting another's property rights, a state that was said to lead to eruption of frequent land disputes. Clarke (2009) cautioned that the lack of awareness and understanding regarding what to do about land issues can negatively affect the communities, especially if one does not know the limits of his rights and obligations on someone else's rights to land.

It was found that the extent of community awareness on land matters in the study area was still low. This requires more efforts from the government authorities in collaboration with other stakeholders such as CSOs, religious and traditional institutions to increase public awareness and resolve conflicts on land. According to URT (2013), increasing awareness on rights is a constitutional right to all citizens. Along with this, the public awareness is provided in line with Section 6 (1) (d) of the Commission for Human Rights and Good Governance Act, Chapter 391 which empowers CHRAGG to educate the public on the issues of human rights, good governance and administrative justice. Therefore, the priority should be given to remote areas where awareness on the land rights is minimal and there are a lot of land related problems that have caused violence.

4.4 Factors Influencing Land Conflicts

Factors influencing land conflicts were assessed using binary logistic regression. The use of binary logistic regression was justified because the dependent variable was a binary response (land conflict occurring = 1 and conflict not occurring = 0). The results from the

binary logistic regression are given in Table 5. The results showed that the model was highly significant ($p= 0.004$, Chi square= 19.049), and thus worth for discussion. The model included a number of independent variables as indicated in the conceptual framework (Fig. 1). However, only a few of them had a significant impact on land conflicts as indicated in Table 5. In order to ascertain the model results, the respondents were also asked to provide their opinions on causes of the land conflicts, and the results are provided in Table 6.

Table 5: Binary logistic regression results on factors influencing land conflicts

Variables in the Equation	B	S.E.	Wald	df	Sig.	Exp(B)
Types of land ownership	0.982	0.573	2.935	1	0.087	2.669
Delay in solving land conflicts	0.006	0.003	3.935*	1	0.047	1.006
Season of the year with high rate of land conflicts	0.730	0.313	5.424*	1	0.020	2.074
Community participation in conflict resolutions	-0.610	0.295	4.262*	1	0.039	0.543
Number of cattle	0.007	0.005	1.767	1	0.184	1.007
Adequacy and availability of grazing land	-0.010	0.005	3.510	1	0.061	0.990
Constant	-2.175	1.045	4.336	1	0.037	0.114

Chi square value=.19.049, df=6, p=0.004

*Significant at the 5% level

Table 6: Respondents opinions on causes of land conflicts (n=209)

Variable	n	%
Scarcity of resources	109	58.2
Corruption	88	42.1
Unclear village boundaries	39	18.7
Poor awareness on land rights	37	17.7
Population growth	37	17.7
Lack of land use plans	35	16.7
Ethnicity	23	11.0
Poor community participation	16	7.7
Delay to solve land conflicts	9	4.3

4.4.1 Types of land ownership

Based on the types of land ownership, the respondents were asked to mention what type of land ownership they practised between private and communal ownership which were prominent in the study area. A value of “1” was given to communal ownership while “0” was given to private ownership. The results (Table 5) show that types of land ownership had positive impact ($B = 0.982$) on occurrence of land conflicts, which was significant at the 10% level ($p = 0.087$). Therefore, the null hypothesis that land tenure systems do not have significant impact on land conflicts is rejected. This implies that communal land ownership may have negative effect on incidents of land conflicts occurrence, i.e it could be fuelling such conflicts.

The reason why respondents who owned land communally were more likely to face incidents of land conflicts in the study area is based on the fact that the area (Mgongola Basin) that has been being competed for by farmers and pastoralists is located in Kambala village where the majority are pastoralists, and where land is governed communally. During the study, it was noted that, the respondents resided in three villages: Mkindo, Bungoma and Kambala villages. Users of Mgongola Basin were more likely to be involved in land conflicts compared to those who resided in Msufini village who were not users of the area that pastoralists and farmers competed for. However, the assumption of this study is that the problem is not communal ownership, but basically is the competition over scarce resources. Msuya (2013) argues that the competition for resources (land and water) is an important reason for such conflicts. Therefore, the solution is not to change the systems of ownership, but to overcome the shortage by introducing proper use and management of available resources.

4.4.2 Delay in resolving land conflicts

The results in Table 5 show that delaying in resolving land conflicts had significant impact at $p= 0.047$ on occurrence of land conflicts, with a Wald statistic of 3.935. It was the fourth most influential variable to influence incidences of land conflicts. Regarding this variable, the respondents were asked to explain whether land disputes had been resolved in time whereas a value of “0” was given to those who responded “yes” and a value of “1” to those who said “no”. The results imply that delaying to intervene and resolve land disputes in time increases chances of land conflicts occurrence. Based on the explanations given by the respondents, it was found that there had been delay in dealing with incidents of land conflicts. This had greatly contributed to a state which contributed to eruption of frequent land conflicts.

The respondents claimed that issues of land administration and conflicts resolution on land used by smallholder communities had not been given due consideration as expected whereby, in some cases, the responsible authorities had not been taking appropriate efforts to deal with indicators of land conflicts until conflicts escalate and become violent. During the study, one of the farmer respondents said “...*this is the cultivation season, but we are currently unable to cultivate our farms due to the long-running disputes without solutions, so we are planning to organize a strike to pressurize the responsible authorities to give us our right*”. Wehrmann (2008) argues that people, especially those in a position to resolve conflicts, often ignore land conflicts until they cannot be controlled any longer, that is to say tension escalate and violence rises to a level which threatens major parts of society. In other cases, political motives contribute to hinder provision of timely solutions to land conflicts where those in position use the existing conflicts for political gains (PAICODEO, 2013).

When the respondents were asked to provide their opinions on causes of land conflicts (Table 6); 42.1%, 18.7%, 16.7% and 4.3% of the respondents showed their concern in corruption, poor administration on land use plans, village boundaries and delay to solve land conflicts.

The respondents concern was much more on corruption as a root cause in delaying to solve land conflicts. The respondents claimed that unfaithful leaders and government officials had been using prevailing disputes over land as a source of income by demanding bribes from parties involved in the conflicts. This has contributed to fuelling conflicts. During FGDs, each community (farmers and pastoralists) blamed one another for using bribes to gain favour from law enforcers. On one side, farmers had been accusing pastoralists to gain favour from government authorities by using their wealth to bribe public officials, including the police, judiciary staff as well as local government officers and politicians. One of the respondents from a farming community said *“Corrupt public leaders are the main cause of land conflicts that have been increasing over the years in our areas, especially between pastoralists and farmers”*.

A similar observation was also shared by the pastoralists whereby on their side they blamed government officials for collaborating with farmers to introduce and authorize high and unbearable fines as well as stealing of their cattle. Furthermore, pastoralists accused some politicians who had been using the land conflicts to make financial gains and looking for votes by promising farmers that they would expel the strangers (pastoralists). Though many of government officials and political leaders were not willing to accept the accusation, but through information given by the respondents, key informants and FGDs, it was noted that the way land is governed in the study area provides loopholes for corruption to persist.

These results support the observation by Myenzi (2005), TALA (2012) and Benjaminsen *et al.* (2013) who observed that good governance on land in Tanzania is hindered by corruption which leads to loss of trust in authorities such as local government, the police or the judiciary, and in the willingness of these authorities to prevent conflicts in the future. TI (2011) went further and stressed that, when corruption is present in the land sector, related actions and decisions are driven by distorted interests and policies that favour few people. The implication of losing trust to government authorities will often lead communities to use violent means to get their rights. Therefore, any efforts to improve land management and dealing with land disputes in the study area and in other areas in the country should be taken in line with efforts to curb corruption that has been said by communities as a barrier to getting sustainable solutions to land conflicts.

4.4.3 Season of the year with more conflicts

The study intended to identify which season in a year is likely to lead in the occurrence of land conflict. The respondents were asked to explain which season of a year, rainy and dry season, has been facing more incidents of land conflicts. A respondent who said rain season was given a value of “0” while a respondent who said dry season was given a value of “1”. With regard to this variable, the results in Table 5 reveal that incidents of land conflicts were more likely to occur during the dry season with the significance of $p= 0.020$ and the biggest Wald statistics 5.424, revealing that the variable was the most influential compared to other variables applied in the model. These results confirms that, in the dry season where water and pastures are scarce, it is more likely for such scarcity of resources to increase high herd mobility which also increases the possibility to trespassing into farmers’ fields and causing crop damage which leads to farmer-header conflicts.

Using of water for irrigation on farms during the dry season and decrease of water, intensified by climate change, were among the factors which contributed to escalation of land conflicts during the dry season. This assumption supports results of a study done by Msuya (2013) who argues that, in areas where crop farmers and pastoralists interact, resources are scarce, thus rivalry has always been there. This has been the case as pastoralists often trespass croplands while migrating or when moving livestock to water resources to drink after feeding. Furthermore, the results reveal the importance of resolutions to other fore mentioned factors which contribute to incidents of land conflicts in the study area such as application of land use plans, demarcation of village boundaries as well as improvement of infrastructures in rural areas, specifically in pastoral areas.

4.4.4 Community participation in conflict resolution

Respondents were asked to state if they had ever participated in decision making processes on land conflicts resolutions or not. A value of “0” was given to those who responded “no” whereas the value of “1” was given to those who said “yes”. The results (Table 5) show that variable X_4 had significant impact in the chances of land conflict occurring ($P < 0.05\%$) with a negative effect on incidence of occurrence of land conflicts. The negative sign of regression coefficient ($\beta = -0.610$) indicates that participation of community in land conflicts resolution contributes to decrease in the occurrence of incidences of land conflicts. That variable had second highest Wald ratio of 4.262 (second most influential variable) which implies that increasing community participation makes incidents of land conflicts to decrease. Some of the respondents involved in land conflicts complained that the sustainable solution to land disputes was not found because their leaders had the tendency of reaching resolutions without consulting them.

Involvement of the communities in land conflict resolutions and governance of land in general is essential in combating corruption as well as increasing transparency in land management. This assumption is supported by ACCORD (2010) and URT (1995) which emphasize that community participation is important since there is general consensus that if people participate in the process of taking a decision, they are more likely to support it. The rationale behind this is that their participation increases and creates a sense of ownership and accountability. Contrary to that, poor community participation in decision making processes on land matters creates a sense of isolation amongst the people; hence they find another way of expressing their anger which mainly involves violence. In doing so, they are likely to resort to violent ways. This observation was further confirmed by the opinions given by the respondents where 7.7% of them mentioned poor community participation as one the factor responsible for land conflicts. Also 17.7% mentioned poor awareness on land rights as another factor on land conflicts, which makes a lot of sense with the model results because lack of awareness is likely to lead to poor community participation.

4.4.5 Number of cattle

The number of cattle kept by pastoralists was one of the independent variables entered in the logistic regression model. Though the variable did not have significant impact on the chances of land conflicts occurring, it was expected to have a positive sign with incidents of land conflicts ($\beta = 0.007$). The Wald statistic was 1.767. One of the reasons why it did not have significant impact could be due to relatively few numbers of pastoralists (38 out of 209 respondents involved in the study) who had experienced land conflicts. The plausible explanation for this is that the more cattle someone kept, the more likely he/she was to be involved in land conflicts. Farmers and some government officials urged pastoralists to reduce the number of their herds. The call by farmers and government

officials was opposed strongly by pastoralists who also wanted farmers to reduce the size of their farms, if it made sense logically.

On one hand, farmers complained that cattle overstocking led to the lack of pastures deserving to accommodate the large number of livestock. The farmers' observation was similar to that by Kisoza (2014) who reported on overstocking implication, that it increases high herd mobility which in turn increases the likelihood to trespass into farmers' villages and causing crop damage which leads to conflict with farmers. Likewise, the increase in the herd size is associated with a decrease in herding efficiency, where herders fail to control the animals sufficiently.

On the other hand, members of the pastoral community complained about the increase of uncontrolled farm land as a major problem causing farmer-header frequent conflicts. They claimed that farmers collaborate with corrupt public officials and politicians to encroach their land, claiming that the land is idle without considering the fact that pastoral communities do move seasonally. The pastoralists' perception was supported by Benjaminsenet *al.* (2013) who argue that, since the colonial period, headers have been perceived by authorities and other communities as unproductive, unorganized and environmentally destructive.

4.4.6 Grazing land adequacy

In line with the number of cattle (X_5) and season with more land conflicts (X_4), the respondents were also asked to state the adequacy of grazing land (X_6) whereby "0" value was given to respondents who said grazing land is inadequate while "1" value was given to those respondents who said that grazing land is adequate. The results (Table 6) show that the variable had significant impact at the 10% level ($p= 0.061$), with negative effect on

chances of incidents of land conflicts to occur, which implies that having adequate land for grazing can reduce incidents of land conflicts. Adequate land can accommodate pastoral community in the grazing land, hence reducing land conflict incidents.

In the FGD session with pastoralist, it was revealed that the main constraint faced by pastoralists was shortage of grazing land caused by expansion of farm land done by farmers as well as commercialization of crop residues. Their claims concurred with information available in URT (1995) that, since 1967 government policies have been formulated in favour of agriculture. This has resulted in the extension of cultivation to marginal land areas, thus leading to the reduction of grazing land. It was narrated also (by pastoralist respondents) that, previously, pastoralists were able to graze their cattle on harvested farms for free after getting a prior consent of farm owners, but currently they are required to pay for grazing in such places. These observations imply not only deficiency of application of LUPs in the study area, but also reflect contradiction of land related laws whereby the Village Land Act (URT, 1999), for example, makes provisions for pastoralists to secure rights to land for extensive grazing systems, but they are not widely known and protected accordingly. Therefore, any efforts to address this challenge should come up with proper strategies to protect and ensure sufficient grazing land.

When the respondents were asked to give their opinions on the causes of land conflicts in their area 58.2% of the respondents (Table 6) mentioned that scarcity of resources was a major problem in their area that resulted in disputes over land. Based on this reason, farmers complained about overstocking as a main reason that contributes to scarcity of land and water, a state that forced pastoralists to invade their farms and spark land disputes. On the other hand, pastoralists explained shortage of resources, water and pastures in particular as a situation that was caused by increased cropland. All the

interviewed pastoralists said that land used for crops was greater in surface area than the grazing land they could access.

Similar findings by Mworira and Ndiku (2012), Msuya (2013), Benjaminsen (2013) and Mohamed (2014) revealed that the shortage of basic resources such as land and water in rural communities are predominant conflict causing items in Sub-Saharan Africa, including Tanzania. However, these results were different from the figures that have been released by the government (URT, 2011), revealing that arable land in Tanzania is plentiful whereas out of the 44.0 million hectares, it is only 10.5 million hectares that are utilized, which is 23% of the area suitable for agriculture. These figures prove beyond doubt that we still have enough land to practise agriculture. The problem is in the distribution of land resource for the people engaged in farming. In this regard, and as many of the respondents are advised, there is a need of effective coordination mechanisms to regulate the allocation and use of available land to all users.

4.5 Efforts Made to Mitigate Land Conflicts in the Study Area and Key Actors

The findings in Table 7 show that 67.0% of the respondents confirmed that the government had been the major player in resolving land conflicts in the study area. Other actors were traditional institutions (23%), followed by CSOs (9.6%) and religious institutions (by 0.5%). During the study it was noted that farming community preferred to use government systems to resolve land conflicts while the pastoral community preferred to use their traditional institutions. Though the government and traditional institutions seemed to play a major role in resolving land conflicts, also there were some efforts that had been made by other actors; those were CSOs and religious institutions. During the interview session with key informants including religious leaders, they explained that they

had been involved in conflict resolutions by preaching and emphasizing communities to live in peace and harmony.

According to FAO (2010), there is a need for various stakeholders to cooperate with the government in addressing land disputes in line with supporting the community to build and strengthen conflict resolutions' organs. Religious institutions can play their part such as restoration of societal values (HAKI-ARDHI, 2011) in order to improve the making of fair and just decisions by those who have been entrusted with authority to make decisions (Yamano and Deininger, 2005). So far, CSOs such as HAKI-ARDHI, Action-Aid, MVIWATA, PINGOS Forum and LHRC have demonstrated remarkable knowledge and experience in building the knowledge base and supporting land use plans development as well as awareness creation on land rights and other related issues.

4.6 Proposed Solutions to Conflicts Over Land

The results in Table 7 show the possible solutions based on respondents' recommendations whereby 32.5% proposed setting of village boundaries, 14.8% introduction of land use plan, 9.6% fighting of corruption, 9.1% improvement of good governance on land and 9.1% for educating community. These proposals constitute a total of 75.1% of comments made on how to resolve land disputes in the study area. Other suggestions such as provision of land title deeds, and strengthening capacity of village land committees constituted 25.8% of the recommended solutions.

Table 7: Key actors and possible solution in conflict resolutions

Variable		n	%
Key actors	Government authorities	140	67.0
	Religion institutions	1	0.5
	Civil societies	20	9.6
	Traditional institutions	48	23.0
Possible solutions	Application of LUP	31	14.8
	Combating corruption	20	9.6
	Provision of title deeds	11	5.3
	Improving good governance	19	9.1
	Setting clear village boundaries	68	32.5
	Improving livestock infrastructures	3	1.4
	Emphasizing respect	9	4.3
	Introduction of land conflict EWS	6	2.9
	Educating communities	19	9.1
	Organizing regular meetings	4	1.9
	Strengthening capacity of VLCs	12	5.7
	Introduction of “special zones”	7	3.3

4.6.1 Setting village boundaries

The greatest proportion of the respondents (32.5%) proposed demarcation of village boundaries as a strong solution to the prevailing land disputes in the study area. The distribution of this suggestion by each village was 40%, 27.5%, 23.5% and 36.5% for Mkindo, Bungoma, Kambala and Misufini respectively. In those areas, demarcation of village boundaries was said to be a priority and solution to both the absence of land use plan and land conflicts. Setting of village boundaries will result into more village land certification, introduction of land use plans and issuing of Customary Certificate Rights of Occupancy (CCRO) to individual villagers, families and group land holders in villages as the case may be. The suggestion is in line with the observations made by Bahaet *al.* (2008), Hoza (2009) and Kizoka (2014) who observed that the existence of frequent land use conflicts is a result of disregarding village boundaries. They further concluded that where village boundary is a problem also land disputes are inevitable.

4.6.2 Application of land use plans

The application of land use plans as a means of reducing land conflicts was opted by 14.8% of the respondents (Table 7). The distribution per village was: 12.7% for Mkindo, 19.6% from Bungoma, 17.6 for Kambala and 9.6% for Msufini. The respondents explained the need of having formal land use plans not only to ensure tenure security of their land, but also to enable village governments to provide CCROs to land owners. Those comments were made in line with the call for provision of the title deeds.

These claims indicate the importance of government authorities to ensure that appropriate measures are taken to implement land use plan as a means of supporting sustainable land use and eliminating land disputes among different competing land users. Implementation of land use plans may apply also to enhance sustainable utilization and management of natural resources. Regarding the importance of introduction and implementation of land use plans, HAKI-ARDHI (2010) observes that, with land titles, villagers are more secure with their land, can enter into legal agreements, can use their title deeds as collateral and transfer their titles to third parties when they wish to. Therefore, supporting demarcations of village land and implementation of land use plans will result into more village land certification and issuance of CCROs to individual villagers, families and corporate land holders in villages.

4.6.3 Combating corruption

Combating corruption was ranked third by 9.6% of the respondents (Table 7) in terms of its contribution to land conflicts in the study area. Though some community leaders interviewed as key informants during the study denied the existence of corruption in land management, some of them, however, admitted and even claimed that corruption was the root cause in escalating land conflicts in their villages. Dealing with corruption in land

administration was viewed by the respondents as a cross-cutting issue similar to comments given by Brankov and Tanjevic (2013) who asserted that corruption undermines the rule of law, democracy and human rights, undermines good governance, fairness and social justice, distorts competition, hinders economic development and endangers the stability of democratic institutions and the moral foundations of society. TI (2011) asserts that when corruption is present in the land sector, related actions and decisions are driven by distorted interests and policies that favour few peoples.

4.6.4 Educating communities

The results in Table 7 revealed that 9.1% of the respondents had the views that awareness creation on land and conflict management would play a crucial role in achieving sustainable solution in resolving land conflicts. Respondents' recommendations were supported by URT (1998), which argued that insufficient awareness among villagers about their legal rights over the land use is an obstacle to achieve full land tenure security and conflict resolutions. On educating communities through awareness creation, ILC (2013) and HAKI-ARDHI (2010) argue that broad-based public education and awareness on land related issues can be done through public engagement programmes like participatory training, use of mass media, theatre, and user-friendly publications.

Sensitization of communities on their land rights is a recommendable approach since it increases community involvement in addressing the challenges around land issues and reduce unnecessary conflicts before they escalate to serious levels. Any initiatives towards awareness creation should go hand in hand with the assessment of the specific needs to enable the provision of tailored services by considering that ignorance among community members can create room for exploitation of one's land rights.

4.6.5 Improving good governance on land

In the interview with household heads, the FGDs and key informants recommended improving good governance over land. It was mainly based on two aspects: community participation in decision making processes and capacity building of village land committees. Sometimes those terms were used by respondents interchangeably. The results (Table 7) reveal peoples' opinions on those aspects whereby 9.1% recommended community participation and 5.7% recommended improving capacity of village land committees.

Poor or complete lack of community participation in land management seemed to be one of the factors contributing to land disputes. Therefore, suggestion on increasing participation is an integral part of the solution. Participation also provides avenues for sharing of information and learning. It was also noted that the root cause of conflict over land is people's inability to develop effective institutions. The respondents' arguments were not only the absence of committees as required by laws that governed land matters, but also the existence of capable committees in performing their duties properly.

4.7 Relevance of the Marxist-Based Theory on Social Conflict in Mvomero District

Through the study, the results revealed various factors which contributed to conflicts over land. It was found that inadequate grazing land and water for irrigation and for livestock consumption were among the major factors which contributed to escalation of land based conflicts among smallholder communities in Mvomero District as each community in the district struggles to have control of, and access to the resources in question. The struggle to control these major resources (land and water) has been the main reason for the recurrence of conflicts among smallholder communities in the district. This implies that the Marxist-based theory on social conflict applies to the situation of land-based conflicts in the district.

CHAPTER FIVE

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The main objective of this study was to assess the relationship between land tenure systems and land conflicts in smallholder communities in Mvomero District, while the specific objectives were to: identify land tenure systems and land distribution patterns, determine the extent of community awareness on land tenure systems, assess factors influencing land conflicts, and assess efforts made to mitigate land conflicts in the study area.

According to the findings, the vast land in the study area was village land whereby customary right of occupancy was applied by land users. Under such right of occupancy, two types of land ownership, private and communal, were applied. For security of tenure, it was noted that village protection was relied on by all land users since all land was village land. This makes land security for individual land holders insecure, thus making communities prone to conflicts among different land users.

About the extent of community awareness of land tenure systems, the study concludes that there was reasonable level of awareness of the community on the existence of land tenure systems and other important aspects related to land. However, the percentage of those who were not aware (46.4%) was also greater to the extent that it could affect daily land management as well as playing a significant role as a barrier to conflict resolution and community participation in decision making processes on land governance. The lesson learned from community awareness on land rights is that awareness itself does not guarantee non-emergence or recurrence of land based conflicts; instead there is a need for

major improvement regarding systems and institutions dealing with land governance and land based conflict resolution.

In the light of factors influencing occurrence of land conflicts, it is concluded that delay in solving land conflicts, poor community participation in conflict resolutions, corruption and scarcity of resources are among the major causes of land conflicts. These factors influence occurrence of land conflicts; if they were tackled and dealt with as early as possible, this would significantly contribute to ending land based conflicts.

With regard to efforts made to mitigate land conflicts in the study area, it was found that government and traditional institutions had been playing a major role in resolving land conflicts. Also, it was found that other actors such as CSOs and religious institutions were important in mitigating land conflicts among smallholder communities in the study area. It is clear that different stakeholders, government, religious, and traditional institutions play a key role in mitigating land based conflicts in the study area. However, one may conclude that much more coordinated, reliable, sustainable, and prompt measures are needed to deal with land conflicts in the study area.

5.2 Recommendations

It is obvious that much is still needed to be done in the study area on land tenure systems that are responsive to the needs and interests of people in the study area. Therefore, in view of the conclusions of this study, the following recommendations are made:

- i. Measures to increase land tenure security in Mvomero District as well as other rural areas in Tanzania must be complemented by pro-poor policies to ensure setting of clear village boundaries and proper application of land use plans since the current

systems are not properly planned and designed to accommodate all land users equitably.

- ii. Awareness creation on land related matters and conflict resolutions should be considered as a priority issue for security of land use by smallholder communities. The government; in collaboration with other actors like CSOs, religious and traditional institutions; should work together to sensitize community on land rights. Through such sensitization, communities will be able to participate effectively in curbing corruption on land as well as increasing their ability to solve land disputes and participate in decision making processes on matters related to land and other natural resources.
- iii. In order to maintain peace and harmony in the society, change of the mind-set of different land user groups, the farming and pastoral communities, for example, should consider the value of each other in order to avoid land conflicts. The farmer should respect and protect the land allocated for pastoral activities and the pastoralist should also respect the land allocated for crops farming. Having this in mind will reduce to great extent chances of conflict to occur.
- iv. Due to frequent land conflicts in Mvomero District that have been causing destruction of property and loss of human lives, there is a need for the government to look into the possibility of introducing special security zones in order to maintain peace and harmony in the society. Experience on this proposition could be adapted from Tarime District, Mara Region where “A Police Special Zone” was introduced by the government to end killings of people that have been seen to be common in that area. This should go hand in hand with strict measures to fight corruption that was claimed to be one of the major obstacles to good governance of land resources.

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APPENDICES

SOKOINE UNIVERSITY OF AGRICULTURE DEVELOPMENT STUDIES INSTITUTE, P.O.BOX 3024, MOROGORO

Appendix 1: Questionnaire

A. GENERAL INFORMATION

Questionnaire number.....Name of Enumerator.....

Date of interview.....

Name of the household head

Name of the respondent.....

Hamlet..... Village.....

Ward.....

Division.....

District.....

B. BACKGROUND INFORMATION

No	Description/ Particulars	Required
1	Sex of the household head (1) Male (2) Female	
2	Age of the household head	
3	Ethnicity (i.e. Maasai, Kaguru, Zigua, etc)	
4	Marital status (1.Single 2.Married 3.Widow/Widower 4.Divorced) of the household head	
5	Main economic occupation (1)Farmer (2)Pastoralists (3)Business (4) Employed (5) Other (specify) of the household head	
6	Secondary occupation (1)Farmer (2)Pastoralists (3)Business (4) Employed (5) Other (specify) of the household head	
7	Level of education of the household head 0.None 1.Primary 2.Secondary 3.Post sec 4.College 5.University 6.Adult education	
8	Number of years in schooling of the household head	
9	Duration of residence: (1) Less than 10 years (2) 11-20 years (3) 21-30 years (4) More than 30 years	
10	House hold members :	0-14 years
		15-64 years
		65+ years

C. LAND ISSUES AND AWARENESS ON TENURE SYSTEMS

1. What type of land ownership do you practice?

- (1) Private
- (2) Communal
- (3) Hired

2. What is the total size (in acres) of your own land?

.....

3. If you are a pastoralist/ agro-pastoralist, what types of livestock do you keep?

Type	Number	Feeding system
i. Cattle		
ii. Goats		
iii. Sheep		
iv. Others		

4. Where do you graze your livestock?

- (1) Communal grazing lands
- (2) Fallow (bare) lands
- (3) Harvested fields
- (4) Established pastures

5. Is the available grazing land adequate?

- (1) Yes
- (2) No

6. If no, how do you manage the problem?

.....

7. If you are a farmer, which types of crops do you grow?

- (1) Maize
- (2) Rice
- (3) Sunflower
- (4) Vegetables
- (5) Others (specify)

8. Do you allow pastoralists to feed their livestock on your crop residues after harvest?

- (1) Yes
- (2) No

9. If yes (in 8 above), in what terms do you allow pastoralists to use your crop residues?

- (1) Give free
- (2) Sell
- (3) Battered exchange
- (4) Others (specify)

10. If no (in 8 above), have they ever grazed their livestock on your farm without permission?

- (1) Yes
- (2) No

11. If yes (in 10 above), what did you do?

- (1) Report to the authorities
- (2) Keep quiet
- (3) Resolve with the pastoralists
- (4) Others (specify)

12. How did you acquire the land you own?

- (1) Purchased

- (2) Inherited
 - (3) Allocated by government
 - (4) Pouted (clear the forest)
 - (5) Others (Specify).....
13. How do you use your land?
- (1) Cultivation
 - (2) Grazing
 - (3) Other (Specify)
14. For how long have you been using this land?
15. Is your land holding adequate?
- (1) Yes
 - (2) No
16. If not (in 15 above), why?.....
-
17. If no (in 15 above), how much additional land do you need (in acreage)
-
18. Which institutions (s) regulate land use in the village?
- (1) Customary authorities
 - (2) Farmers groups
 - (3) Grazing management groups
 - (4) Formal institution set by government
 - (5) Village government
19. Which of the institutions above has legitimacy and exercise the real power over land?
- (1) Customary authority
 - (2) Farmers group
 - (3) Grazing management group
 - (4) Formal institution set by government
 - (5) Village government
20. Do you have any institutional right/certificate to land ownership?
- (1) Yes
 - (2) No
21. What institutional right (s) do you have over your land holding?
- (1) Title deed (statutory)
 - (2) Customary right
 - (3) Village protection
 - (4) Others (specify)
22. What types of land rights that have been commonly used by other land users around you?
- (1) Title deed (statutory)
 - (2) Customary right
 - (3) Village protection
 - (4) Others (specify)
23. How does such right (in 21 above) influence your investment decisions with regard to land utilization?
- (1) Expanding land
 - (2) Improving land
 - (3) Diversifying the investment
 - (4) Others (specify)
24. Location of farm in the landscape

- (1) Beside the stream/ river
 (2) Around home stead
 (3) Near the grazing land
 (4) Other (specify)
25. What are the incentives which attracted you to stay or migrate into this village?
 (1) Pasture
 (2) Land for cultivation
 (3) Water
 (4) Others (specify)

D. Awareness of land tenure systems

S/N	Awareness of land tenure systems	Well aware	Moderately aware	Not at all aware
26	Awareness on the existence of land tenure systems			
27	Awareness on application of land tenure systems in your area			
28	Awareness on land title deeds for security of your land			
29	Awareness on the difference of having or not having land title deeds			
30	Awareness on procedures to follow to get land title deeds			
31	Awareness on having land title deeds for sustainable utilization of your land			
32	Awareness on the significance of application of land tenure systems in reducing land conflicts			

E. Communities' participation in land administration

33. Land resource use in the community requires active participation; at which level are you involved in managing the resource?
 (1) At decision level only
 (2) At implementation level only
 (3) Not at all
34. Which group dominates the local meetings?
 (1) Pastoralists
 (2) Crop producers
35. Does the local authority take action towards your recommendations or contributions given during the meetings?
 (1) Yes
 (2) No
36. If no (in 35 above) which actions do you take to ensure implementation of your recommendations towards land use?

37. If yes (in 35 above) is there any delay in implementation of your recommendations?
 (1) Yes
 (2) No

38. Are you satisfied with the extent of your participation in decision making on issues related to land management in your area?
- 1 Completely dissatisfied
 - 2 Somewhat satisfied
 - 3 Completely satisfied
39. Do you think there is any connection between the communities' participation in making decisions about land and the presence of land conflicts?
- (1) Yes
 - (2) No
40. If yes (in 39 above), how?
-
41. Do you know if there is any specific committee dealing with land administration in your village?
- (1) Yes
 - (2) No
42. If yes (in 41 above), which one?
- (1) Village Council
 - (2) Village Land Committee
 - (3) Village Land Tribunal
43. What is/are their role in land administration?
-
44. Do you participate in availability of members of those committees?
- (1) Yes
 - (2) No
45. If yes (in 44 above), how
-
46. If no (in 44 above), why
-
47. In your opinion, are you satisfied with effectiveness of that/those committee (s)?
1. Completely dissatisfied
 2. Somewhat satisfied
 3. Completely satisfied
48. What are the other challenges facing you in administering your land?
-
-
49. Based on your opinion, which best ways can be used to involve the community in land administration?.....
-

F. Conflicts and resolutions

50. Have you ever encountered personally involved in land conflicts?
- (1) Yes
 - (2) No
51. If YES (in 50 above), against whom?
- (1) Pastoralists
 - (2) Farmers
 - (3) Investors
 - (4) Others (specify)

52. What are the major causes of land use conflicts among smallholder communities in your area?
- (1) Scarcity of resources
 - (2) Poor land distribution by responsible authorities
 - (3) Village boundaries
 - (4) Poor land administration
 - (5) Others
(specify).....
53. At what time of the year did you experience conflicts over land?
- (1) Dry season
 - (2) Rain season
 - (3) Year round
54. Are there any relationship between land tenure systems and conflicts which occurred?
- (1) Yes
 - (2) No
55. If yes (in 54 above), how (specify).....
56. If yes (in 54 above), in which land do these conflicts are commonly occurring?
- (1) Communal grazing land
 - (2) Fallow land
 - (3) Harvested fields
 - (4) Open access land
 - (5) Farms
 - (6) Others (specify).....
57. If land is the major source of conflicts among smallholder communities, then what are the other causes of conflicts?
- (1) Poverty
 - (2) Non alternative livelihood
 - (3) Prolonged drought
 - (4) Others (specify).....
58. What is the role of responsible authorities in conflict mitigation?
- (1) Enforcement by laws
 - (2) Enforcement of land use planning
 - (3) Enforcement of land tenure
 - (4) Educating the community
59. Who have led efforts to mediate the conflict arises?
- (1) Government authorities
 - (2) Religion institutions
 - (3) Civil society organizations
 - (4) Traditional institutions
 - (5) Others (specify)
60. What are the major socio-economic effects caused by land conflicts?
.....
61. Can you resolve and manage these conflicts at village level?
- (1) Yes
 - (2) No
62. If no (in 60 above), why?
63. Do you think external forces can help in maintaining peace in your village?
- (1) Yes
 - (2) No

64. If yes (in 62 above), how?

.....

65. Which general solutions do you think could be workable and of long term to these conflicts?

.....

.....

Appendix 2: Checklist questions for key informants

i. Land tenure systems

1. Do you have a land use plan in your area?
 - (1) Yes
 - (2) No
2. If no above, why?
3. If yes above, how do you implement?
4. What are the types of land tenure systems existing in your area? (Customary land tenure or statutory land tenure)
5. Which one is the most common? (Please give reasons)
.....

ii. What efforts are being taken to improve land tenure systems?

.....

iii. Causes

1. What are the causes of land conflicts in your area?
2. At what time/ period of the year conflicts are common?
3. Why these conflicts are outstanding in this area?
4. What internal and external catalyst to the conflicts?
5. How can you relate land tenure systems and conflicts over land?

iv. Social economic effects of land conflicts

1. What are socio-economic effects of land conflicts?
2. Which group (farmers, pastoralists or agro-pastoralists) is most affected by land conflicts?

v. Resolution and management

1. What efforts are being made to reduce or end existing land conflicts?
2. In these efforts, which are experienced to be successful?
3. In your opinion, what are sustainable resolutions to the conflicts at grassroots level?
4. In finding resolutions on land conflicts, who have been major players among stakeholders? (government, religious, cultural, institutions and NGO's),

Appendix 3: Checklist for focus group discussion

1. Presence of land tenure systems
2. How do you perceive the presence of Village Land Act of 1999?
3. Types of land conflicts in the village
4. Source of conflicts over land
5. The presence and role of land tribunal machineries
6. Possible strategies to stop land conflicts

Appendix 4: Cochran's sample size formula

n = sample size;

$n = \frac{Z^2 * p(1 - p)}{d^2}$ (Cochran, 1977, cited by Bartlett *et al.* (2001), where:

Z = a value on the abscissa of a standard normal distribution (from an assumption that the sample elements are normally distributed), which is 1.96 or approximately 2.0 and corresponds to 95% confidence interval;

p = estimated variance in the population from which the sample is drawn, which is normally 0.5 for a population whose size is not known;

d = acceptable margin of error (or precision), whereby the general rule is that in social research "d" should be 5% for categorical data and 3% for continuous data

Using a Z-value of 2.0, a p-value of 0.5, a q-value of 0.5, and a d-value of 0.5% (which is equivalent to 0.05), the sample size (n) was determined to be 400.

$$n = \frac{2^2 * 0.5(1 - 0.5)}{0.05^2} = \frac{4 * 0.25}{0.0025} = 1/0.0025 = 400.$$