WATER CONFLICTS IN TIATY SUB-COUNTY, BARINGO COUNTY, KENYA: IMPLICATIONS FOR SECURITY IN THE CENTRAL RIFT REGION

BY

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This dissertation is submitted in partial fulfillment of the requirements for the award of Master of Development Studies from St. Paul's University

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DECLARATION

This dissertation is a product of my own work and is not the result of anything done in collaboration. It has not been previously presented to any other institution. I agree that the dissertation may be available for reference and photocopying at the discretion of the University.

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DEDICATION

This dissertation is dedicated to the late Eunice Wambui Gathere, my maternal grandmother. She was keen to urge us on the path of higher learning, one on which she had never treaded. She would be proud.

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ACRONYMS AND ABBREVIATIONS

ACLED	The Armed Conflict Event Location and Data Project
AFRIDEP	African Institute for Policy Development
BCIDP	Baringo County Integrated Development Plan
EISSR	Eastern Initiative for Social Science Research
FAO	Food and Agriculture Organisation of the United Nations
IPCC	Intergovernmental Panel on Climate Change
JICA	Japan International Cooperation Agency
KDHS	Kenya Demographic Health Survey
KNBS	Kenya National Bureau of Statistics
NACOSTI	National Commission for Science, Technology and Innovation
NEMA	National Environment Management Authority
OECD	Organization of Economic Cooperation and Development
OXFAM	Oxford Committee for Famine Relief
UNEP	United Nations Environment Programme

ABSTRACT

In Kenya, and in many places around the world today, water conflicts are beginning to emerge. This thesis takes cognizance of the fact that in the recent past, as shown through a number of examples cited herein, water conflicts that may threaten the security of certain regions and the nation at large, have emerged. This study focused on Tiaty sub-County in Baringo County, since events in the past few years have revealed contestations over water that have exploded into armed conflicts and as a result threatened the security of this area. It was guided by three objectives namely: To assess the nature and extent of water conflicts in Tiaty, sub-County; to establish which coping strategies have been applied so far by various stakeholders; to assess which challenges are associated with these coping strategies in Tiaty, sub-County. The literature review conducted did not show an explicit relationship between water conflicts and the state of security, both at the international and local levels. In most cases, researchers attributed the insecurity to political, social and economic reasons. Other scholars noted that water conflicts were taken so seriously that the warring communities resolved them quickly and amicably. Nevertheless, this study carried out a qualitative study to make its case. With the help of information gathered from key informants, this study was able to ground-truth its intended objectives. The study established that water-related conflicts do exist in Tiaty. It also determined their spatial and temporal extent, which is more frequent and geographically extensive than before. Most importantly, the study established that conservation was one of the methods used to quell or forestall conflicts in Tiaty, sub-County. Some of the methods in use include replanting grass, setting aside conservancies and rangelands. It also found out that illiteracy, inadequate funds and remoteness were some of the challenges facing the implementation of coping strategies. In sum, the study successfully demonstrates that addressing water conflicts through conservation can lead to improved security in Tiaty, sub-County.

CHAPTER ONE:

INTRODUCTION

1.1 Introduction

This chapter presents the research thesis, lays out the background of the study, states the problem, and poses the research questions. It also spells out its objectives and presents a justification of the study, together with the scope and limitations of the research.

1.2 Background of the Study

There are many definitions of conflict, though to a large extent, many include the issues of incompatibility of needs, poor communication and competition among actors. It is in the context of these preexisting conditions, that manipulative leaders make use of underlain stereotypes to fan intolerance and hate that may lead to acts of conflicts. That said, this thesis shall focus on the aspect of competition for resources. In Lyamouri-Bajja, Genneby, & Markosyan, (2012:56) conflict is defined as 'a struggle between opponents over values and claims to scarce status, power and resources'. Similarly, Thakore, (2013:7) concurs with this and advances further to include 'preferences, beliefs and desires' as other reasons that precipitate a struggle. The above definitions are in tandem with the main thrust of this thesis which is that communities facing scarcity of resources are prone to engaging in acts of violent conflict. In marginal communities, scarcity of water and grazing land is a likely driver of conflicts. This is the intended focus of this thesis.

To this end, this thesis proposes that, addressing water conflicts through environmental interventions, can act as a means of preventing insecurity. Addressing water-related challenges that precipitate conflicts, can serve as a tool of forestalling insecurity (Ali, 2005). It will look into ways and means of addressing insecurity through such strategies that seek

to contain, de-escalate or limit the extent of a conflict but not to necessarily resolve it (Swanstrom & Weissmann, 2005). Marginal areas of Kenya are vulnerable to vagaries of climate change which include severe and recurring droughts, on top of having degraded lands with poor soils (NEMA, 2009). This study is of the view that resolving water-related conflicts holds the key to bringing about sustainable peace in the North Rift, Upper Eastern and North Eastern parts of Kenya.

Counties in the northern frontier are arid and semi-arid. For years, the environment supported pastoral communities living there but not anymore. Current estimates are that the area, which makes up 80% of Kenya's landmass, now hosts up to 14 million people (Schilling, Opiyo, & Scheffran, 2012). Population pressure, climate change, coupled with poor agricultural habits such as overstocking, have coalesced to present residents, County and National governments with a monumental social-economic challenge. It is with this knowledge in mind that this research proposes addressing water conflicts through conservation as a means of mitigating against the enduring state of insecurity in the area. The literature reviewed strives to show that there is a probable relationship between poor, degraded environments and the emergence of conflicts.

Conflicts over resources such as water and grazing land are beginning to spread to other parts of the country. Reduced or sometime torrential rainfall that is increasingly falling on bare lands, has resulted in less water percolating into the water table (Notter, Macmillan, Viviroli, & Weingartner, 2012). This has forced communities living in the upper catchment areas to switch to using river water for irrigation and domestic purposes. However, in the past few years, these communities have been forced to ramp up abstraction to meet the

shortfall caused by failed rains. This is pitting them against downstream communities, for whom the rivers are their lifeline.

To this end, efforts by the government to address water conflicts have been reactionary as opposed to proactive. Whenever water conflicts erupt in the Arid and Semi-Arid areas, paramilitary police are deployed to suppress inter-communal violence (Rohwerder, 2015). This exercise is often accompanied by peace building exercises and disarmament campaigns, of both ordinary citizens and police reservists. It is worth noting that there are no deliberate efforts targeted at water conflicts by government. However, there are small donor funded projects that have not been successful in addressing these conflicts, as indicated by their recurring nature.

1.3 Statement of the Problem

Tiaty has been at the centre of endemic incidences of conflicts and violence. The area where the counties of Laikipia, Samburu, Baringo and Turkana counties meet, is a hotspot for violent conflict. In the past 20 years alone, there have been 194 incidences of conflict, out of which 125(64%) were interethnic (ACLED, 2018). The number of incidences have been growing overtime, with the year 2017 registering the highest number of events. The numbers have been growing in tandem with the incidences of droughts, whereby 2017 was among the worst hit years. The young morans' invasion of neighbouring communities' lands and conservancies transformed the situation to a near-national security challenge. There was widespread loss of lives and property. Kaimba et al. (2011) observes that water and pasture scarcity leads to cattle rustling as communities seek to restock their herds. This study also noted that vulnerable groups migrate to areas that they consider safe havens to escape attacks. The result is internal displacement of people which is also associated with loss of

livelihoods, disruption of education and the eruption of communicable diseases. In spite of this overwhelming anecdotal and empirical evidence, the approach to solving these problems does not address water issues. Rather, a political approach, such as sending heavily armed security enforcement officers, has been the *modus operandi* of quelling conflicts when they occur. It is the argument in this thesis that addressing water issues can bolster security in Tiaty and the surrounding areas. Chepkwony (2018), notes in his thesis that various scholars have attempted to proffer other strategies to address conflicts in Baringo such as disarmament with little success. It is in light of these facts that this thesis would argue for conservation as one of the ways of addressing water conflicts and consequently bolstering security in Tiaty.

1.4 Objectives of the Study

1.4.1 The Overall Objective of the Study

The overall objective of this study is to find out the implications of water conflicts on security in Tiaty Sub County, and the greater Central Rift Region.

1.4.2 Specific Objectives

1. To assess the nature and extent of water conflicts in Tiaty.
2. To establish which coping strategies have been applied so far by various stakeholders in Tiaty.
3. To assess which challenges are associated with these coping strategies in Tiaty.

1.5 Research Questions

1. What is the nature and extent of water conflicts in Tiaty?
2. What are the coping strategies that have been applied so far by various stakeholders in Tiaty?

3. What challenges are associated with these coping strategies in Tiaty?

1.6 Justification of the Study

Demographic and environmental factors have created a cocktail of seemingly insurmountable challenges for Baringo County. A rapid population growth rate, with fertility rates at 4.8 children per woman, is piling pressure on a fragile environment and offsetting a delicate balance between man and nature (KNBS, 2014). Climate change has also dealt a heavy blow on the County with recurring droughts that are longer and more frequent. Natural factors such as these, together with human practices have led to many social, economic and environmental challenges. One of the biggest environmental challenge is water shortage especially in Tiaty, which already receives low rainfall. According to the Baringo County Integrated Development Plan (2013), many households in Tiaty/East Pokot do not have access to improved sources of water. In 2009, only 59 households had access to piped water in Tiaty sub-county (Baringo CIDP, 2013). The main sources of water are springs, rivers and water pans which are considered unsafe because they are unprotected. The average distance between households and a source of water for the county is 5km, which is above minimum acceptable standards which is less than 1 km (Nygren, O'Reilly, Rajasingham, Omore, & Ombok, 2016).

Environmental degradation which is brought on by deforestation, desertification, climate change and pollution is one of the greatest challenges facing Baringo County (Baringo CIDP, 2013). For instance, Tiaty experiences flooding due to land degradation on the upper regions of the county. Malaria is common during the floods, with the incidence of the disease standing at 14.9% (Baringo CIDP, 2013). This exacerbates the already dire levels of poverty in Tiaty, and as such, scarce resources are diverted to fight the disease. Heightened levels of

insecurity have also forced health workers to abandon their work stations leaving patients unattended, which in turn leads to high morbidity rates (Otieno, 2018).

Deforestation and desertification are driven by overstocking, among other factors. This in turn leads to overgrazing. Equally deleterious, is the burning of charcoal, which is rampant and unregulated. Poor agricultural practices such as cultivation on steep slopes, also persist in the sub-county (Baringo CIDP, 2013). Interventions such as the introduction of conservancies have been associated with the eruption of both intra and inter-communal violent conflict in the area, as an unintended consequence (Greiner, 2012). The reason is that conservancies possess pasture and water for livestock during times of scarcity. Thus, they inadvertently act as drivers of conflict since they attract desperate herders during droughts.

In light of these facts and figures, this study sought to show that one of the unintended consequences of these natural and human induced vices has been recurring episodes of violent conflict. It will therefore seek to evaluate the relationship, if there is any, between water conflict and its implications for insecurity in Tiaty, Baringo County.

It is envisaged that this research, will at the very least, inform future policy formulation at both levels of government, the private sector and non-profit organisations. The policy change will in turn influence the choice of interventions chosen to address endemic conflict in Baringo and other Arid and Semi-arid Counties. The said interventions should strive to be sustainable, particularly, with regards to the environment. This is because these conflicts are likely as a result of continued pursuance of an unsustainable economic activity in the context of high population growth, climate change and land scarcity and degradation.

1.7 Delimitations and Scope of the Study

The study focused on water-related conflicts in Tiaty, despite there being a myriad of other environmental related challenges in the country. These environmental issues also affect various other aspects of life such as food security and agricultural production. As such, while acknowledging the breadth and complexity of the study topic, the researcher limited the study to water-related conflicts and their implications on security.

The researcher settled on a qualitative study which applied key informant interviews as a method of data collection. The interviewees were deemed to be people of great repute, knowledge and experience on the topic and location of the study. The expanse of the study area and the high illiteracy rates among the study population, discouraged the deployment of a quantitative study.

This study focused on Tiaty as reports had indicated that herders who had invaded other areas, were residents of this Constituency. Equally, a harsh terrain, time constraints, insecurity and inadequate funds, limited the study to Tiaty constituency. It is envisaged that the results of this study shall shed light on the underlying causes of conflict in the area and the current conflict management practices that the communities are engaged in. The results of the study could be extrapolated to cover the neighbouring Counties.

The study focused on Tiaty Constituency or East Pokot Sub County located in Baringo County, in the former Rift Valley province. Baringo is one of Kenya's 47 administrative and political units created by the constitution of Kenya which was promulgated in 2010. Tiaty borders Baringo North and Marigat constituencies to the south, Turkana County to the North, Elgeyo Marakwet County to the West and Laikipia and Samburu counties to the East. Tiaty is a semi-arid/arid area inhabited by the Pokot community who practice transhumance

pastoralism. Over the past few years, with the latest reports being from last year, Tiaty has been the centre of violent conflict over pastures and water (Machira, 2017).

1.8 Limitations of the study

The researcher over relied on key informants as his main source of information. Most key informants were government workers with very busy schedules. The field visit also coincided with the height of a severe drought and famine. As such, Ward administrators, who were key to the researcher's study, were repeatedly held up in closed door meetings. This made it difficult for the researcher to pin them down for an interview. Thanks to their cooperation and support, the researcher was able to secure interviews with them that yielded successful and meaningful discussions. Upon reflection, the researcher considered that, focus group discussions would have offered an alternative method of data collection. This would have helped the researcher compare information gathered through both methodologies, to get the real picture.

The researcher had anticipated a number of challenges in the execution of this study. A harsh terrain, and an expansive territory meant that field trips took an entire day, a scenario that limited the number of key informant interviews that could be carried out in one day. As an employee, the researcher had challenges getting time off work to collect data in the field. There was a delay in getting approval documents for the study from the issuing authority. This delayed the commencement of the study, which in turn delayed the completion of the last two sections of the dissertation. However, the researcher surmounted to the challenges presented to him through careful planning. The time schedule was adhered to strictly and the interviews were brief and concise. In a nutshell, the exercise was a success, in which the researcher was able to conduct a majority of the interviews.

CHAPTER TWO:

LITERATURE REVIEW

2.1 Introduction

This chapter contains the literature review which is broken down into the introduction, the theoretical framework and empirical framework. The theoretical framework lays out the key theories relevant to the scope of this study. The empirical framework is further broken down into the global, regional and the Kenyan experience. The conceptual framework shall also be discussed at the tail end of the literature review.

2.2 Theoretical Framework

A number of theories explain the causes of conflicts and violence. They are drawn from a wide range of disciplines including Political Science, Social Psychology, Social Sciences and Biology. Theories of conflict can be categorized into two groups based on agency (person or group executing it), structure and politics of the economy. Scholars have examined both individual and group behaviour and have come up with theories that focus on agency at both levels. Those who study individuals argue that aggressive behaviour is programmed into the human DNA and as such, humans cannot help themselves (Akinyoade, 2013). However, this point of view was rejected in the Seville Statement on Violence (which rejected the standpoint that violence is innate to humans) as there is no evidence to support this claim (Danielsen, 2005). Theories listed under this category include Frustration-Aggression Theory and Social Identity Theory, with the later based upon the work of Henri Tajfel and John Turner.

Akinyoade (2013) further contends that those that study group behaviour (classical theorists) examine interactions among groups at the conscious level. Studies conducted at the group

level are useful at describing acts and events but do not offer explanations on the reasons that lead to their occurrence. Classical theorists argue that group acts of conflicts and violence stem from competition for resources and the power needed to acquire the said resources. Social Conflict Theory, Greed and Grievance Theory, Game Theory, and Ethnic Conflict Theory fall under classical theories of conflict. Akinyoade further shows that researchers have not restricted themselves to these two categories, rather, they have gone ahead to propose new ones to fill the knowledge gaps left by individual and group typologies, discussed above. The new theories include Relative Deprivation Theory, Enemy System Theory (EST) and John Burton's Human Needs Theory (HNT). This thesis shall restrict itself to expounding on three of these theories which the researcher deemed relevant to its scope of study. These include the Human Needs Theory, the Social Capital Theory and Relative Deprivation Theory.

2.2.1 Human Needs Theory

The Human Needs Theory is based on the works of John Burton. The theory argues that conflicts and violence are the result of unmet human needs. For instance, Burton (1990) argues that conflict is the culmination of frustration that builds up within an individual, due to their inability to meet their own needs. Danielsen (2005), arguing in support of Burton, cautions that human needs should not be confused with subsistence needs. While a number of conflicts have been fought over subsistence needs, which include food, shelter and clothing, many aggressors cite inclusion, justice, identity, protection and other psychosocial needs as their reasons for engaging in acts of conflict.

Further, Danesh (2011) argues that scholars and practitioners in peace and conflict do not value the human needs theory as they view conflicts and human needs as isolated subjects.

However, it can be an effective tool in the detection of potential conflicts as it focuses on the source of conflicts. It can also be a useful mediation tool as it emphasizes the commonality of humanity (Danielsen, 2005). Critics of this theory, such as (Danielsen, 2005) argue that there are is no consensus among its proponents on what constitutes a human need or if there is a hierarchy, and if so, what needs rank higher than others. There is also the view that conflicts these days are driven by 'greed and instrumentalism' by political leaders (EISSR, 2017). Essentially, politicians have consistently used conflicts as a tool to achieve political ends.

Human Needs Theory of conflict is underpinned by biological drivers, such as hunger and shelter, when compared to the two other theories proposed further down in this thesis. It speaks to physiological as opposed to psychological or perceived needs. Existential needs are non-negotiable and cannot be postponed or ignored (Burton, 1990). Mitchell (1990), supports Burton's perspective when he asserts that conflicts arise when non-negotiable needs are suppressed, ignored and not addressed. This might explain why humans might engage in violence when their ability to meet these needs is compromised. While there was consensus at the 'Seville Conference of 1985 on Violence' that conflict and violence are not innate to humans, events since then at personal, national and international level offer a contrary opinion. Geopolitical contestations at the global level are a testament to this assertion. Certain countries have threatened acts of aggression or violence against others. For instance, Egypt threatened to take military action against Ethiopia over the Nile which is critical to its existence. When pushed to the wall, it appears that humans will consider taking the violent route. Thus, according to this theory, violence lies at the terminal end of reasonable peace-building mechanisms such as arbitration and negotiations. This study applied this theory in

its work to show that herders were driven by existential needs in when carrying out acts of violence in the study area. This brings us to Social Capital Theory, which by and large, posits that competition for resources creates an 'us' versus 'them' world view.

2.2.2 Social Capital Theory

The term 'Social Capital Theory' has been in use for the past fifty or so years, having been proposed by Henri Tajfel and John Turner. Its application has expanded to include such disciplines as economics, sociology and psychology. It is defined as 'features of social organisation such as networks or norms' that facilitate day to day human interactions (Bowd, 2008). At the heart of the workings of the concept of social capital, is a culture of reciprocity which is critical to the building of trust among members of a given group or community. Acts of kindness among members help create a sense of oneness as each individual feels indebted to the rest of the group. Some scholars have even gone ahead to attribute economic prosperity, political stability and social cohesion to the presence of strong social ties. Collier (2014) refers to these strong ties as 'mutual regard', which he describes as a state of care among members of a group that goes beyond mutual benefits. In other words, it extends beyond reciprocity to become a deliberate action by an individual meant to assist another member of his/her society. He reckons that this is the rationale behind such programmes as the welfare state found in some developed nations.

In the context of conflict management, Bowd (2008) presents two types of social bonds that are important in holding a society together. On one hand, bonding social capital is inward-looking and is responsible for a feeling of togetherness among similar members of a group. On the other hand, bridging social capital is whereby members of different groups reach out to one another in an attempt to 'build bridges' and attain cohesiveness. Bowd (2008) further

argues that, societies laden with conflicts are characterized by high bonding social capital which creates a sense of 'us' verses 'them', low bridging capital and low vertical and horizontal (synergy) linking between state and communities. These societies are characterized by corruption, oppressive regimes, exclusion and inequality. He proposes education on citizenship and human rights as one of the ways in which social capital can be restored in a society in which it had broken down. He also recommends deliberate creation of links among groups where relationships have deteriorated.

According to this theory, peaceful coexistence, essentially involves striking a balance between the needs of a given community or grouping and those of a neighbouring one. This is what is explained by bonding social capital and bridging social capital. Competition for resources may push a community to be inward looking, insular and to adopt 'an attack position'. This theory cautions against this thinking but instead encourages 'building bridges' with the adversarial communities. Social capital theory roots for cooperation among members of a society in order to maintain cohesiveness. As such, in the context of the marginal areas such as Tiaty, it would be more beneficial for everyone to cooperate in environmental, political, social and economic spheres than to engage in warfare. This study was curious to find out whether or not the community in Tiaty cooperated or was in competition with its neighbours in the management of both pastures and water resources.

2.2.3 Relative Deprivation Theory

The Relative Deprivation Theory was first proposed by Samuel Stouffer, a Social Psychologist in the mid twentieth century. Samuel argued that social comparisons, as opposed to absolute standards, were the basis upon which individuals shaped their judgments on issues (Pettigrew, 2015). When an individual or a group judges itself as disadvantaged

relative to another that is regarded as a relevant reference, and then it can evoke feelings of anger, frustration and resentment. Additionally, Gurr (2011) defines relative deprivation as the difference between value expectations and value capabilities in a given society. The higher this discrepancy is, the greater the level of frustration and the risk of outbreak of conflicts and violence. He further argues that in the cases of a marginalised or minority ethnic groups, lack of political participation and economic prosperity serve to accentuate the relative deprivation that is already in existence. This may worsen the situation and may lead to more incidences of conflicts and violence. While Gurr's thesis seems solid, criticism has been levelled against his arguments for failing to distinguish between individual and group sense of deprivation. He is also accused of ascribing a group's perception of deprivation by using estimates of perception of deprivation of individuals in that group, thus conflating the two issues and creating confusion (Walker & Pettigrew, 2011). The main thrust of relative deprivation is that conflict arises out of a perception of marginalisation and exclusion. This study was keen on establishing whether or not feelings of marginalisation and exclusion played a role in fomenting violence and conflicts in the area. For instance, residents have in the past claimed that conservancies created in the area took away their ancestral land without compensation and with little consultation (Greiner, 2012). It was also keen to find out what role this and other acts such as distance from the centre of power, lack of basic amenities such as water and schools, had played in fomenting feelings of marginalisation and neglect.

2.3 Empirical Framework

2.3.1 Global and African Perspective

According to Bob & Bronkhorst (2010), humanity enjoys a number of benefits from the natural environment which include regulatory, regenerative and aesthetic services. However,

humanity has transformed the natural environment through its ability to exploit and utilise its resources. In 1972, the Stockholm Conference noted that human economic activities had been altering nature by spewing pollutants into water, air and soil in the two preceding decades; depleting unrecoverable resources and disrupting the delicate balance that existed between flora and fauna (Rockefeller, 1996). This compromised the earth's ability to take care of humanity itself. Rapid population growth, especially in the developing world, was also noted as a new challenge to the provision of clean and portable water. Additionally, human economic development endeavours, most of which use water as a raw material, have also compromised the ability of natural sources to supply water sustainably (Allaby, 2000).

These challenges highlighted 45 years ago have deteriorated over time, especially in the developing world. Population has tripled or quadrupled in some developing countries, piling pressure on land, forest and water resources. Forests, in particular, have been the hardest hit with a marked reduction from 31.6% of the global land area to 30% between 1990 and 2015 (FAO, 2018). This reduction has had a negative effect on rainfall intensity and amount as well as a rise in temperatures. A reduction in rainfall, coupled with the loss of forest cover means that the supply of fresh water for domestic, human and industrial use, has been dwindling overtime. Forests hold back water by reducing runoff and evaporation during hot weather. Thus, forest degradation not only affects food supply through loss of soil cover and reduced rainfall, but also affects the amount of water available for humanity (FAO, 2018).

One of the most important gifts of nature is water. Freshwater makes up a paltry 3% of all world's water, the rest being marine (Ngaira, 2002). Of these fresh waters, 75% of it is trapped in glaciers and icecaps in the poles and summits of mountains, 24.7% is groundwater and the rest is surface water (lakes, rivers and springs) (Balusubramanian, 2015). In spite of

the little supplies that continue to dwindle by the day, human activities continue to affect the sustainable management and supply of clean water. Trans-boundary conflicts over access and use of water resources such as one between Brazil and Paraguay over the Paraná River, are beginning to emerge around the world (Petersen-Perlman, Veilleux, & Wolf, 2017). However, as noted in Carius, Dabelko, & Wolf (2004), many of these contestations have not escalated into protracted, armed conflicts. Most conflicts over water remain confined to the local level where confrontations over access and use of water often turn violent, often with loss of lives involved.

Africa, whose majority of land mass straddles the tropics, has been adversely affected by changes in climate and land use driven mainly by a burgeoning population. Food and Agriculture Organisation of the United Nations (2016) reports that 70-80% of forest conversion in Africa is for agricultural purposes. Marginal areas such as the Sahel that are vulnerable to droughts and famine have witnessed the increase in frequency over the years with the areas closest to the Sahara desert undergoing rapid desertification (Speidel, Weiss, Ethelson, & Gilbert, 2009). As a result, these pastoralist communities have been forced to walk longer distances in search of water and pastures for their livestock.

Additionally, many regions of Africa have historically been vulnerable to social-economic challenges such as recurring droughts, over and above the effects of climate change. Such places include the Sahel, the Horn of Africa and other relatively dry parts of the continent. It is estimated that close to half of the countries on the continent will experience water stress by the year 2025 (UNEP, 2010). Freeman (2017) contends that climate change is serving to accentuate an already dire problem. In view of this, the heavy reliance on rain-fed agriculture

will put many at risk of starvation, which in turn will precipitate conflict, and thus compromise the security of these countries.

Kenya faces a myriad of challenges stemming from rapid population growth, unplanned urbanization and poor resilience to the effects of climate change (Agwata, 2005). In fact, high population growth over the years has led to the conversion of precious forest land for agricultural production and settlement (Ovuka, 2000). Hence, at the moment, the country is faced with severe water and food shortages, a challenge that is aggravating poverty levels among communities (Agwata, 2005).

The pervasive and endemic corruption in Kenya also exposes the country's natural resources to unfeasible exploitation (Hope, 2014). This takes place through venal acts such as illegal acquisition of public land and other goods, rent seeking and bribery as well as the overvaluation of tenders. This is also exemplified by the country's high rank on the Corruption Perception Index of 2017. Kenya ranks high on both African and world rankings, only fairing better than failed States such as Somalia (Transparency International, 2017). Corruption carts away scarce financial resources for private use that could be used to address water scarcity. For instance, major dams under construction currently were planned 35-45 years ago, such as Thwake Dam, which had been proposed in the 80s (AfDB, 2010). However, the delay in their construction, was not necessarily due to lack of funds. Some donors such as the World Bank, have previously avoided projects over corruption allegations levelled against officials charged with their implementation (The World Bank, 2011).

Another example is the unbridled forest excision that took place during the reign of the previous governments. Politicians and businessmen connected to government officials were

awarded titles to forest land. Investigations conducted by a taskforce on the Mau Complex restoration found out that most excision took place between 1999 and 2002 (Office of the Prime Minister, Kenya, 2009). As a result, the demarcation opened up forests to invasion by ordinary people who had been barred from farming or living in the forests. While indigenous communities had utilized forest resources sustainably for hundreds of years, the invasion by other communities led to destruction of the forest. These excisions, together with effects of climate change, such as in the case of the Mau and adjoining forests, have led to the drying up of seasonal rivers and the reduction in volumes in perennial ones. The volume of water flowing in rivers such as Molo, Mara and Perkerra that rise in the Mau, have dwindled in the recent years. As a result, communities living in the downstream that rely on water from these rivers, have had their livelihoods compromised. Climate change has led to erratic rainfall. When it rains, the rainfall is often torrential and results in soil erosion since communities living in these areas have also intensified their farming practices (IPCC, 2018).

The long-term effects of corruption on the environment have been far reaching. This is seen in situations whereby, authorities have attempted to reclaim the forests. It has often led to conflicts and violence among pastoralists and between pastoralists and farmers. Most regrettably, it has also resulted in state-led brutality against the illegal forest invaders (Muigua, 2014). This has taken place in the Mau Complex and the Cherangany' Hills forests. In 2015, the World Bank withdrew its support for the resettlement programme owing to the violence meted out on farmers by State agencies.

In Kenya, there is a plethora of evidence to show that corruption has led to the furtherance of incidences of conflicts and violence. This in turn, has led to heightened insecurity in these areas. Corruption, in its own right has played a role in creating an environment in which

water-related conflicts can fester. As shown here, unsustainable utilisation of catchment areas and failure to put in place long-term mitigation measures, such as dams, have led to the current situation. While climate change and population growth may have a bigger role, in the vulnerability of these areas in Kenya, corruption has exacerbated the dire situation.

Since the turn of the century, contestations over access and use of water and land have often degenerated into violent conflicts in the Mau Narok area (Nabutola, 2010). The most recent cases were reported in 2018. Similarly, in the Central Kenya region, excessive water abstraction from rivers flowing from Mount Kenya has pitted the residents against fellow countrymen living downstream. A rapid population growth in the area, climate change and poor farming practices have contributed to reduction of both surface and groundwater available to the population. Water abstraction is also driven by the need to irrigate farms since rain-fed agriculture is no longer tenable or profitable. In sum, at the heart of conflicts in Kenya and the region at large, is competition for dwindling land, water and forest resources. Thus, prudent use natural resource, part of which involves conservation is required to forestall or resolve endemic conflicts in these areas. Studies and reports reviewed this far point to a likely relationship between conflicts and a rapid population growth, climate change and endemic corruption. The main thrust of this thesis is that water conflicts can be mitigated by environmental conservation.

The following section shall examine the interaction between water-related conflicts and security management, starting at the global level before narrowing it down to the situation in Kenya.

2.3.2 Water Conflicts and Human Security

Millions of people in the world today live in places that are vulnerable to the vagaries of climate change such as coastal areas and low lying islands such as the Maldives (IPCC, 2018). It is estimated that by 2025, half of the world will live in places with severe water stress and by 2040, everywhere in the world; demand for water will exceed supply (Brundtland, Ehrlich, Goldemberg, & Hansen, 2014). These challenges are undermining human security and peaceful coexistence by precipitating conflicts among communities particularly in arid and semi-arid lands. Competition for scarce resources such as pasture, water and other ecosystem services of economic value is getting more intense and protracted, culminating in armed conflicts (Brundtland, Ehrlich, Goldemberg, & Hansen, 2014). Extinction of critical resources such as forests have been found to have led to the demise of certain ancient societies such as the inhabitants of Easter Island, in the South East of the Pacific Ocean (Diamond, 2005). Muigua (2011) notes that the scarcity of both renewable and non-renewable resources contribute to the eruption of conflict and violence. He cites agricultural land, fishing grounds, water sources as some of these resources. He also argues that, in the wake of scarcity, powerful individuals with economic interests may take advantage of the situation to 'capture' the remaining resources. This action may trigger conflict and violence as marginalised groups engage with them over access of these goods and services. Muigua's views are in tandem with the main argument of this thesis. He also highlights the issue of 'resource capture' by the powerful, in an environment of scarcity. In other words, scarcity breeds other societal vices such as corruption and greed.

Ali (2005) on the other hand, argues that past civilizations that collapsed owing to destroying their own environment are cited only as examples with the emphasis laid on social or moral

reasons. He notes that there is a tendency to relegate environmental issues to the back burner in the conduct of global affairs that concern peacebuilding and reconciliation. Furthermore, he contends that environmental challenges can act as a common ground upon which warring ethnic communities/nations can begin reconciliatory efforts. However, this is not always the case since natural resources are inelastic.

Generally, conflicts occur where human endeavours for a livelihood encounter natural limits. According to Bob and Bronkhorst (2010), conflicts occur where the stakeholders of a particular natural resource have different ambitions or goals and they fail to reach an agreement. He identifies a number of issues that could trigger conflict, ranging from the perception or actual scarcity of environmental goods and services, to historical injustices regarding rights to land or water. He singles out climate change as a current and future threat to national security and a likely trigger of future conflicts.

Climate change is upsetting the ecological balance by exacerbating the severity of certain natural occurrences such as droughts (IPCC, 2018). Droughts on their part, contribute to water and food shortages through the reduction in the amount of rainfall which leads to many challenges *inter alia*, the depletion of groundwater. Depletion of groundwater has been cited as one of the many reasons that precipitated the eruption of violent conflicts in several countries (Robins & Fergusson, 2014). For instance, conflicts in Yemen, Somalia and Libya play out in the open with a political dimension as is the norm. However, Robins & Fergusson (2014) argue that the exhaustion of groundwater in these countries exacerbated the humanitarian conditions during past conflicts through displacements due to starvation and malnutrition. The authors achieved this fete by combing through secondary data on the conflicts in the Middle East. The breakdown of law and order and destruction of the economy

meant that, in the case of Yemen for instance, the government lacked the technical and financial ability to contain the situation by putting in place measures such as trucking of water to urban residents. Furthermore, they assert that countries with predominantly rural populations are especially at risk as their livelihoods and existence is dependent on ground water sources. However, this thesis does not rule out the hand of global powers in interference with the internal politics of Yemen and influence on how matters turned out.

Groundwater scarcity is as a result of land use changes, desertification, demographic pressure and climate change/variability. Famiglietti (2014) contends that this creates a vicious cycle particularly in arid and semi-arid lands whereby wells run dry and deep ones, some going as far as 2 kilometres, are sunk. Since only wealthy people are able to afford this, poverty levels rise and the potential for eruption of conflict heightens. For instance, groundwater scarcity in rural Syria forced farmers especially young men to abandon their farms and move to the city (Famiglietti, 2014). This was cited as a major contributor to the civil war. The sudden arrival of desperate and hungry young men provided a ready source of fighters for the warring factions (Gleick, 2014: Fountain, 2015).

According to Ahmed (2017), the rise of the militant gang, Boko Haram may have coincided with the decline of Lake Chad from 25,000km^2 fifty five years ago, to 2,500km^2 currently. The drastic decline in the size of the lake has largely been attributed to the effects of climate change. Thousands of herding communities who depended on the lake in Chad, Nigeria and Cameroon, were left without a source of livelihood. The militant group took advantage of the remoteness of the area to terrorize the residents and in some instances, offer services not offered by the government. It has been established by investigative reporters that the militant group may have given the women and girls it abducted, a modicum of freedom. This study

in no way disputes the role played by international politics, especially those revolving around oil, in sponsoring terror and other forms of violence. However, a closer look into the North-Eastern Nigeria, Yemen and Syria, shows that water and pasture scarcity, did play a role in fanning the violence (Ahmed, 2017: Famiglietti,2014). The depletion of both surface and groundwater sources has played a major role in the escalation of violence. This study intends to bring out this phenomenon to the attention of policy and decision-makers.

The argument in the Organization for Economic Cooperation and Development (2005) report is that conflicts over environmental resources do possess a negative feedback mechanism in the sense that they keep recurring after the initial outbreak. This is caused by the degradation of the environment as the fighting takes place in some cases due to neglect or exploitative behaviour or sabotage by the warring communities. This is often the case in marginal and fragile areas such as arid and semi-arid lands. As mentioned earlier, a growing population is one of the root causes of these challenges. While fighting may have been triggered by an event unrelated to the environment, environmental factors such as the destruction of key watering points or overgrazed pastures may worsen the initial conflict. However, in such cases, these areas are often vulnerable to environmental challenges such as drought and famine *ab initio*. In certain cases, especially where large and vulnerable populations are involved, a path of negotiations over access and use of these resources is normally pursued (Ali, 2005).

Ali presents two opposing views when he asserts that conflicts over the environmental resources such as water are so important that adversarial communities or nations come together to find permanent solutions. However, he decries the fact that, conflicts over access to environmental goods and services do not make up part of the global agenda since they are

viewed as too basic and unimportant. Studies, such as one by Famiglietti (2014), predict that conflicts over access to water or land could escalate from regional to international levels in the future. Thus, it is likely that nations will find it hard to negotiate with neighbours over access to water or land as demand will greatly overstretch supplies contrary to the first argument brought forward by Ali. There will be pressure to pursue armed confrontations as showcased by the conflict over the Nile between Egypt and Ethiopia. However, the two adversarial sides found it wiser to negotiate over the use of the resource, as observed by Ali.

Diep et al, 2017, observed that water service providers in the Middle East and North Africa struggled to provide steady and reliable water to urban residents in this region, after the outbreak of the conflict known as the Arab spring. The conflict in this region made it harder for people to access water sources, either because of blockades or destruction of water sources such as dams by the warring forces. There was also the interference of electric supply needed for pumping. However, they noted that certain vulnerabilities to water scarcity, such as a rapid population growth and urbanization, climate change and over abstraction of ground water, preceded the conflict. They arrived at these findings by poring through old data from various sources.

A study commissioned by retired military officers to investigate the link between water scarcity, conflicts and insecurity in water-stressed/scarce nations, corroborates the findings of the studies cited above. It was informed by the rising threat of water stress to global security and stability. The study analysed events in the preceding five years in the study locations, guided by the known factors that precipitate a conflict. Water was seen as both a principle cause of unrest and/or a weapon of war. The report also shared Ali (2005) findings

mentioned above, whereby water is seen as a reason for warring factions to begin negotiations for peace (McQuaid, Jackson, Thuringer, Hanson, & King, 2017).

In another study, researchers explored the complex relationship between water, climate and political conflict. They established that certain 'stressors' such as floods and droughts attributed to climate change, may have led to political conflicts in the affected areas. These areas were already experiencing water shortages when the extreme weather events occurred. With the help of previous studies carried out in Syria, and Yemen, they established that water stress may have enabled the eruption of violence in these two countries (Ligvoet, Knoop, & de Bruin, 2017).

Despite there being pointers in the natural environment to the likely relationship with the occurrence of violent conflict, a number of scholars remain unconvinced. According to Martin (2005), there is no consensus among many researchers on whether or not environmental factors do trigger the emergence of conflicts. The author cites several scholars (Gleditsch, 1998; Conca, 2002; Matthew, Gaulin & McDonald, 2003) who are of the view that conflicts arise out of the interaction of underlying social, economic and political grievances. Those with opposing views are of the opinion that conflicts are triggered by competition for scarce resources. Martin uses a case study of a refugee camp to show that conflict over resources is socially constructed. In other words, there might be scarcity of resources shared within a community or among many. However, the decision to turn the scarcity into a protracted conflict, lies with the people, more so the leaders. In sum, Martin goes to great lengths to disapprove a key position advanced by this thesis. When faced with scarcity of a resource such as water, one does not have the 'luxury' of choice.

Furthermore, in his view, adversarial communities can choose to escalate or de-escalate a misunderstanding, that is, they can choose to cooperate or compete with one another. Hence the argument about social construction. Nevertheless, this thesis finds this notion inaccurate when analysed in the context of the Human Needs Theory proposed by John Burton. Essentially, this theory argues that human needs are intrinsic to human nature such as the need for food, water and shelter, and are therefore not socially constructed. They are real and material goods and not a matter of perception. This thesis supports the position taken by John Burton. The researcher is not persuaded by Martin's argument. It is likely that, when faced with an existential need, there is a likelihood of engaging in violence purely for survival reasons. The perspective of social construction with regards to conflicts is abstract and intangible. This is similar to myths and beliefs, some of which are drawn from religion.

Environmental insecurity, a 'state of loss of environmental resources, both qualitatively and quantitatively, has been observed to be a trigger of conflicts among competing users (Thuo & Waswa, 2006). They argue that environmental insecurity is occasioned by the erosion of the earth's carrying capacity by resource scarcity and environmental degradation. On the one hand, regarding carrying capacity, Allaby (2000) associates it with the number of individuals of a species that can comfortably live in a given environment without bringing about degradation. Thus, from this view one can infer that the potential for the eruption of conflicts is likely when competition for resources heightens as the carrying capacity is exceeded. On the other, Allaby (2000) maintains that the human population has not exceeded the earth's carrying capacity. While these two views are based on facts, the marginal areas such as the arid and semi-arid lands, which were previously under populated, are at the risk of conflict as they now outstretch the resources available to them. As such, they are vulnerable to

incidences of conflict as the population continues to grow and the land gets more depleted. This creates a vicious cycle with a powerful and ever growing negative feedback loop.

Studies cited in this thesis go against the established positions that economic, social and cultural factors are the only triggers of conflicts. These studies, drawing from secondary sources such as satellite mapping of groundwater resources, have shown that shortage of portable water can precipitate conflicts within nations.

2.3.3 Environment and Water Related Conflicts in Kenya

Conflicts are endemic to the North Western, Upper Eastern and North Eastern parts of Kenya. It is estimated that up to 14% of Kenya's population lives in these largely arid and semi-arid parts of the country which make up to 80% of the land mass (Schilling, Opiyo, & Scheffran, 2012). In addition, they point out that communities living in these areas face political marginalization besides natural calamities such as recurrent droughts and livestock diseases. However, there is no consensus on whether or not there is a link between recurring droughts, lack of pasture or water and incidences of conflicts and violence. Literature reviewed this far does not show a direct causal relationship. However, Theisen (2012) uses historical data on recorded conflicts to demonstrate that land pressure is the underlying cause of interethnic violence in the densely populated and cosmopolitan highland areas. On the other hand, climate variability exemplified by the erratic rainfall, was seen as the main driver of conflicts and violence in the dry ASAL areas (Theisen, 2012). Indeed, grievances over land can be traced back to the colonial era whereby communities such as the Maasai lost up to half a million acres which they never got back. Currently there are efforts to try and get back this land. These areas also hold 70% of domestic animals such as cattle, sheep, goats

and camels; and 90% of the wildlife (GoK, 2017). In light of erratic rainfall and recurring droughts, there is yet to be an explicit link between these occurrences and climate change.

Empirical data reviewed by Scheffran, Brzoska and Kominek (2012) showed no consensus on the relationship between climate change and violent conflict. The three found out that some studies showed a link while others showed either a tenuous or no link at all. In the case of Kenya, the researchers found out that there exists the possibility of conflicts over water and pasture in future, driven mainly by changing rainfall patterns. For instance, a study carried out in parts of Marsabit County revealed that pastoralists engaged in warfare among themselves during the rainy season or in anticipation of the rains, ostensibly in an effort to restock herds lost during the often lengthy dry periods (Adano, Dietz, Witsenburg, & Zaal, 2012).

Pastoral communities' livelihoods are closely tied to the environment in that they rely on naturally occurring pastures and water sources for their livestock. Droughts, which are occurring more frequently and severely, are increasing their vulnerability to food insecurity, forcing pastoral groups to relocate to other areas (Oxfam, 2017). When they move around, they encounter rival groups or invade land belonging to marginal farmers which triggers violent conflicts. Thus, in Kenya's case, rainfall characteristics such as reduced amounts and increased variability could be indicators of potential conflicts particularly in the arid and semi-arid areas. A confluence of land-use changes, a rapid population growth, climate change and variability have coalesced to present populations in the arid and semi-arid lands with considerable existential threats. For instance, a rapid population growth in the highland regions, coupled with the aforementioned unreliable rainfall, have forced residents to ramp up abstraction of water from rivers such as Ewaso Ng'iro (Notter, Macmillan, Viviroli, &

Weingartner, 2012). Smallholder farmers, urban centres and large-scale commercial farmers are the main culprits, with the study showing that the river ran dry after flowing for 90 kms from the catchment area (Notter, Macmillan, Viviroli, & Weingartner, 2012). Ewaso Ng'iro North is a major lifeline for communities living north of the Mount Kenya region where it provides water for both human and livestock use. Reduction in the amount of water flowing in the river increases competition for water and pastures especially in the dry season which could trigger violent conflicts among communities living in Isiolo, Laikipia and Samburu.

This is not the only case of dwindling rivers in the country. It has emerged that lakes in the Kenyan Rift valley have risen due to continuous and abated deposition of soil, raw sewage and other debris. The increased turbidity of the lake has reduced light and air penetration into the lake, which in turn affects the survival and breeding behaviour of aquatic life. As pointed out earlier, the rivers flowing into these lakes have reduced in volume, but the little that is left is laden with debris. Lake Baringo ecosystem, a key source of water, pasture and alternative livelihoods for the surrounding communities, faces such similar challenges. The lake's depth has reduced over the years from a mean depth of 8 metres in the 1970s, to 2.5 in 2003 (Hickley, Muchiri, Boar, & Britton, 2004). While it is not as threatened as its peers Nakuru and Naivasha, its disappearance or massive destruction would lead to a loss of a lifeline. The fact that it is a source of alternative livelihoods through tourism and fishing, would make the loss even more far-reaching.

The following section explores the security situation in the Arid and Semi-Arid Lands of Kenya.

2.3.4 Manifestation of Insecurity and its Implications in the Arid and Semi-arid Lands

Insecurity manifests itself in a number of ways in the arid and semi-arid in Kenya. The most common manifestation of insecurity in these areas is cattle rustling. According to Schilling, Opiyo, & Scheffran (2012) cattle raiding has been going on for millennia. It was carried out in the past to restock herds killed in droughts, expand territories and to raise the social status of the warriors. Lately, however, cattle rustling has been linked with commercial interests (Mkutu, 2008). Stolen livestock is now smuggled to international markets or in large urban areas of Kenya. Politicians and other powerful individuals, have been linked to the trade in stolen livestock. This illicit trade also takes place across National boundaries. At one point, the President of Uganda called for the apprehension of thieves who stole cows belonging to him.

As a result, cattle raiders have upped the ante on violence and brutality meted out on communities. The prevalence of small arms and light weapons in these areas, aided by porous international borders and absence of security forces, is a major contributor to insecurity in the Arid and Semi-Arid Lands. In light of this, the security situation in arid and semi-arid areas has deteriorated in the past decade. Herders are now motivated by the prospect of profits. As such, the recurring droughts are only serving to exacerbate the insecurity, as the livestock available for stealing is in short supply.

The growing insecurity has also had other negative outcomes among pastoral communities. It was also established that cattle rustling compounds the problems faced by pastoral communities by limiting their mobility (Kaimba, Njehia, & Guliye, 2011). Pastoralist communities have constantly moved in search of pastures and water for their livestock.

However, the fear of attacks, which as pointed out, have become more vicious, is acting as a deterrent to these movements. These immobilised communities lose their livelihoods and it increases their vulnerability to poverty and diseases. The confinement to one area also means that they overuse the water and pasture available to them in that area, which creates another challenge and engenders the cycle of violence.

2.3.5 Conflicts, Conflict Management and Security

Thuo and Waswa (2006) link resource conflicts to contestations over access, control and use of environmental goods and services. These include land, water, minerals, pastures, animals and plants. They argue that ideally, all humans have equal access to these goods and services but economic, social and political systems create artificial scarcity. However, in capitalist states, public goods and services are commandeered for private profit by a few individuals or corporations, which results in inequality and poverty in society. In other words, in an ideal world, everyone is entitled to access to environmental goods and services. However, private ownership, a key tenet of capitalism, ensures that a few individuals take possession of these goods and services and hence control their access and use. This is not to say that communally-owned resources are shared equally and that users do not fight over them, but rather it is to decry the privatisation of public goods, a phenomenon that has lately spread to communal resources such as grazing land (Njagi, 2016). If one school of thought views conflicts as contestations over scarce resources, as shown above, what then is conflict and security management?

According to Jeong (2008), conflict management applies a broad spectrum of methods to achieve its end. It may involve one-sided positions such as withdrawal from a conflict or the use of excessive force by one party to bring about submission of the rest. In other cases,

there is a lot of 'tacit or explicit bargaining' where warring parties strive to come to a mutual understanding through compromise and negotiations. Security then may imply the forestalling of conflicts through a number of strategies, of which, conflict management is one. Kilmann (1974) introduced two dimensions of analyzing conflicts, that is, on the basis of assertiveness and cooperativeness. Collaboration is both assertive and competitive while avoidance is both unassertive and uncooperative. Compromising is mid-way between assertiveness and cooperativeness while competition is assertive but uncooperative. Accommodation is cooperative but unassertive. In sum, both definitions are in agreement on the application of compromise as tool in conflict management. In the context of this study, compromise among warring communities presents a more appropriate conflict resolution mechanism. This is especially useful in situations where there are grievances, some of which might be historical. Compromise would ensure that recurring conflicts are brought to a mutually agreeable end (Thomas & Kilmann, 2010).

According to O'Leary, Amsler, & Kopell, (2010) resolving water conflicts is a collaborative engagement that involves all the relevant stakeholders with a view to finding solutions to natural resources use and allocations, contentions and other related disputes. The uniqueness of this, unlike other methods of conflict management lies in the incorporation of the environmental aspect in the dispute resolution process. Having looked at perspectives, definitions and the nexus of conflicts and violence, the following section shall look at the conceptual framework.

2.4 Conceptual Framework

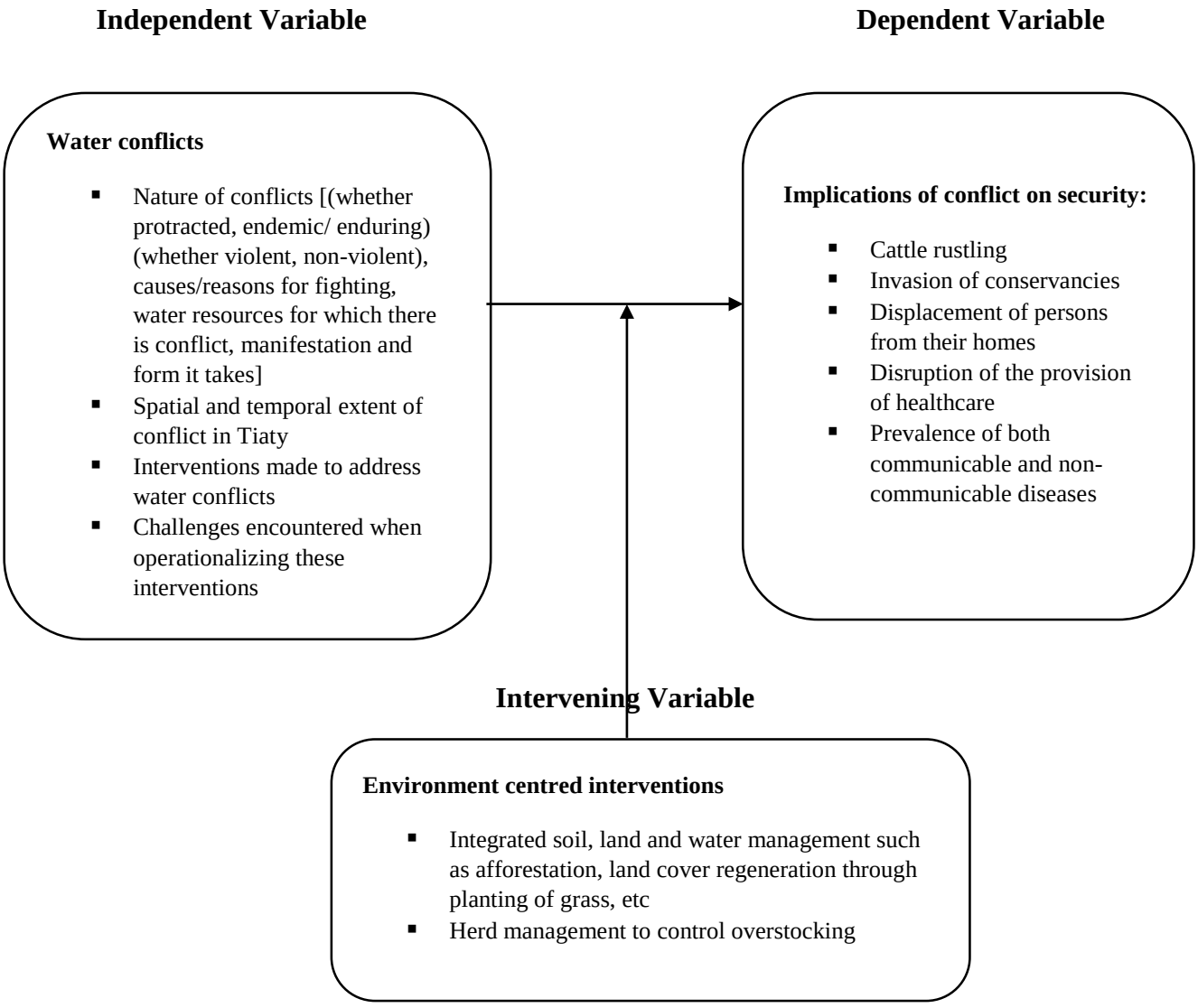


Figure 2.1 Conceptual Frame

The literature review in this thesis identified two gaps that were highlighted by several authors. For instance, Ali (2005) points out two keys issues that are at the confluence of security and water conflicts. First, he posits that using evidence from a previous conflict among Egypt, Jordan and Israel over the use of the River Jordan, that water related conflicts

portend such serious implications for human existence that they are resolved quickly and amicably. In the mid-1990s, the three countries had come together, while in midst of a conflict to resolve a dispute over the use of the waters of the River Jordan. Warring communities find it easy to come together and resolve a conflict when a lot is at stake, such as the total loss of life and livelihoods for all parties involved. Second, he observes that at the global level, conflicts touching on water, land or such other natural resource are not given their due attention they deserve. It is as if these kinds of conflicts are not viewed as important or life threatening. An earlier study had observed that, nations act when scarcity of environmental goods such as water, leads to social challenges across boundaries. It also observed that since there was no legal framework on how to deal with trans-boundary environmental issues, their resolution was hinged upon prompt and amiable negotiations between warring parties (Schwartz & Singh, 1999).

2.5 Conclusion

A majority of the literature reviewed, with few exceptions, did not explicitly link contestations over access to water conflicts and the emergence of incidences of conflict. Indeed, this thesis finds that there is an attempt among the authors reviewed, to attribute strife, conflicts, whether violent or not, to other factors such as political, social and economic as opposed to the environment. While this assertion holds to an extent, this thesis is of the view that natural resources such as water are at the heart of conflicts and that they manifest themselves as social, economic and political contestations. This is observed among communities whose livelihoods are hinged upon primary productivity such as subsistence farming and pastoral communities. This thesis also identified two critical gaps in the studies reviewed. One, most studies do not consider contestations over access to water a major reason for the emergence of conflicts. Two, in the instance that water conflicts do occur,

they are often resolved amicably and quickly by the warring parties. This was observed in cases involving international trans-boundary water conflicts. It is the aim of this study to push for similar prompt resolution of water related conflicts in the arid and semi-arid areas, within nations.

To this end, this thesis shall attempt to show that addressing environmental challenges such as soil degradation can forestall and indeed resolve some conflicts, especially those among marginal communities. This thesis proposes environmental conservation, as a method of forestalling or resolving conflicts and fostering security. Environmental conservation is heavy on cooperation among all stakeholders for it to succeed. Thus, it is an effective tool that achieves two goals. This is because it will require all the warring communities to work together to solve the issues affecting them. Conservation exercises such as planting grass and trees will eventually improve the situation. In a nutshell, this study has reviewed documents that strive to counter mainstream convictions on the eruption of incidences of conflicts and violence. Many scholars, as reviewed, suggest methods that are either political or economic. However, this study suggests that environmental conservation can forestall conflicts from manifesting themselves in this manner. This study seeks to highlight pertinent issues that are crucial to the sustainable existence of humankind. By asking hard questions on the health and sustainability of vital resources to the existence of human beings, this study shows a deep concern for the posterity of humanity on earth. It also sought to interrogate conventional ways of thinking and appreciating phenomena. For instance, the emerging approach to conflict which has been referred to as ‘biophysical’, is a controversial but eye-opening way of looking at the emergence of conflicts. Few, if any, appreciate the role access to water plays in the emergence of conflicts.

CHAPTER THREE:

RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter highlights all the activities, modalities and the outline of the entire study. It gives a detailed description of the study area, the research design, methods of data collection and data analysis and the interpretation of the findings.

3.2 Research design

A research design is an integral part of any meaningful research. It is intended to show how the major areas of a project work together with the aim of addressing its key objectives in an efficient manner (Kothari 2013). This study deployed a qualitative method of research, whereby key informant interviews were conducted. They involved gathering narratives from community leaders at the grassroots and as well as in-depth interviews from key stakeholders from the National government, County government and wildlife conservancies. The findings are discussed in the results and discussion section of the thesis.

3.3 Study area

Tiaty Constituency or East Pokot sub-County lies in Baringo County in the Central part of the Rift Valley region. Baringo is one of Kenya's 47 administrative and political units created by the Kenya Constitution which was promulgated in 2010. A County is divided into sub- Counties which in many cases, also follows the boundaries of Constituencies whose extent is determined by the IEBC. Baringo is the 14th largest County in Kenya with a surface area of about 11,015km^2 (CRA, 2011). It borders eight counties namely; Nakuru, Laikipia, Uasin Gishu, Elgeyo Marakwet, Kericho, Turkana, West Pokot and Samburu. The County is mainly lowland, punctuated by hills such as the Tugen Hills which run in a north to south

direction. The Kerio Valley lies to the West of the Tugen Hills, while Lake Baringo, a freshwater lake is found to the East. Rivers in Baringo drain mainly into the Kerio River or into Lake Baringo or Lake Bogoria, a saltwater lake known for its large population of flamingoes and hot springs (Chebet, 2018). A large part of the County is semi-arid which receives less than 600mm of rainfall per annum (Baringo CIDP, 2013). The southern part of the County, however, is the exception since it receives between 1000-1400mm of rainfall per year (Ayugi, Wen, & Chepkemoi, 2016). Tiaty constituency lies to the North of the County. It is mainly a low lying area that receives low rainfall and regularly suffers from drought. It covers an area of about 4,516.8km^2, which makes it larger than many mid-sized Counties such as Kakamega or Kiambu (Baringo CIDP, 2013). It is a semi-arid to arid area that slopes in a northerly direction. It is bounded by the Laikipia plateau to the East and the Rift Valley to the West. The dominant vegetation in the area is thorn-bush savanna.

A large part of the land is communally owned and very few people possess title deeds since much of it has not been demarcated. The main economic activity of the people in this sub-county is pastoralism, with the community raising mainly cattle, sheep and goats. Small scale mining of Opal also takes place in the sub-County with exploration for geothermal power being undertaken by Geothermal Development Company (GDC) at Silale. Tourism is also an important activity in the County. Ruko and Kaptuya are conservancies located in the sub-county which attract tourists who also visit Lake Baringo in the neighbouring Baringo North sub-County (Greiner, 2012).

Tiaty made an ideal location for the study since it bares quintessential characteristics that were the focus of this study. It is largely an arid and semi-arid area as described above with few permanent sources of water and suffers from recurrent droughts. In the recent past,

sporadic episodes of conflicts have been witnessed in the area on nearly an annual basis. A rapid population growth rate, a poorly educated populace and few alternative livelihoods also contribute to the choice of Tiaty as an ideal location of study. The conflict transformation approach by the government has been the use of excessive force through the deployment of the paramilitary police. This study intends to interrogate the viability of conservation as an approach to conflict transformation. To achieve this, the study looked into the contribution of conservancies that are located in the constituency towards resolving water conflicts. In sum, a combination of geographical, cultural and political factors made Tiaty the location of choice for the study.

3.4 The population of the study area

Baringo is inhabited mainly by the Tugen, a sub-tribe of the Kalenjin community and the Pokot. There are also small minority communities who include the Ilchamus, Kikuyu, Turkana and Nubians (Baringo CIDP, 2013). The county is generally sparsely populated with inhabitants estimated at 751,000 in the year 2017 (KNBS, 2018). According to the latest estimates by the County government as at 2017, Baringo's population was largely rural, with only 11% of the residents living in urban areas. Levels of poverty are also some of the highest in the country with up to 60% of people living below the national poverty line (CRA, 2011).

Tiaty/East Pokot, the largest sub-County, is also the most populated with the 2017 estimates standing at 173,429. It is mainly inhabited by the Pokot with pockets of minorities such as the Ilchamus found in the southern fringes of the sub-County. It is also a largely rural sub-County without a major urban Centre. East Pokot has the highest illiteracy rate in the county at 76%. Social-cultural challenges such as early marriages and female genital mutilation are prevalent possibly because of the high levels of poverty and illiteracy (Baringo CIDP, 2013).

3.5 Sampling frame and sample size

The study deployed the purposive sampling method, as described in Mugenda and Mugenda (2012), whereby key informant interviews were conducted on individuals who the researcher deemed as possessing knowledge on conflict, security and environmental issues in Tiaty. They included: the County Environment Officer, the Environment Officer in charge of Tiaty sub-County, several Ward administrators, Ruko, Kaptuya and Ng'enyin Conservancy leaders. The study also included key members of the local community in order to get their perspectives and experiences of the research in question.

Table 3.5 Key Informants

Potential Interviewees	Sample Frame	Sample Size
Ward Administrators	7	4
Community Leader (one in each ward)	7	7
Conservancies manager	3	3
County Environment Director/Officer	2	2
Total Respondents	**19**	**16**

3.6 Data collection techniques

3.6.1 Interview Guide

Primary data was collected chiefly through in-depth interviews with relevant stakeholders. The researcher used a voice recorder as well as shorthand notes, to capture the information shared by the key informants. Interviews were held with both National and County government officials, local leaders and conservancy managers. There were also interviews conducted on local community leaders. The instrument covered the main objectives of the study, which included: the nature of conflicts, extent of conflict in the area, interventions made to address water conflicts and challenges encountered when addressing these conflicts.

3.7 Data Analysis and Presentation

Since this was primarily a qualitative study, the researcher went through the notes and listened to the recordings. He then went ahead to highlight the key issues raised by the key

informants. He built a narrative based upon a thorough understanding of these key issues and presented them thematically, guided by the four objectives. He also included remarkable comments or insights from the respondents *ad verbum* in the discussions of the findings and conclusions section of the thesis.

3.8 Ethical Issues

The researcher sought approval from the National Commission for Science, Technology and Innovation (NACOSTI) to carry out the research. He then proceeded to the field upon receipt of this document. He ensured that the data he collected was accurate and unbiased. The researcher conducted the study in an ethical manner, in that he was courteous and respectful of the respondents. The respondents were sufficiently briefed on the nature of the research and its objectives before being asked to give their verbal or written informed consent. The researcher ensured that sensitive and confidential information, especially if it could jeopardize the security of the respondents, was treated with care and discretion. However, the researcher did not encounter a respondent who expressed fears about his or her security, and therefore sought anonymity in that regard. However, the titles of the respondents are used when discussing a particular individual. In keeping with respect to the respondents' livelihoods, the researcher took care not to interfere with their daily schedules. As far as possible, he sought to fit his schedule with that of the respondents. Given that some of the respondents were deeply attached to their culture and traditions, the researcher was keen to observe them and avoid any *faux pas*. In order to achieve this, the researcher interviewed the respondents at their convenience after seeking prior consent from them.

3.9 Limitations

The general remoteness and relative spatial expanse of the study area proved to be a hindrance to the data gathering process. The researcher faced challenges due to poor transport and communication infrastructure in the region. It proved an uphill task, getting an interview with Ward representatives, since they were called into several meetings with the Baringo County Governor during the research period. In one instance, the researcher travelled a distance of a hundred kilometres, in order to secure interviews with two Ward representatives. In another instance, one respondent was gracious enough to meet the researcher at a central point, which greatly eased his activities. Failure to this, the interview may have had to be called off. However, the interviews were successful owing partly to the generosity of the respondents who spared their valuable time to grant the researcher an interview. The researcher also managed his time properly and never missed nor was he late for an appointment. In a nutshell, the researcher deemed the exercise fruitful.

CHAPTER FOUR:

RESULTS AND DISCUSSION

4.1 Introduction

This section presents the results of the study as collected from the qualitative data. The results of the qualitative study are presented through a comprehensive narrative based on the key informant interviews conducted.

4.2 Results of the Key Informant Interviews

4.2.1 Nature and Extent of Conflicts in Tiaty Sub-County

Types of Conflicts

Key informants varied their answers according to their individual understanding of this question. All 16 key informants reported that a cattle rustling was the main form of conflict in the area. Older respondents, mainly the community elders, also reported that petty theft was also rampant in the area. These offenders mainly targeted household items. However, it was pointed out that these incidents were isolated and were not necessarily tied to water or resource-based conflicts. That said, this finding on the nature of conflict corroborates the findings from the literature review (Adano, Dietz, Witsenburg and Zaal, 2012; Scheffran, Brzoska and Kominek, 2012). Some informants went as far as enunciating the causal factors, such as the example given below.

> *"…the main reason for fighting…when you look at it critically is because of resources…for example, land, water, pasture, disputes over boundaries are also very common"*
>
> (Resp. 1, Ng'enyin Conservancy, Baringo North).

A recurring response in the course of the interviews had to do with boundary or territorial conflicts. The boundary between Tiaty and Baringo North is contested and is a source of constant strife among residents of both sub-Counties. In fact, Tiaty sub-County is in

contention with all her neighbours over the delimitation of her boundary. These disputes percolate down to the ward boundaries within Tiaty sub-County. There were accusations levelled against residents of Tiaty on their propensity to shift the boundary outward, when drought and famine struck. This 'marking of territory' is done through the barrel of a gun and is informed by the prevailing weather conditions. The results of these actions are that, once the boundary has been moved, it is difficult to shift the boundary back to a mutually agreeable location. In turn, this creates another source of conflict among the communities.

Frequency of conflicts

Regarding the frequency of conflicts in the area, all the 16 respondents were in agreement that there have been heightened number incidences over the past five years. Conflicts have been occurring every year, with the worst attack being that of 2014, when two dozen security officers lost their lives at the hands of the herders from Tiaty.

> *"…initially, there was a planned way of sharing resources, so they were not there, until recently, like five years, that's when it has become very frequent, after every season, after every dry season, the conflicts occur, but initially, they were not there…"*
>
> (Administrator, Tiaty, Baringo County)

Demographic involved in Conflict

All 16 respondents also reported that young herders were mostly involved in the water and pasture related conflicts in the area. They are often young boys whose age ranges from as young 9 years to young men in their mid-twenties. However, most respondents reported that most herders were boys of school-going age, mainly those aged between 12-18 years.

Causes of Conflict

All the 16 interviewees were in agreement that the major causes of conflict in Tiaty were inadequate water and pasture. As such, territorial conflicts emerge as affected communities advance their territories to access water and pastures. While other causes such as incitement by politicians exist, the search for water and pasture emerged as a key driver of conflicts in the area and the source of rampant insecurity.

> "…*we call them moving bands, they are really into their livestock. They move around with their cattle and they would do anything to protect their cattle…"*
>
> (NEMA official, Baringo County)

In the past few years, recurring droughts have exacerbated the water-related conflicts, as communities clashed over the few surviving water sources. Communities also overgraze the few blades of grass and shrubs that survive the recurrent drought, which brings them closer to the brink of conflict, as they all head to the shores of the Lake Baringo, where grass and water are available. This puts them in danger of animal attacks such as hippos that live by the shores of the lake.

> "….*vita ambayo inatokea hapa ni kuhusu wanyama, maji na ardhi*…"
> (*Conflicts over livestock, water and land are common in this area)*
>
> (Resp. 2 Tiaty Sub-County)

The recurring theme among all the 16 respondents was that, the search for water and pastures was a major driver of conflict and insecurity in the area. The study took place at the height of a lengthy drought and respondents pointed out that this was a precursor to violent confrontations, if the rains had failed. Weeks later, true to their predictions, violent conflict erupted in the area and the neighbouring counties, prompting the Cabinet Secretary in charge of Internal Security to physically intervene. Respondents reported that herders from the drier

northern parts of the sub-County moved towards Lake Baringo during the dry spells in search of water and pastures. When rivers dried up, there was no other source of water for the animals since the County government provided water for human consumption only. The researcher observed that most rivers had dried up or reduced to a trickle.

These findings are in tandem with theories cited in the literature review. For instance, the conflict over water and land speaks to the Human Needs Theory. This theory states that existential needs push people to engage in violent acts as they seek to secure their supply. Water for livestock and human usage is the ultimate existential need, since it can neither be forgone nor substituted. The Social Capital Theory also applies to some degree, in that the people feel marginalised in comparison to their neighbours. Residents show low degrees of cooperation with neighbouring communities as depicted by the invasions into rangelands, use of violence and unwillingness to share scarce resources.

4.3.2 Coping Strategies /Interventions made to address water conflicts

The researcher established that concerted efforts have been put in place to address the perennial conflicts. At the time of conducting the survey, the County, and indeed the Country at large, was at the tail end of a persistent drought. As a result, the County leadership was making frantic efforts to try and forestall any emergent conflict that could have been precipitated by the severe lack of water and pasture.

National and Local Governments

Peace efforts are primarily spearheaded by the County government, in conjunction with the National government. This information was shared by 6 the national and county government officials interviewed. Through efforts such as peace meetings, *barazas* and peace runs, the

administration strives to achieve harmonious coexistence among communities that reside in this County. The County government also provides clean water to the residents through water bowsers. The County government also organises for the reseeding of overgrazed grass in the sub-County. The National government on its part has deployed the Kenya Police Reservists. These are members of public provided with firearms and paramilitary training. The researcher also observed heavy military presence in the area. The deployment of these Security Officers coupled with the armed civilians, helps restore order and security when conflicts flare up.

As part of efforts to integrate Tiaty into the mainstream Kenyan society and create alternative livelihoods that discourage taking part in conflicts; the two levels of government have rolled out a number of infrastructural projects. A brand new road (Nakuru-Sigor) now traverses Tiaty and has opened up the area and connected it to the rest of the County. The County government has also expanded former cattle tracts into motorable all-weather roads, besides constructing new schools and health facilities for the residents.

Conservancies (Ruko, Kaptuya and Ng'enyin)

Conservancies on their part have played a pivotal role in forestalling and deescalating conflicts in the sub-County. By and large, conservancies contribute to building peace among the three communities. Ruko and Kaptuya conservancies allow herders to graze within their territories since they are not fenced. Ruko in particular, borders Lake Baringo and is therefore rich in vegetation even during the height of droughts. Ruko is an acronym derived from the names *Rukus* and *Komorion,* which are names for the same place by the Njemps and Pokots respectively. The management of Ruko Conservancy goes out of their way to organise peace meetings and *barazas* among the morans from the three communities residing

in the area. During these meetings, the morans are implored upon to coexist and live in harmony by for instance, allowing each community to graze its livestock in each other's locality, in times of droughts. Ruko conservancy also organises sports tournaments that bring together the three communities. These include the canoe racing tournament on Lake Baringo known as *Kaldich* and several marathon races, each year.

In Kaptuya conservancy, there is a grazing management schedule set up by a grazing committee that work hand in hand with a similar one, constituted by the County government. A grazing management schedule stipulates the number of livestock that can graze on the fringes or inside the conservancy, in harmony with the wildlife, without depleting the resources. These measures are put in place to prevent unregulated encroachment into the conservancy. Through collaboration with the MCA for Churo ward, Kaptuya has been able to source for project funds from donor agencies. These funds have been used to sink boreholes within its territory for supplying water to both wildlife and livestock. The conservancy also sensitises the community on ways of diversifying their economic activities to discourage overreliance on herding livestock.

In Ng'enyin conservancy, the smallest of the three, conservancy leaders convene regular meetings aimed at peace building in the area. They are in the process of expanding the conservancy area and are holding discussions with residents with a view to setting aside more land. This in turn creates a sort of pasture reserve area which was the original motivation for setting up the conservancy.

In sum, conservancies' role in water conflict is three pronged. On one hand, they attract herders during times of drought which helps quell tensions among the pastoral communities by easing pressure in the rangelands outside the conservancies. They also carry out

educative, sensitisation and awareness campaigns within the surrounding communities, with regards to conservation and rangeland management. On the other hand, the fact that conservancies are the only source of water and pasture during droughts, which exposes them to illegal incursions by resident communities as they fight for scarce resources. This calls for creative and collaborative ways of managing water and pasture resources. Ultimately, these efforts lead to peace-building and conflict transformation through conservation. That said, the benefits of conservancies outweigh their demerits. They play a vital role in fostering peace as long as the demand for water and grass is not exceeded by supply.

NEMA and the County Department of Environment

The National Environment Management Authority (NEMA), as an entity is not a central player in the affairs of peace building and conflict resolution in the County. However, there is recognition among its Officers on the critical role environmental conservation can play in conflict prevention and resolution. When invited by other government agencies and departments, the agency gives talks on conservation to the communities in the County. As far as possible, the agency offers support to the peace building and conflict resolution efforts of other agencies.

> *"We do resource mapping which guides on areas to focus our attention, such as areas where pastures can regenerate faster, we also plan to teach them new ways of farming like proper breeding...*"
>
> (County Government official)

The department has put in place robust policies that encourage the setup of conservancies in Tiaty, which play a role in minimizing conflicts. At the moment, there are plans to set up another conservancy called Paka with funding from the European Union (EU). The County government works with the Northern Rangeland Trust in the management of the

conservancies in the area. The department also makes efforts to involve the communities in the management of local resources such as communally owned rangelands, to avoid a top-down approach. They also train communities on sustainable rangeland management practices, such as bringing back controlled grazing. This involves setting aside grazing land during times of plenty for utilisation in times of scarcity.

Community leaders

The community leaders interviewed by the researcher stated that they participate actively in peace building activities in the sub-County to prevent eruption of conflicts. They help organise meetings as a preemptive measure especially when they observe persistent drought conditions. Here are some of their submissions.

> "*….wazee wakishirikiana na serikali, wanaitisha mikutano, kujaribu kuzungumzia hawa vijana kila wakati kuna vita…*"
>
> (*…elders call for meetings with the government, in order to try and talk to the young men, every time conflict erupts…)*
>
> (Resp. 3 Tiaty Sub-County)

In a nutshell, their role mainly involve talking to the young herders to dissuade them from engaging in violent conflicts when in search of pasture or water that fall into short supply.

4.3.3 Challenges encountered when operationalising these coping strategies/interventions

A myriad of challenges are encountered by the various stakeholders interviewed depending on the role they play. A challenge that seemed to cut across all the stakeholders is the high illiteracy levels in the sub-County. It is such a dire situation that it informed the research design of this study, since few locals would have been able to communicate with the researcher. Interviewees reported that illiteracy hinders the implementation of any programme or project, since it is difficult to win the support of the local community.

Illiteracy in itself is not the main challenge to the implementation of ideas, rather it is the lack of an educated indigenous populace that can sell ideas to locals. Therefore, new ideas or projects are often parachuted in by government officers who are often from a different community. It is noteworthy that some respondents interviewed by the researcher hail from the study community and acknowledged the difficulty in implementing any project through a top-down approach.

Perhaps one of the biggest challenges as pointed out by the interviewees are high levels of poverty and unemployment. Several respondents were of the view that these two factors played a major role in pushing herders into engaging in violence and of late, petty theft. Unemployment among the youth is high, even among those with a modest form of education. Therefore for some, engaging in violent conflict is the only viable method of earning a living. This normally takes the form of cattle rustling.

It was also pointed out to the researcher that, young herders are treated like adults and live far from home, away from parental supervision. As such, herders operate in a *laisser-faire* manner that fosters impunity, given that these youngsters already walk around with guns. Often, these herders engage in cattle rustling and other activities that bring about insecurity, without their parents' knowledge.

> "….*watu wanaitwa baraza na chief kuzungumza kuhusu vita lakini hakuna kitu kingine kinafanyika baada ya hio*…"
>
> (…*the chief often calls for meetings but nothing much comes out of it…)*
>
> (Resp. 4 Tiaty Sub-County)

Government officers reported that their main challenge in addressing water conflicts in the area was inadequate funds. As a result, they are forced to get creative in the approaches used to address conflicts in the area. For instance, peace runs are a cost-effective peace-building

mechanism. Peace-runs are mostly funded by the county government, sometimes in collaboration with development partners. It is an effective stop gap measure, as opposed to sitting back and watching as conflicts fester. Government officers acknowledged that truly effective peace-building measures are costly since they involve infrastructural and economic-improvement initiatives.

Interviewees also reported political interference as a major hindrance to their work in the sub-county. Communities at loggerheads can get riled up by inciteful comments by a politician, even if they were considering calling a truce. This is often occurs at the height of political campaigns or when in the midst of a drought, whereby community leaders feel the need to be protective of their own. For instance, Kenya Police reservists are armed on the basis of ethnicity. If conflicts erupts and the government decides to disarm one but not the other, then this creates an avenue for inciting utterances.

Even though efforts have been made to open up the County, there are many places in Tiaty sub-county that remain hard to reach. Tiaty is a large Sub-County, bigger than more than half of counties in Kenya. For a long time, large swathes of this area have remained neglected by the national government. This makes it difficult for the same government to deploy Security personnel in times of conflicts or provide emergency medical or other forms of relief services to the local population. It also prevents the community from integrating fully with the rest of the Country.

4.4 Discussion

After a thoroughgoing analysis of the narrative gathered from key interviews, a relationship between water and pasture scarcity and the occurrence of conflicts, begins to manifest itself. The researcher's interaction with the community and experts based in the region was able to

pick out nuances in this phenomenon. For instance, the issue of boundaries did not present itself in the literature review conducted but was cited as a major reason for conflicts, time and again. This is political manifestation of the resource conflicts, as boundaries are determined through political and administrative processes. In fact, boundaries matter because they which community can access what natural during times of drought.

It also became clear to the researcher that, water conflicts can be easily solved through collaborative efforts. All the key informants interviewed were in agreement that, addressing access to water and pasture could herald lasting peace in the sub-County and the entire Central Rift region.

4.5 Conclusion

A close examination of the narrative from the key informant interviews reveals that indeed water-related conflicts have negative implications on security in Tiaty sub-County. The need to earn a living, especially in the event of a drought, creates an insecure environment even in the neighbouring sub-Counties. This is done through raids to restock dead livestock and/or relentless and often forceful search for pasture and water for the surviving ones. As incidences of drought continue to recur each or every other year, it is likely that the need for water and pastures will continue to drive conflicts and violence, leading to insecurity. Some coping mechanisms adopted such as the replanting of overgrazed grass, and the setting up of conservancies have helped mitigate against occurrence of conflicts over water and pastures. This study acknowledges the deployment of security forces in the area as a measure meant to maintain security, although its effectiveness remains dubious. Illiteracy, inadequate funds and an expansive territory act as stumbling blocks to the actualisation of projects that support conflict transformation. With all these in mind, one can argue that water and pasture issues are likely to continue being a source of insecurity in Tiaty sub-County.

CHAPTER FIVE:

SUMMARY OF FINDINGS, CONCLUSSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the researcher spells out the findings in line with the study objectives. In this section, key findings are presented in a summary. The chapter also includes a section on recommendations for policy makers and other stakeholders, as well as recommendations for further studies. Below is the discussion:

5.2 Summary

5.2.1 Nature and Extent of conflicts in Tiaty sub-County

The study confirmed that conflicts in Tiaty were water and pasture related. It also established that conflicts over these two resources, also led to boundary disputes. These disputes are both within Tiaty sub-County and along its borders with the neighbouring areas. As such, the occurrence of conflict in Tiaty sub-County is of a cyclical nature, driven by the recurrent droughts and land disputes. Young herders aged between 12-18 years old, are the main perpetrators of violent conflict. Conflicts are typically violent and involve the use of powerful rifles such as AK47s.

In terms of spatial extent, incidences of conflicts in Tiaty sub-County have increasingly been moving southward into mainly Tugen and Njemps/Illchamus dominated areas. The study also observed that the frequency of violent conflicts has been increasing in the recent years. It is not unusual to have several incidences of conflicts in one year. Data from secondary sources revealed that the overall deaths from conflicts and the number of people affected has been growing over the years. It also revealed that incidences of droughts and famine have increased in frequency from two major events in a decade to four major ones.

5.2.2 Coping strategies applied so far by Stakeholders in Tiaty sub-County

The study found out that, interventions are by and large, collaborative efforts of various stakeholders in the sub-County. These include the National and County government, conservancies, religious organisations and community groups. Interventions or coping strategies can be grouped into two main groups: preventative and reconciliatory. Stakeholders apply a mix of both strategies in addressing conflicts in the area. For instance, peace meetings or *barazas* may be held to quell tensions or in anticipation of the same, such as when the region is in the midst of a severe drought. The study established that peace meetings or *barazas* are a popular means of resolving conflicts among stakeholders. Preventative strategies of forestalling conflict include replanting grass in degraded areas, providing water during droughts, encouraging alternative livelihoods and setting up rangelands and conservancies. Some methods such as deployment of security forces example, police reservists may not pass as reconciliatory, but are a useful strategy to the state organs, their effectiveness notwithstanding.

5.2.3 Challenges Associated with these Coping Strategies in Tiaty sub-County

The study established that while implementing short and medium term measures, illiteracy serves as a major hindrance. It is often difficult getting through to the locals since any foreign idea is seen as suspicious and insincere. Illiteracy also goes hand in glove with high rates of poverty, early marriages and other social ills. It was also pointed out to the researcher that, young herders are treated like adults and live away from home, where they operate in impunity, away from parental supervision. The remoteness of the area, due to lack of transport and communication means, makes it difficult to implement projects such as health and school facilities, which would bring about meaningful social change.

5.3 Conclusion

From the discussions held with the key informants and deductions made from the secondary data, the researcher was able to ground-truth the assertions he had made in the second chapter of this dissertation. It was the position of this thesis that, conservation can be used as tool to forestall water-related conflicts. The researcher had also argued that, citing the works of John Burton, that at their core, conflicts were mostly about fulfilling existential needs. In the case of Tiaty residents, it is mostly about finding rich pastures and plenty of water. Interventions such as replanting or reseeding grass, destocking herds and the setting up of rangelands and conservancies, are in tandem with the coping strategies proposed in the study's conceptual framework. New information such as the presence of conflicts over boundaries also emerged from the discussions held. It is the opinion of this study that water conflicts can be minimised with the application of sustainable interventions. Some of these strategies are being implemented amidst challenges such as political incitement, population pressure, illiteracy and most notably, severe and recurrent droughts. As such, an integrated approach that also addresses these challenges should also be adopted by the stakeholders, for peaceful coexistence among communities to be realised.

5.4 Policy Recommendations

- Conflict resolution mechanisms should incorporate a comprehensive and integrated approach that involves all stakeholders. As demonstrated by this study, a political solution to resource-based conflicts a temporary one that does not address the underlying causes. In addressing challenges to access to water, conflicts among herders are brought down to a minimum. To this end, this study proposes the continued construction of dams and sinking of boreholes. These

interventions would also demand that highland communities engage in conservation practices that ensure the continued flow of rivers towards the drier parts of the county. While this has been done so far, reports by residents claim that it was strictly meant for human consumption only.

- The authorities should endeavour to create conditions suitable for settled communities. Provision of water, electricity, health and school facilities would help create such communities. In order for such settlements to thrive, stakeholders must ensure that the pastoral communities are engaged in alternative means of livelihood. This requires training and education of the local communities. It would also call for sourcing for markets. This is vital for the goods and services that would be created in the settled communities.
- While both levels of government have made strides in opening up the area, there is still a profound absence of State organs there. The absence of policemen and women lends itself to the aforementioned state of impunity among herders in the area. The carte blanche manner, with which herders have carried themselves over the years, is encouraged by the absence of the State in the area. Upon reflection, the researcher thought about how authorities dealt with herders, once apprehended. He wondered whether the criminal justice system treats herders the same way as it does other offenders. He was at a loss, beyond the intervention he had proposed of conservation, on what other ways were effective at bringing about conflict transformation. This study could not ground-truth these sentiments as they were outside its scope. However, the use of brutal force

utilised by the Security forces only serve to harden the people of Tiaty's will to survive and turns State security agencies into enemies in the herders' eyes.

5.5 Recommendations for further studies

Further studies in this area could explore how alternative livelihoods can help in creating settled communities in Tiaty and the surrounding areas. This arises from the discussions held with these key experts. The researcher observes that the days of nomadic pastoralism, in the wake population pressure and recurrent droughts, are numbered. As such, efforts should be made towards establishing permanent settlements in this and other arid and semi-arid areas around the Country.

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APPENDICES

APPENDIX 1: CONSENT FORM

I am James Gathere Kamotho from St. Paul's University, Department of Social Sciences. I am carrying out a study titled: Water conflict in Tiaty Sub County: Implications for security in this region

Purpose

The main objective of this study is to look water conflicts in Tiaty Subcounty and their implications for security in the area. As part of the study, the researcher will seek to interview conservationists, government officers and other stakeholders with vast knowledge on the subject in this locality.

Procedure

If you agree to participate in the study, you will answer questions that relate to the following issues. One, the extent to which conflicts are triggered by poor or lack ofenvironmental conservation. Two, whether or not there is a role played by in conflict management. Three, the nature of the relationship environmental conservation and the emergence of conflict.

Confidentiality

I will treat information shared during the interview with the utmost discretion. There shall be no use of names or any possible identifiers that may connect you with the reports or publications that will be availed as a result of the study.

Voluntarism

Participation in the study is voluntary in nature. If you choose not participate, you will not penalized in any way. You will also be free to withdraw from the study at any time and refuse to answer any question that you deem is too personal. However, I implore you to please consider participating fully in the study.

Contact Persons

In case of any questions you may have regarding the study, you may contact James Gathere Kamotho through telephone no: 0728809765 or email address: jameskamotho@spu.ac.ke. Your participation in the study will be highly appreciated.

I ……. Hereby voluntarily give my consent to participating in this study. I acknowledge that I have understood the explanation given to me with regard to the nature of the study. I clearly understand my role regarding my participation which is completely voluntary.

Name:……...Signature……

APPENDIX 2: KEY INFORMANT INTERVIEWS GUIDES

Name ……..

Gender ……...

Position ……..

Year of service ……..

Questions for the members of the Local community/Local leaders

1. In your opinion, what type of conflicts occur in your sub-County?
2. How often do these conflicts happen? Please tick one
3. Once a year ☐ after every two years ☐ after every five years frequent ☐

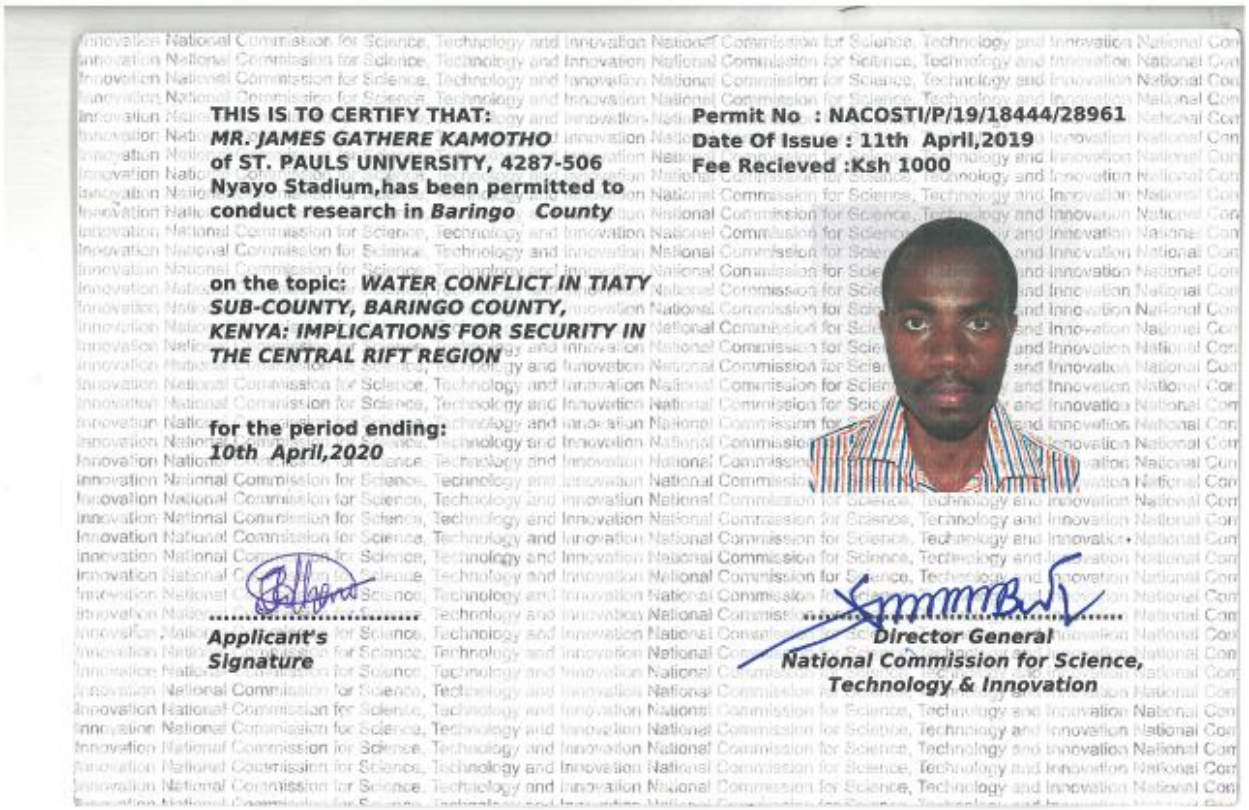
   Other … Please specify
4. What in your opinion are the causes of these conflicts?
   ……
5. Who are mainly involved in these conflicts? Please share …….
6. Are there activities to address these conflicts? Yes No ☐ ☐
7. If yes, what activities is the community engaged in? Please share…….
8. If you said 'No' to no 6 above, why in your opinion are people not involved in these conflict management activities? ……..
9. Share on any activities to address these conflicts that you consider important …….
10. What challenges, if any, are people facing in addressing these conflicts?
11. What other activities do you consider important in addressing these conflicts?
12. Is there any other thing you would like to share …….

Questions for key informants (Government Officials/Community and Faith Based organisations/Conservancies/Local and International Nongovernmental or International Organisations)

1. What type of conflicts occur in this sub-county?
2. Which of these conflicts do you consider most frequent? ……
3. How often do these conflicts happen? Please tick one
4. Once a year ☐ after every two years ☐ after every five years frequent ☐

   Other … Please specify
5. What in your opinion are the causes of these conflicts? ……
6. Who are mainly involved in these conflicts? …….
7. What measures have been put in place to address these conflicts? ……
8. Which activities is your organisation mainly involved in to address these conflicts?
9. What challenges are you facing in addressing these conflicts?
10. What activities, if any, is the local community engaged in? …….
11. What other activities do you consider important in addressing these conflicts?
12. Is there any other thing you would like to share ……?

APPENDIX 3: RESEARCH PERMIT



THIS IS TO CERTIFY THAT:
MR. JAMES GATHERE KAMOTHO
of ST. PAULS UNIVERSITY, 4287-506
Nyayo Stadium,has been permitted to
conduct research in *Baringo County*

on the topic: *WATER CONFLICT IN TIATY SUB-COUNTY, BARINGO COUNTY, KENYA: IMPLICATIONS FOR SECURITY IN THE CENTRAL RIFT REGION*

for the period ending:
10th April,2020

Permit No : NACOSTI/P/19/18444/28961
Date Of Issue : 11th April,2019
Fee Recieved :Ksh 1000

.....
Applicant's Signature

.....
Director General
National Commission for Science, Technology & Innovation