

**DROUGHT AND NATURAL RESOURCE BASED CONFLICTS AMONG
PASTORALISTS IN GREATER KAPOETA AREA
OF SOUTH SUDAN**



A Thesis

Presented to the

College of Higher Degrees and Research

Kampala International University

Kampala, Uganda

HN 792.29
184 2012

In Partial Fulfillment of the Requirements for the Degree
Masters in Conflict Resolution and Peace Building

By:

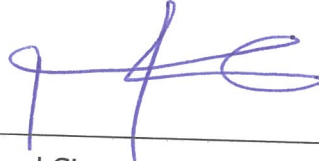
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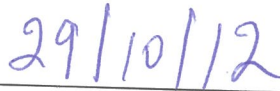
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DECLARATION A

This thesis is my original work and has not been presented for a degree or any other academic award in any university or institution of learning".



Name and Signature of Candidate



Date

DECLARATION B

"I confirm that the work reported in this thesis was carried out by the candidate under my supervision".

Name and Signature of Supervisor

Date

APPROVAL SHEET

This thesis titled" *"Drought and natural resources based conflict among pastoralist communities in Greater Kapoeta areas of South Sudan"* prepared and submitted by Nugus Gebreselasie Hadera Reg. No **MRC/33258/102/DF** in partial fulfillment of the requirements for the Degree of Masters in Conflict Resolution and Peace Building has been examined and approved by the panel on oral examination with a grade of _____.

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DEDICATION

This thesis report is dedicated to My beloved wife Selamawit Wosenseged who has carried the responsibility of caring for our children single handedly so as I could focus on my studies including in accomplishing my research project.

ACKNOWLEDGEMENTS

This study titled "Drought and natural resources based conflict among pastoralist communities in Greater Kapoeta area of South Sudan" was carried out by me in collaboration and strong support from Kampala International University (KIU), Uganda.

I am most grateful to Mr. Anyama Charles, my supervisor at KIU who gave me his unreserved guidance both technical and substantive advice to complete my study.

My appreciation also goes to Eastern Equatoria State Government at all levels who had been supportive not only in availing all necessary information but also in facilitating meetings with community even at difficult terrains.

My gratitude goes to all my dedicated, inspiring and resourceful class mates who tremendously enriched my understanding of subject matters during their heated debates and discussion in class.

Specially, I am indebted to Gimugi Keneth (servant leader) who extended his unreserved assistance to me every time I needed it. Without his help and encouragement, I would not have accomplished my research project, at least within the required timeframe.

ABSTRACT

The study titled "Drought and natural resources based conflict among pastoralist communities" conducted in Greater Kapoeta area of South Sudan. The study was conducted to determine whether resource scarcity contribute significantly to prevalence of conflict; to investigate the recurrence of drought in the study area and its impact on pastoralists' livelihood; and to study the drought coping mechanisms of pastoralists. Its main objective was to find out the impact of drought on conflicts between pastoralist groups over resources. The study used a descriptive cross-sectional design having a sample size of 380 respondents. The study revealed that: natural resources such as grazing land and water are fundamental resources in pastoralist livelihoods; drought is prevalent in the area scaling up resource scarcity and intensifying competition over resources; pastoralists migrate in search of water and grazing as a coping mechanism during drought; competition over resource use and ownership is major factor of violent conflicts in the area. The study drew a number of conclusions: that the availability of natural resources such as water and grazing land is scarce in the area that sustainability and development of pastoralism as a life style is endangered; that the recurrence of drought is high and increasing from time to time; and that drought has significant contribution in enhancing conflict over resources among pastoralists.

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LIST OF ABBREVIATIONS/ACRONYMS

GHA - Greater Horn of Africa
IOM – International Organization for Migration
IPCC- International Panel on Climate Change
NEPAD – New partnership for African Development
UNEP – United Nations Environmental Program
UNDP – United Nations Development Program
FAO – Food and Agricultural Organization
WFP- World Food Program
EES- Easter Equatoria State
RoSS- Republic of South Sudan
PASS – Pan African START Program
USAID – United States Agency for International Development
ENCOP – Environment and Conflict Project

CHAPTER ONE

THE PROBLEM AND ITS SCOPE

Background of the study

The availability of most needed natural resources increasingly depleting globally owing to various factors. Resources such as land and fresh water are not accessible to all people. This made it difficult for human beings to continue their traditional livelihood styles and meet their needs. The difficulty of meeting basic needs such as food and drinking water has in turn intensified competition among different societies and groups leading to conflict.

Natural resources based conflicts are more often than not prevalent phenomenon in the Sub-Saharan Africa, where majority of the population eke a living from natural resources mainly land. A change in the natural environment has contributed to depletion of natural resources making such resources scarce and leaving the population of the continent under continuous competition. Various natural phenomenon and human activities account for the environmental degradation and resource depletion in many parts of Africa. The deterioration of the environment in turn resulted in the vulnerability of communities in the region "with increased environmental hazards and reduced capacity to cope with the hazards", (Mbote 1999).

Ecological change interwoven with degradation of land and its resources in the region made natural phenomenon such as drought more frequent further disrupting the lives of many people. In the horn of Africa, for instance, drought in 2011 has affected millions of people exposing many to severe famine and migration in search of food. Many from Somalia, parts of Ethiopia and Kenya are under a threat of catastrophe unless the international community extends immediate assistance. Lengthy conflicts that took place or still are taking place in those areas have destroyed much of the peoples' livelihood and traditional coping mechanisms.

Though drought is a natural phenomenon across the globe its impact on humans varies between continents, regions, countries, areas, communities and social groups. In developed countries, drought may occur but can have little impact because of people's capacity to manage its consequence. Economically powerful countries develop mechanism such as maintaining water reservoirs and food reserve that they do not face drought related disaster. However, in countries like Africa, people are vulnerable to the effects of drought as no government or individual capacity exists to cope with the situation. The East African region is among the worst drought prone and impoverished regions.

In East African countries, where majority of the population depend on agriculture and cattle breeding as their source of livelihood, drought has significant role in destructing people's life. Meanwhile, drought is part and parcel of daily life of people in the region. It is so common that in many African societies, the drought season marks an important part of the annual calendar. (Mekonnen, 2006). Both the agriculturalist and pastoralist communities of the region often face huge humanitarian crisis because of drought. It causes failure of crops, depletion of water resources and pasture, and reduction in forest and wild fruits resulting in narrowed survival mechanisms for communities. This creates competition for the limited sources of survival among local communities of the same economic group, different economic groups such as farming and pastoralist communities, different communities of the same economic group within national boundary, and even across boundaries.

Particularly, pastoralist communities are accustomed to mobility in search of pasture and water for their livestock as a coping mechanism during dry season or other factors that reduce such resources. Mobility and flexibility are key factors to the survival of such livestock-keeping people, who continue to provide a major part of the meat and milk produced in the region. Finding ways to maintain and strengthen such mobility is crucial to their survival. (Patricia Kameri-Mbote, Joel Musaasizi and Michael Waithaka, 2007). So at times of drought pastoralists are forced to leave their villages

with their livestock in search of water and grazing land most likely outside their traditional grazing area during which they are engaged in conflict with other communities over grazing territory and cattle stealing. The conflict can be intensified and become frequent when the drought period is prolonged.

In South Sudan, a country that underwent through a prolonged conflict that depleted the socio-economic infrastructures, conflicts among the different ethnicities over resources and other claims has been prevalent for long, usually among pastoralists. The Eastern Equatoria State of South Sudan is a home for large population of pastoralist. Of the total population of the state an estimated 60 per cent are pastoralists. Within the state, the Greater Kapeota (composed of three counties in the current administrative structure namely: Kapeota East, Kapeota West and Kapeota South) area is home to about 300,000 people of which majority are pastoralists.

The predominantly Toposa ethnic group people of Greater Kapeota live in semi-arid and rugged land with vegetation cover limited to shrubs short grass. The Toposa mainly rely on cattle, sheep and goats, from which they obtain milk, blood, meat and leather. During the wet season the animals graze near the villages. When the rains end, the men take the herds to dry season pasturage then slowly bring them back, grazing along the way, to arrive in the village when the next rainy season starts. Some areas of good pasturage cannot be used because of lack of drinking water. (Wikipedia, 2012). The Toposas take their cattle to neighboring areas such as Budi county as well as far crossing border to Kenya, Uganda or Ethiopia mainly at times of prolonged drought. Owing to this and other factors the Toposa people have experienced several conflicts with tribes in Eastern Equatoria (Budi), with communities in other states of South Sudan such as the Jie of Jonglei statw, and with communities in neighboring countries.

1.2 Statement of the problem

It cannot be doubted that scarce natural resources play a key role in the increase of conflicts among local communities who rely on land and its resources for subsistence.

Conflict over grazing land, over cattle, over water points and over farm land are widely prevalent among pastoralists; environmental changes in recent years have intensified competition over scarce resource. However, With regard to the recurrent conflicts of South Sudan there is a tendency of associating the conflicts to mere tribal differences and intolerance undermining the role of resources in those conflicts. The resource dimension of conflict in the new nation of South Sudan is well recognized often when it comes to the larger conflicts involving oil and other minerals.

As a result, there is no adequate research on the role of local resources such as grazing land and water in causing conflicts. Yet, having adequate understanding of the resource scarcity based conflicts and factors aggravating the scarcity could be a basis to resolve the recurrent conflicts. The study was intended to examine and explain the relationship between drought, natural resources and conflict and show to what extent drought fuels resource based conflicts among the pastoralist communities of Eastern Equatoria State of South Sudan with particular emphasis to Greater Kapeota area.

Purpose of the Study

The purpose of the study was to investigate the impact of drought on natural resource based conflicts among the pastoralist communities of greater Kapoeta Area of South Sudan.

Research objectives

General objective

The study was aimed at examining the role of drought in exacerbating the scarcity of natural resources such as grazing land and water in study area and how such increased scarcity becomes a cause for conflicts among the pastoralists. Therefore, the objective of this research has been to find out the impact of drought on the conflicts between pastoralists over resources.

Specific objectives

The study had the following specific objectives:

- i. to determine whether scarcity of resources such as water and grazing land contribute significantly to the prevalence of conflict among pastoralists in the greater Kapoeta area and their neighboring communities
- ii. To investigate the recurrence of drought in the Greater Kapoeta area and its impact on the livelihoods of the pastoralists.
- iii. To study the coping mechanisms of pastoralists when their livelihoods are threatened by the effects of drought.

Research questions

The following were the core questions of the study.

- i. Does scarcity of resources such as water and grazing land contribute significantly to the prevalence of conflict among pastoralists in the greater Kapoeta area and their neighboring communities?
- ii. How prevalent is drought in the Greater Kapoeta area and to what extent does it affect the livelihoods of the pastoralists of the area?
- iii. What coping mechanisms do the pastoralists of Greater Kapoeta use when their livelihoods are threatened by effects of drought?

Research hypothesis

In this research the assumption was that drought, scarcity of natural resource and conflicts are strongly related. Drought increases scarcity of natural resources mainly grazing land and water which are highly required by pastoralists; and increased scarcity enhances competition for such resources leading to conflict. Therefore, the hypothesis of this research was "drought has a significant role in natural resources based conflicts among the pastoralist of Greater Kapeota".

Scope of the research

Geographic scope

The study was carried out in the greater Kapoeta areas which comprise three counties namely Kapoeta East, Kapoeta North and Kapoeta South. Greater Kapoeta constitutes the eastern part of Eastern Equatoria State of South Sudan.

Content Scope

The study has mainly dealt with three variables: natural resource availability, drought and resource based conflicts. Conflict may occur due to several social, political, economic and cultural incompatibilities. However, the focus of this study was on the natural resource scarcity aspect with special emphasis on drought as a fueling factor.

Significance of the study

The study attempted to document the conflict complex in the Greater Kapoeta area and identify the correlation between natural resources scarcity and conflict and tried to show the extent to which the recurrence of drought enhanced conflict among the pastoralist communities who primarily rely on natural resources such as water and grazing land for survival.

The research was expected to be beneficial for local and state government who may wish to formulate policies aimed at resolving the fundamental sources of conflict among pastoralists of the area. It was also intended to help different local and international non-governmental agencies interested to operate in the area aiming to reduce vulnerability of pastoralists to climate change such as drought. Most important, it can give an insight to all concerned state and non-state agencies the need to foster an early warning mechanism to cop up with drought and other shocks which often trigger conflict among pastoralist.

It can also motivate further researches to study in detail the conflict dynamics in the area and come up with more concrete strategies of conflict resolution and peace building appropriate for the particular area.

Definition of key terms

Climate change – according to the Intergovernmental Panel on Climate Change (IPCC), climate change refers to “any change in climate over time, whether due to natural variability or as a result of human activity” (IPCC, 2007a:21). “Climate change is a statistically significant and persistent (decades or longer) variation in the mean state or variability of climate (IPCC 2001).”

Drought - A drought is defined as a departure from the average or normal conditions, sufficiently prolonged (1-2 years - FAO, 2004) as to affect the hydrological balance and adversely affect ecosystem functioning and the resident populations. Drought is also referred as a period of aridness, particularly when protracted, that causes widespread harm to crops or prevents their growth (Mekonnen 2006).

There are actually four different ways that drought can be defined (National Weather Service, 2004). Meteorological drought is a measure of the departure of precipitation from normal. Due to climatic differences, a drought in one location may not be a drought in another location. Agricultural drought refers to situations where the amount of soil water is no longer sufficient to meet the needs of a particular crop. Hydrological drought occurs when surface and subsurface water supplies are below normal. Socioeconomic drought describes the situation that occurs when physical water shortages begin to affect people. According to this classification of definitions the term agricultural drought more represents the concept in which drought will have in this particular study assuming that the term crop is not limited to its literal meaning but to a wider sense to include grass or other vegetations required for grazing livestock.

Pastoralists - are communities who rely for livelihood on rearing herds as sources of milk, meat and hides. They are people whose social and economic life is structured around the maintenance and well-being of their livestock (Leff, 2009). Pastoralism is a production strategy in which people raise herd animals as a means to earn a livelihood, often in arid and semi-arid areas.

Pastoralists can be classified depending on their migratory behavior and engagement with other non-pastoralist economic activities. **Nomadic pastoralists** move from one place to another in pursuit of water and pasture for their livestock. Their migration patterns follow well-defined traditional stock routes that avoid disease vectors such as tsetse flies and ticks.

Transhumance pastoralists have a permanent homestead where the old, sick, young and disabled reside as the rest of the family members move with the livestock from place to place. They split their herds so that the weak and lactating livestock remain at the homestead, while the rest move from place to place in search of water and pasture. This group practices subsistence farming in areas with favorable weather conditions.

Agro-pastoralists are nearly completely permanently located and engage in farming. They own farmlands where they grow crops and keep small herds of livestock that graze on communal land. Occasionally, they experience conflict with regard to crop and livestock land use.

Conflict – conflict is an act of disagreement among individuals, groups, communities or nations arising from incompatibility of goals or interests. As Michelle LeBaron notes, “Conflict, put simply, is a difference that matters”. The dynamics and processes related to conflict is complex, definitions tend to focus on a combination of factors such as circumstances, perceptions, behaviors, differences, interests and goals.

One of the major causes of conflict in modern days is competition over resources and access to resources which are commonly required. Both resource riches and resource scarcity manifest themselves in the third world countries such as Africa. But, for the focus of this research is on the depletion and scarcity of natural resources that are central to the livelihood of millions of people in the Sub-Saharan Africa like South Sudan.

Payam – Payam refers to an administrative unit in the Republic of South Sudan equivalent to district. A group of Payams form County

CHAPTER TWO

Review of Related Literature

Concepts, Opinions, Ideas from Authors/Experts

Climate change, drought and natural resources depletion

According to the World Meteorological Organization, climate is the statistical description (mean and variability) of surface weather conditions such as temperature, participation, and wind over a period of 30 years. Climate change is currently one of the pressing issues of discussion among countries of the world. Broadly, there is strong evidence that global warming is likely to have a range of negative and positive spatially specific impacts on biological systems, precipitation and drought (IPCC 2001:18). Such impacts will affect livelihoods of millions of people globally.

"The climate change phenomenon is a global concern, which typically threatens the sustainability of the livelihoods of the majority of the population living in the developing countries" (Mwiturubani, et al 2009). The picture painted for Africa, where the majority of people depend on the environment for a living, is bleak. In response to the changes in climate and resulting phenomena, communities across the world are starting to learn to live with the reality of climate change, adapting as best they can to its impacts. However, not all countries and their people have the capacity to cope up with the grave consequences of climate change. People in developing nations like most of African countries are less likely to have the technology and resources to withstand the effects of such variability of climate.

The IPCC argues that Africa is "one of the most vulnerable continents to climate variability and change because of multiple stresses and low adaptive capacity" (IPCC, 2007a:13). According to IPCC, Africa's vulnerability arises from a combination of many

factors ranging from extreme poverty to high rate of population increase to frequent natural disasters such as droughts to high dependency of its agricultural production on rainfall.

In East of African countries such as South Sudan, Kenya, Ethiopia and Uganda, drought has been prevalent for many decades with an increasing magnitude and with deeper impacts on the population. The behavior of the rains in the sub-region has become increasingly unpredictable (GHA 2004). Poor rainfall experience over successive years in some parts of the sub-region has particularly affected agro-pastoralist communities leading to depletion of available pasture and overstretching the capacity of water resources for livestock, consequently threatening the livelihoods and food security of the pastoralists (GHA 2004).

Similarly, Mekonnen argues that many areas affected by drought are arid and semi-arid areas that even under normal circumstances, these areas are low in resources and under substantial ecological pressure. Therefore, the occurrence of climate induced natural disasters like drought poses difficulties on the survival of people in the sub-region. People's lack of capacity to respond to natural disasters and inefficient or lack of early warning systems also worsens the effects of drought (Mekonnen, 2006).

In the East African sub-region, pastoralists who predominantly occupy the arid and semi-arid land are most affected by the scourge of drought. The dry and pastoral lands of East Africa occupy over 70 per cent of the Horn of Africa; and, as the most effective livelihood system in these dry lands, pastoralism is clearly vital to the sustainable development of the bulk of the landmass of East Africa and to the well-being of millions of people who live there. But the livelihoods of the pastoralists are often threatened by the recurrence of natural phenomena including drought.

Scarcity of resources, competition and conflict

Mekonnen (2006) asserts that when outcomes of climate change such as drought deplete the much needed resources for their livelihood, people compete for whatever available meager resources; and pastoral communities are an example of this. He argues that 'Pastoralists depend on their livestock (camels, cattle, sheep, and goats) and move from place to place with their livestock to look for usable pasture land and water,' their movement increasing during drought. In order to address [the] extreme agro-ecological features, pastoralists build their lives around satisfying the needs of their livestock, following rainfall and fodder over vast distances and across national borders, often covering thousands of kilometers in a single year (Michael et al).

According to Desalegn (2010), movement pastoralists in search of pasture and water resources may not always occur unchallenged particularly with the scarcity of resources in many areas of a given region. Usually, when herders bring their cattle to areas where water and pasture are available and negotiate grazing rights (Ibid). Decisions are made depending on the availability of forage and the number of cattle already using the areas. "If the areas are being used to their capacity, the new herders are asked to find other grazing areas" (Ibid). Desalegn concludes that such a scenario most likely leads to conflict especially when the visiting pastoralists are left with little option to ensure survival of their livelihood sources. "Movement often leads to fierce competition over scarce resources, and in many cases it becomes a source of tension or overt conflict between different communities" (Pavanello: 2009).

Conflict over resources among pastoralists is not limited to within boundaries but can happen across boundaries. In areas like Horn of Africa, pastoralists live around common borders that, sometimes, different pastoral groups move to the same place and want to use the same scarce resources, which cause conflicts between the two communities. "An estimated 75 per cent of conflicts fought between the Turkana and their neighbors in Eastern Equatoria, for example, are caused by the struggle to access and control dry-season grazing areas and water points along the border of Lokichoggio Division and Kapoeta East" (Evoy et al 2008).

Theoretical perspective

The study will make use of the human security approach as a theoretical and analytical method to observe the relationship between drought, resource scarcity and conflict. The concept of human security grew from the practical substance of the 1994 United Nations Development Programme (UNDP) report, *New dimensions of human security*. The paradigm is evolving but, at its essence, refers to "the security of individuals and communities, expressed as 'freedom from fear' [broadly, security] and 'freedom from want' [broadly, development]" (Kaldor, Martin & Selchow, 2007).

Unlike the traditional conception of security, UNDP proposed that the scope of security be broadened to include seven threats to human security – economic, food, personal, environment, health, community and political security. This approach to human security is believed to be more appropriate for Africa (UNDP, 1994:22; Poku & Sandkjaer, 2008:22). Therefore, it will also be appropriate for South Sudan.

Africans have experienced social, economic, political, environmental and cultural hardships, caused by and resulting in interstate and intrastate conflicts, environmental degradation, poor governance, economic uncertainty, inequality and a myriad of other global, national and local reasons. Human security's wider applicability and broader focus may address this complexity, which is exacerbated by the effects of climate change, and by the uncertainty around the future impacts of climate change.

A deprivation – vulnerability framework approach to human security is more relevant to studies involving threats to individuals and communities. According to Busumtwi-Sam (2009) human security is a condition that expresses the "relative presence/absence (or increase/decrease) of contingencies that threaten physical and psychosocial harms affecting human dignity, livelihoods, safety, survival and health and well-being in the political, economic, socio-cultural and ecological contexts within which processes of human development take place". In other words, human security or

insecurity is a state, determined by threats that can cause harm – but can only harm if the unique context one finds oneself in does not provide the person with the means/ability to cope with or mitigate the threat.

The deprivation-vulnerability approach considers threats to be essentially the likelihood of an incident occurring that will cause harm. For the purpose of this study, threats also refer to the impacts of climate and environmental change, such as water scarcity, drought, desertification and competition over arable land for grazing and farming. The thresholds of threats are determined by their imminence, severity and suddenness. Similarly it assumes vulnerabilities as situations in which some groups of people or individuals are more susceptible to harm than others and are likely to suffer harm from a specific threat in the context of particular deprivations and exclusions.

Related studies

Several scholars have researched on the link between climate change, natural resources scarcity and conflict. Many have asserted that there is a strong relationship between the three. The idea resources are affect conflicts are widely expressed in the climate change and conflict literature. Proponents of "resource curse" argue that countries endowed with plentiful resources are cursed to have higher levels of conflict than countries that are not so plentifully endowed (Auty 1993; de Soysa 2002; Collier and Hoeffler 2003). On the other hand, "environmental scarcity" scholars contend that conflict is due to the strains of competition by many people over few resources (Baechler 1998; Homer-Dixon 1999; Ohlsson 1999; Kahl 2006).

Several studies have examined the relationship between rainfall (more particularly drought) and pastoral conflict in East Africa. Meier, Bond, and Bond (2007) find no relationship between rainfall deficiency and violence in their study of the borderlands of Uganda, Kenya and Ethiopia. They further show in their examination of seasonal variation over a two year period that a greater abundance of vegetation is associated with an increase in the frequency raids.

Witsenburg and Adano (2010) analyze monthly rainfall and cattle raiding data from 1960–2006 in the Marsabit district of northern Kenya and find that wetter years on average are associated with more than twice as many killed as compared to drier years (50 vs. 23). They argue that livestock raiding, especially violent episodes result from opportunistic behavior. Attacks occur during wet seasons when water is abundant, pastures are lush, and livestock (particularly cattle) are abundant and in good health. When rangeland resources are abundant, labor will tend to be in surplus, which provides a large pool of young men to recruit into a cattle raiding party.

Moreover, abundant vegetation makes it easier to hide and take advantage of the element of surprises. Readily available water and vegetation also make it easier to drive the stolen cattle long distances. And given that the cattle are healthier, they are

better able to make a long trek. Rainfall also serves to wash away the tracks. In contrast, in times of drought, herds tend to decrease in size and the herds shift from cattle to camels and goats which are better adapted to dry conditions. Herding groups will be focused on survival and will be moving with their herds over wide areas. Labor demand in dry times is taken up looking for far-away pastures instead of engaging in cattle raids (Witsenburg and Adano 2010).

Most scholars argue that scarcity of resources is among the main causes of conflicts among communities who depend on such resources to survive. In countries like Sudan where over 80% of the population rely on land resources to sustain, competition over scarce natural resources – particularly land for grazing and farming, and water, exacerbated by climate and environment change – has become a key issue and a cause of conflict among pastoralists and farmers (UNEP, 2007; UNDP, 2006).

Among the popular explanations of pastoral conflict, some point to the role scarce resources play in fuelling conflict. There are two main schools that have pioneered the endeavor to demonstrate causal mechanisms between resource scarcity and conflict: those of conflict researchers at the University of Toronto led by Thomas Homer-Dixon and scholars associated with the Swiss-based 'Environment and Conflict Project' (ENCOP).

According to the environment-conflict paradigm, unfulfilled demands for scarce water and pasture resources fuel conflict between pastoralist groups (Homer-Dixon in Hagmann 2008). ENCOP researchers incorporate economic, social, and historical factors in addition to absolute and relative resource scarcity to explain conflicts in the Horn of Africa (Suliman 1999; Baechler 2002). Suliman (1999) states that most violent conflicts start over material resources, actual or perceived.

The United States International Development Agency (USAID) conflict baseline study report (2005) has come with a finding that the bio-physical complex arising from

long term environmental changes in the Karamajong cluster characterized by worsening climatic conditions (such as low and erratic rainfall and prevalent prolonged drought) has increased competition over diminishing scarce resources compelling pastoralist communities to fight with one another.

Though several studies have been conducted on the linkage between natural resources scarcity and conflict in the other parts of the arid and semi arid areas of the Horn of Africa (Kenya, Uganda and Ethiopia), no study has so far made in the part of South Sudan. So, the research was aimed to bridge the gap in having a complete picture of the nature and challenges of the pastoralists in the Horn of Africa though adding the South Sudan situation. The study has also tried to look into some unique characteristics in the traditional practices, migration routes and challenges among the pastoralists of Greater Kapoeta of South Sudan which may help to increase the knowledge about pastoralism livelihoods in the sub region.

CHAPTER THREE

METHODOLOGY

Introduction

This chapter presents the research methodology employed in researching the relationship between Drought and Natural Resources Based Conflicts among Pastoralists of Greater Kapoeta in South Sudan. It offers the instruments and tools used for the purpose of this study as well as the process followed. It contains the research design, population of the research, sample size and sample selection criteria, data collection methods and instruments, reliability and validity of the instruments utilized, ethical considerations, and data measurement and analysis techniques.

Research Design

The study on the effects of drought on natural resources based conflict among pastoralists in the Greater Kapoeta area of South Sudan was a descriptive design that employed both quantitative (survey) and qualitative methods. Quantitative data were collected using structured questionnaires to obtain the opinion of ordinary pastoralists (residents) on drought, natural resources key for their survival and conflict while qualitative data was captured through conducting detailed interview with selected individuals who possess expertise and/or classified information so as acquire deeper understanding.

In addition, secondary documents were reviewed to triangulate and compare the emerging issues. The review of secondary documents included previous studies, documentary and program review reports by Non Governmental and Governmental bodies in the geographical area of coverage.

The methodology that was employed has greatly assisted the researcher in being sensitive to various issues during the data collection process, within the context of the ethical requirements of the study.

Research Population

Mugenda and Mugenda (1999) defines population as an entire set of individuals, events or objects having common observable characteristics about which generalization will be made. The target population for this study is primarily the local pastoralist communities in the three Counties of Greater Kapoeta (Kapoeta North, Kapoeta South and Kapoeta East counties). Religious leaders, experts, the NGO staff who are working in the study area, and government officials in study area as well as at state and national level are also targeted as sources of relevant information.

Sample Size

Salant and Dillman (1994) suggest four factors that need to be considered in determining sample size namely: (1) population size; (2) how varied the population is with respect to the characteristics of interest; (3) the smallest sub-group within the sample for which estimates are needed; and how much sampling error can be tolerated. The study considered a total of 418 participants (380 in the questionnaire survey and 38 in an in-depth interview). Respondents representing pastoralist households from three Payams (one from each of the three counties within the Greater Kapoeta area) participated in the questionnaire survey.

According to Kerejcie and Morgan (1970) as the population increases the sample size increases at a diminishing rate and remains, remains constant at slightly more than 380 cases. Hence, there is little left to be gained to warrant the expense and time spent to sample beyond about 380 cases. Therefore, the sample size is appropriate to represent the target population of the study who are all pastoralist communities in Greater Kapoeta. This has also served the researcher best considering the time and financial constraints.

Interview was conducted with 38 different respondents including Boma (village) chiefs, Payam executive officers, Social workers who are employees of NGOs and CBOs, county commissioners, experts, heads of departments of government offices and NGOs.

Table 1
Sample size and sampling strategies

Category of respondents		Sample	Sampling Strategies
Households Survey participants	Kauto Payam	154	Convenience sampling
	Longeleya Payam	97	Convenience sampling
	Paring Payam	129	Convenience sampling
Sub-total		380	
Interview Guide participants	Local chiefs	6	Snowballing sampling
	Social workers	12	Snowballing sampling
	Payam executive officers	3	Purposive sampling
	County Commissioners	3	Purposive sampling
	Heads of departments and experts in government offices, NGOs, and UN agencies	14	Snowballing sampling
Sub-total		38	
Total Sample size		418	

Sampling Procedure

Kumar (2005:164) defines sampling as “the process of selecting a few (sample) from the bigger group (the sampling population) to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation or outcome regarding the bigger group”. In this research different sampling strategies were deployed. First three Payams (districts), one from each of the three counties in the greater Kapoeta, were selected using purposive sampling based on their accessibility and the availability of large number of pastoralist communities at the time of the research. This was done through close consultation with county officials in each county. The selected Payams fairly represent the study population as communities of the study area largely share almost similar livelihoods source and predominantly one ethnic group (Toposa ethnic group).

Then, the number of respondents was calculated using Kerejeie and Morgan sampling table. The total number 380 survey participants were assigned to the three Payams in proportion to the total population of each Payam.

Convenience sampling was used to reach the targeted number of respondents in all selected Payams because it was difficult to employ other probability sampling techniques owing to mobility of the pastoralists and lack of complete list of households for the selected Payams. Engaging those who are available and willing until the intended target sample is secured was the only viable option given the time constraint. Candidates from local chiefs, NGO and CBOS social workers, experts, heads of NGOs and government offices were interviewed using snowball sampling technique because there was no certainty as to who may have the required information and being guided from one individual/office to another was viewed as a best option.

As recommended by Bryman.A (2001) snowballing is a form of convenient sampling in which the researcher makes initial contact with a small group of people who are relevant to the research topic and then uses these to establish contacts with others. All the three Payam executive officers of the selected Payams and County Commissioners of the three Counties were included.

Research Instrument

The study made use of both structured questionnaire and semi structured interviews to collect relevant information from various sources. A structured questionnaire has been to survey the attitude local pastoralist communities towards the relationship between drought and conflict while Semi structured interview will be deployed for NGOs representatives, government officials, other key informants because it is effective to extract Information from experts with specialist or privileged knowledge.

Besides, secondary sources of information such as Government reports, UN and INGOs documents were examined to triangulate the accuracy of information obtained during questionnaire survey.

The researcher arranged questionnaire designed in a way it suits to extract the intended data (information) from the respondents as well as in a manner it can be easily analyzed. Accordingly, Likert type questionnaires were set for the respondents representing pastoralist households.

The questionnaires have four parts: the first part contains questions intended to obtain respondents details such as sex, age group; part two questions are aimed at obtaining data on the prevalence and extent of drought, part three has questions mainly focusing on the coping mechanisms pastoralists practice during drought, and part four contains questions designed to obtain information about the relationship of drought and conflict.

The researcher also set semi-structured interview guide that was used as a checklist during conducting in-depth interview with experts and key informants. The actual interview with most respondents have significantly altered from the sequence and content in the guide due to the nature of information emerged during the conversation.

Validity of the Instrument

It was not possible for the researcher to pre-test the questionnaires at the selected study area. However, the researcher attempted to ensure the relevance of the questionnaires through seeking comments from experts in conflict studies from the United Nation Mission in South Sudan, the Eastern Equatoria State Peace Commission and CBOs and INGOs. The comments and ideas of such experts have helped the researcher to better shape the questionnaire.

Besides, to improve the validity of the questionnaires used in the survey the researcher availed the questionnaires to 10 raters related to the subject matter who are not participants in the research to check the language, clarity, relevance, comprehensiveness the content and length of the questionnaires. The raters were requested to judge each item in the questionnaire whether it is: somehow relevant = 1, quite relevant =2, relevant =3 or very relevant =4. The researcher then put the items in two categories with 1 and 2 in one, and 3 and 4 on another category. Then, the researcher calculated a Content Validity Index (CVI) as below.

$$CVI = \frac{\text{Items rated as relevant/very relevant by both raters (3 or 4)}}{\text{Total number of items}}$$

For the research instrument to be valid, the CVI needs to be within the accepted statistical range of 0.5 – 1. Thus, the questionnaire was tailored in a manner it reflects the research questions to ensure that inference based on the data is accurate and meaningful.

Reliability of the Instrument

Reliability is a measure of the degree to which a research instrument yields consistent results or data after repeated trials. Reliability refers to the consistency or dependability of measuring instrument (Leary). Thus, to establish the reliability of instrument, the researcher conducted a pilot study. Using the results of the study, the reliability of the instrument was computed using Crobach’s Alpha Coefficient (a) and used the formula below.

$$a = \frac{(K/K-1) \{1 - \sum SD^2_i\}}{SD^2_t}$$

Where: K=Number of questions in the questionnaire;
 SD^2_i =Standard Deviation Squared (Variance) for each individual item;
 SD^2_t =Variance for total items in the questionnaire

The reliability of the instrument was approved for coefficients within the accepted statistical range of 0.5 and 1. This provided an indication of the consistency of the responses to all the items as delineated while measuring the instrument. The pilot test was done to a sample with similar characteristics of the actual respondents in an attempt to ensure consistency. This enabled the researcher to identify questions which were not clear and put them right. The Cronbach's Alpha Test guaranteed with a coefficient greater than 0.6.

Cronbach's Alpha	No of items
0.697	57

Measurement of Variables

The variables were measured using nominal and ordinal types of measurements. Nominal scales of measurement were applied to cases which have some common set of characteristics such as sex and age. In nominal measurement numbers were assigned for purposes of identification, ordinal measurement categorizes elements being measured and also ranks them in to some order (Mugenda & Mugenda, 1999). The study used the five Likert scale to measure the independent and dependent variables as; SA=strongly agree, A=agree, NS=not sure, D=disagree and SD=strongly disagree.

Data Gathering Procedures

After securing an introduction letter from Kampala International University (KIU), the researcher submitted the letter to concerned authorities in the Eastern Equatoria State and then to County level officials to get their permission. Once the permission was granted the researcher recruited three data collectors who speak English and the local language Toposa. The data collectors were briefed about the purpose of the research and what is expected including on the essence of each item in the questionnaire.

Both the researcher and the data collectors spent three weeks in the field. In the field, two of the data collectors conducted an interview with survey respondents while

the researcher was engaged in in-depth interview with the aid of one of the data collectors as translator/interpreter mainly with local chiefs, social workers and Payam executive officers.

The researcher conducted interview with those who speak English (county commissioners, representatives of government offices, and NGOs representatives) without interpreter. All interviews were recorded using tape recorder to save time and get as much information as possible in short time; and the researcher extracted relevant portion of the entire records latter.

As someone who worked and lived in the South Sudan and the Eastern Equatoria State as staff of the UN Mission in Sudan and latter UN Mission in South Sudan for about four years, the researcher's own observation has contributed much into the research.

Secondary sources of data including, periodic reports of government ministries and NGOs, reports of related studies, and other relevant documents were assessed carefully and incorporated in the analysis.

Data Analysis

Both quantitative and qualitative data analysis methods were used in the research. The quantitative data collected from the field using the questionnaires were sorted, cleaned and condensed in to systematically comparable data patterns and was examined closely using percentages particularly for the profile characteristics and statistical mean range and Pearson Correlation to determine how the variables relate and make meaningful interpretations.

Qualitative data obtained from key informants, experts and officials were analyzed based on issues emerging and organized into various thematic areas. Results

of both quantitative and qualitative analysis were checked against previous studies and findings to avoid fallacy.

Ethical Considerations

Ethical considerations are thought to be the guiding rules that govern the practice of a profession. According to Mouton (2011:238), "the ultimate goal of all science is the truth. The epistemic imperative refers to the moral commitment that scientists are required to make to the search for truth and knowledge". Mouton emphasizes that the epistemic imperative is not merely a good idea but acts as a regulative principle that guides the conduct of scientists.

For the purpose of this study, permission was sought from all the relevant authorities including attaining letters of transmittal from Kampala International University and permits from administration officials at all levels in the research area. The researcher explained the purpose of the research to respondents to obtain their consent and ensure that they made an informed decision to participate in the research. Further, all information derived from the study was treated with utmost confidentiality.

Limitations of the Study

The study focused only on the Greater Kapoeta area of Eastern Equatoria State and didn't include other areas within the state and in neighboring states which are home to people with similar livelihood style. Nor did the study include communities across borders which are very much related and in continuous interaction with the pastoralists in Greater Kapoeta such as the Turkana of Kenya, Nyangature of Ethiopia and Karamajong of Uganda.

Therefore, the research does not provide comparative views and perceptions of the other communities in the proximity both inside South Sudan and within the East

African Sub-Region. This limited the diversity of the study in terms of area representation and ethnic diversity.

The study limited itself to areas which are accessible falling short of including all locations. Though the fact that the study was conducted during a rainy season (September and October) gave an opportunity to meet the pastoralists in their near homestead grazing areas, it also created an obstacle to access most of the areas without all weather roads. As a result the areas included in the survey are those along or close to all weather roads.

Lack of official records of pastoralist communities within a given geographic area made it difficult to follow more appropriate sampling procedure during the study. So, using convenient sampling might have influenced the representativeness of the research to the actual characteristics of the population under the study.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Introduction

This chapter presents the findings of the study in relation to the purpose of the study. The main aim of the analysis was undertaken to meet the research objectives. This chapter presents the response of the study questions which was intended to investigate the effect of drought in resource based conflicts with a case study in the Greater Kapoeta area of Eastern Equatoria State, South Sudan. In this chapter, data collected under the stated objective is presented in two sections where one presents information background on the respondents, while section two presents results on the objectives of the study.

The finding are presented using descriptive statistics to describe the basic features of data providing summaries, frequencies and means in order to determine the relationships between the independent variable, drought, on the intensity of resource based conflicts.

To fully cover the sample size, a total of 380 questionnaires have been distributed which are fully collected giving a 100 percent retention rate because the questionnaires were filled at the field by data collectors with the liberty of approaching any pastoralist household head until they reach the desired number of respondents. In other words, the research approach does not limit data collectors to rely on pre selected households in which case absence of households could affect the retention rate.

The total number of respondents used to test the hypothesis was 380 (100%). So, there is no any influence on the research regarding the percentage of respondents out of the sample frame.

Profile of Respondents

The study involved respondents of varying characteristics which enabled the researcher to obtain the necessary background information on the respondents. The characteristics of respondents investigated included gender, age, and geographic location. The background characteristics of respondents helped the researcher to know the general information of respondents and its contribution to the variables investigated.

Moreover, the profile of respondents had a direct relationship to the variables investigated in this study. The mean age of participants was important in terms of relating the relevance of the study in its inclusion of the age category who are actively involved in violent conflicts among pastoralist communities. It was also relevant to ensure that the view of both sexes is included regarding causes of conflict. Though women have less involvement in violent conflicts, they are very much affected by such conflicts that their view was so important in this research. The geographic characteristics of respondents were also important to ensure the fair representation of the three counties under study.

People interviewed during the study out of the survey were in a manner they represent the different groups of society in study area and outside who have in one way or another interested in the variables considered in the research. The participants outside the survey research are characterized in terms of their sex, occupation and organization they work with.

Table 2
Profile of Respondents in the survey

Variable		Kauto Payam	Loneleya Payam	Paring Payam
Number of respondents		154	97	129
Sex of respondents	Male	108	84	120
	Female	46	13	9
Mean age of respondents		39	41	43

Source: Field Data (2012)

The study was carried out in Kauto, Loneleya and Paring payams from the three counties of Eastern Equatoria State, South Sudan namely Kapoeta East, Kapoeta South and Kapoeta North respectively.

Out of 380 survey respondents 68 (17.9%) were women. Majority of respondents (82.1%) were men. There were more women representation in Kauto (46) compared to the other areas. The least women respondents has been in Paring Payam

The respondents represent different age groups of the pastoralist communities ranging from 18 years to 72 years. However, majority of the respondents are groups between 35 and 45 years of age. The mean age of the respondents is 39, 41 and 43 years in Kauto, Loneleya and Paring payams respectively.

Empirical findings

This part of the study presents the findings in line with the objectives that guided the study. The presentation highlights the verification of the research objectives and presents views of respondents obtained from the questionnaires administered. The researchers used descriptive statistics mean ranges and Pearson Correlation to make necessary comparisons.



Effects of drought in resource based conflicts among pastoralists

The researcher sought views of respondents to examine how the prevalence of drought affect the availability of most needed resources among pastoralist communities such as water and grazing resources and implicitly affect the recurrence of conflict in the Greater Kapoeta area of Eastern Equatoria, South Sudan. The area under consideration is among the locations in the new nation of South Sudan which are highly affected by conflicts among pastoralists over resources.

Effects of drought in resource based conflict in Greater Kapoeta

Mean Range	Response mode	Interpretation
4.21-5.00	Strongly agree	highly relevant
3.41-4.20	Agree	relevant
2.61-3.40	Neither agree nor disagree	somehow relevant
1.81-2.60	Disagree	almost irrelevant
1.00-1.80	Strongly disagree	irrelevant

Table 3
Drought, resource scarcity and conflict among pastoralists

Item as livelihood source and natural resources	Mean	Interpretation	Rank
depend on livestock as sources of livelihood	4.21	Highly relevant	5
production is a major source of food in the area	4.28	Highly relevant	3
form a central part of people's culture	4.31	Highly relevant	2
large size of livestock is a source of prestige	4.07	Relevant	6
production depends on the availability of grazing and water	4.40	Highly relevant	1
water resources are scarce in the area	4.05	Relevant	7
drought and water threatens livelihoods of pastoralists	4.25	Relevant	4
	4.22	relevant	
Manifestation	Mean	Interpretation	Rank
drought a recurrent phenomenon in the area	3.65	relevant	7
frequency of drought is increasing in recent years	3.92	relevant	6
pasture and grass dries during drought	4.20	Highly relevant	3
livestock and people becomes scarce during drought	4.53	highly relevant	1
livestock die or are sold when there is drought	3.60	relevant	8
livelihood is poor during drought	4.30	Highly relevant	2
livestock encountered with serious food shortage	4.15	relevant	4
drought threatens livelihoods of the pastoralist in the area	4.00	Relevant	5
	4.04	relevant	
Resource scarcity and migration as coping strategy	Mean	Interpretation	Rank
pastoralists in the area migrate in search of greener pasture and water	4.14	relevant	4
pasture is scarce in Eastern Equatoria during drought season	3.81	relevant	7
pasture and grazing are scarce in their area due to drought,	4.23	Highly relevant	2
pastoralists of the area cross state boundaries with their livestock	4.30	Highly relevant	1
pastoralists of the area cross national borders in search of water and	4.05	relevant	5
pastoralists of the area migrate to areas occupied by other pastoralist	3.94	Relevant	6
pastoralists when no other options	4.20	relevant	3
pastoralists of the area and other pastoralist communities can migrate	4.10	relevant	
pastoralists where a better pasture and water is available			
pastoralists migrate to areas where others conduct farming			
pastoralists of the area can take place without prior			
pastoralists with local occupants at the destination			
Competition over resources and conflict	mean	Interpretation	Rank
competition over scarce resources cause conflict among pastoralist	3.91	relevant	3
conflict within Greater Kapoeta area	3.80	relevant	4
conflict in the three counties of Greater Kapoeta during drought	3.48	relevant	7
conflict between pastoralists of Greater Kapoeta and communities in	4.21	Highly relevant	2
Greater Kapoeta States is more prevalent during drought	4.32	Highly relevant	1
conflict of the area with other pastoralists in neighboring	3.76	relevant	5
pastoralists are more during drought than in normal years	3.71	relevant	6
conflict occurs in wider areas of the region many pastoralists	3.88	relevant	
pastoralists share grazing area often leading to conflict over grazing			
pastoralists graze their livestock in the same area, cattle			
raiding are prevalent and intensify conflict			
during drought pastoralists who are traditional enemies may meet			
pastoralists grazing and enter into violent conflict			

Pastoralist livelihoods and natural resources

Respondent expressed that they strongly agreed with a mean of 4.21 that pastoralists of the greater Kapoeta area are dependent on their livestock for subsistence. This is also confirmed from the interview with experts and government officials who said livestock production accounts for more than 70 percent of livelihood sources in the area.

Respondents also strongly agreed with a mean of 4.28 that people depend for food on the outcome of livestock products. Local chiefs and social workers described during an interview that milk, meat and blood from livestock constitute major source of food though some cereals are also grown or purchased to supplement.

Livestock are not only sources of livelihood for pastoralists in the Greater Kapoeta area but also play a vital role in the socio-cultural makeup of the society. When respondents view was obtained if livestock are at the centre of society's culture majority strongly agreed with a mean range of 4.31.

Chiefs and local elders expressed during an interview that cattle are cardinal in determining the status of individuals within the community. The more cattle one owns, the more powerful and influential in the community. Responding to whether more cattle bring more prestige in society, majority of the respondents agreed with a mean range of 4.07.

Respondents strongly agreed with a mean range of 4.40 that livestock production is heavily dependent on the availability of resources mainly water and grazing. Interviews conducted with local people, experts and government officials expressed the importance of such resources in determining the livelihoods of the pastoralists who depend on their animals for survival. The availability of such resources

means the wellbeing of the pastoralists, and their absence/scarcity means a serious concern for the pastoralists.

Despite that resources like water and grazing land are the key requirements for pastoralists' livelihood; such resources are not all the time available as required. Majority of respondents with a mean range of 4.07 agreed that these resources are often scarce in the Greater Kapoeta area. Documents and primary sources interviewed also confirm that the availability of pasture and water is reducing from time to time.

Respondents strongly agreed with a mean range of 4.25 that the scarcity of much needed resources such as water and grazing land is affecting livestock production and therefore threatening the livelihoods of pastoralists in the greater Kapoeta area.

In conclusion, majority respondents strongly agreed with a mean range of 4.22 that the population in the Greater Kapoeta area depend on livestock not only as sources of livelihoods but also as sources of prestige. Yet, livestock production is threatened by scarcity of water and grazing land resources.

Drought prevalence and manifestations

Drought is not a rare phenomenon in the semi arid area of Greater Kapoeta like in many of the semi arid land in the horn of Africa. Respondents agreed with a mean range of 3.65 that drought is recurrent in their community.

Respondents further agreed with a mean range of 3.92 that the occurrence of drought in the semi arid land of Greater Kapoeta is increasing in recent years than it used to be before. Experts and staff of international NGOs operating in the area stated that the occurrence of drought is becoming frequent in recent years as a result of the global climate change. The respondents expressed that drought occurs in the area every three years on average. Besides, they said the amount of rainfall even in normal years is decreasing.

Drought is associated with various environmental changes in the area. Respondents strongly agreed with a mean range of 4.20 that vegetation and grass dries out when there is drought.

Similarly the availability of water for human beings and livestock reduces significantly with the occurrence of drought. Majority of the respondents strongly agreed with a mean range of 4.53 that water for human and livestock consumption becomes scarce during drought periods. Similarly, interviewees from village chiefs and social workers indicate that the already limited water resources in the area get more depleted when drought hits the semi arid area of the Greater Kapoeta area. According to the response obtained drought highly affects the availability of animal feed causing damage on the survival of livestock. Respondents agreed with a mean of 3.60 that animals perform poorly or even die during drought.

Similarly, crop production is highly affected during drought even more seriously than animal production. Respondents strongly agreed with a mean range of 4.30 that crop production reduces significantly during drought. Interviews with local communities and experts show that crop production is practiced to supplement livestock production mainly by women. Crop production is severely affected by drought than livestock production because pastoralists take coping mechanisms to ensure survival of their livestock by moving them to places where they can find green pasture and water.

Poor performance of livestock reduces availability of food for human beings coupled with poor performance of crops. Respondents agreed with a mean range of 4.15 that people in the area are faced with serious food shortage and hunger at times of drought.

Respondents agreed with a mean range of 4.00 that drought threatens the sustainability of the pastoralist communities in the Greater Kapoeta through reducing productivity of livestock resources.

Conclusively, respondents agree with a mean range of 4.04 that drought is prevalent, increasing from time to time and depleting water and pasture resources. This in turn is threatening the survival of pastoralist communities in the area.

Drought, resource scarcity and migration as coping strategy

As has been shown in the above responses drought reduces the availability of key resources such as water and grazing land causing serious challenge to the survival of pastoralists' livelihood. In response to such threats pastoralists undertake various coping mechanisms. But, since the focus of this research is to identify the role of drought in causing or aggravating resource based conflicts, migration as a coping mechanism is examined. Migration is tailored in to three main locations: within the state to other counties, to other states within South Sudan, and across international borders.

Asked for their view whether pastoralists migrate to other counties within Eastern Equatoria State out of the Greater Kapoeta area, respondents agreed with a mean range of 4.14 that pastoralists move with their livestock to neighboring counties during drought. Chiefs and social workers expressed during interview that it is common for pastoralists of Kapoeta East and Kapoeta South to migrate to Bodi County where water and grazing is relatively better available due to the rivers flowing from the mountains in the county. Similarly, those in Kapoeta North often move to Lopa/Lafon County in search of grazing and water.

When the situation is more serious, pastoralists of the Greater Kapoeta area also migrate to neighboring states. Respondents agree with a mean of 3.81 that pastoralist migrate to other states as drought coping strategy. As learnt during an interview with key informants, pastoralists from the three counties (mainly from Kapoeta East) migrate to Pochalla and Boma areas of Jonglei State at times of drought.

However, given the location of the Greater Kapoeta area migration of pastoralists across international borders is more prevalent as drought coping mechanism.

Respondents strongly agreed with a mean range of 4.23 that pastoralists in their communities migrate across borders in search of grazing and water at times of drought. Both Payam executive officers and County Commissioners confirm that pastoralists in their area of responsibility often migrate to Kenya, Uganda and Ethiopia during drought. Various researches and other official documents also show that there is a high incidence of border crossing by pastoralists of countries in the horn (mainly South Sudan, Ethiopia, Kenya and Uganda).

Though pastoralists often look for safe areas while migrating in search of pasture and water, they at times migrate to areas occupied by other pastoralists if other options are not available. Respondents strongly agreed with a mean of 4.30 that there is a possibility of migrating to areas already occupied by other pastoralists in case there are no other options.

Not only do pastoralists move to already occupied areas, but there is also high possibility for different pastoralist communities to move into same location in search of water and grazing. Majority of respondents with a mean range of 4.05 agreed that pastoralists from their area and other pastoralist communities land into the same area during drought. Experts and government officials interviewed during the research expressed that such conditions are becoming more often because drought is not limited to certain areas but more common in many areas of the region.

Respondents also agreed with a mean range of 3.94 that pastoralists in their community migrate with their livestock to areas where other communities practice farming. This was expressed during interviews to have been common especially when pastoralists from Greater Kapoeta migrate to Pochala and Boma in Jonglei state.

Usually migration to an area where other people claim ownership is conducted with prior negotiation with the occupants. However, this may not be always the case especially if access is not granted and other options are unavailable. Respondents

strongly agreed with a mean of 4.20 that there are cases where pastoralist communities in the area migrate to areas where access is not granted by other occupants.

In conclusion, respondents agreed with a mean range of 4.10 that pastoralists in the Greater Kapoeta areas migrate within the state, to other states and across borders to cope up with drought; and may go to areas occupied by others or go to the same area with other pastoralists.

Drought, competition over resources and conflict

To investigate whether competition for scarce resources causes conflict among pastoralists the researcher sought the view; and majority of them agreed with a mean range of 3.92 that resources constitute as main causes of conflict in the area. Respondents have earlier agreed that drought plays a role in reducing availability of resources.

The researcher further sought the respondents' views whether pastoralists in the three counties of Greater Kapoeta conflict with neighboring counties during drought than in normal years and majority of them agreed with a mean range of 3.80. During an interview with the County Commissioner of Kapoeta South, it was learnt that many pastoralists of the county migrate to Budi County and enter into conflict with the residents of Budi County.

As for conflict between pastoralist of Greater Kapoeta and those in neighboring states it is assumed to increase at times of drought when there is movement of people and livestock in search of grazing and water. Indeed, majority of the respondents with a mean range of 3.48 agreed that drought increases the prevalence of conflict between pastoralists of the study area and those in neighboring states. It was learnt during interview with local chiefs that people in the Greater Kapoeta area migrate to Jonglie and conflict mostly with farmers when cattle from Kapoeta damage farm lands.

On whether pastoralists of the area enter in to conflict with other pastoralists in neighboring countries during drought than in normal years, majority of the respondents strongly agreed with a mean of 4.21 that conflict with other pastoralists in neighboring countries increase significantly during drought.

The study further obtained data on whether different pastoralist communities migrate to same grazing area often leading to conflict over grazing when drought occurs in wider areas of the region; and respondents strongly agreed with a mean of 4.31 that at times of drought covering wider areas within the sub-region pastoralists cross with each other in a same grazing area and possibly enter into conflict. On the same note, experts interviewed during the research pointed out that in an area known as Ilemi Triangle claimed as by the Toposa of South Sudan, Turkana of Kenya and Nayngature of Ethiopia where they often meet to graze their livestock and clash with each other.

The study also sought information whether cattle stealing and raiding are prevalent and intensify conflict when several pastoralists graze their livestock in the same area at times of drought and the respondents agreed with a mean range of 3.76 that gathering in one area enhances cattle stealing and conflict.

The researcher further ascertained views on whether pastoralists who are traditional enemies meet in common grazing and enter into violent conflict during drought. Respondents agreed with a mean rate of 3.71 that there is a possibility for traditionally rival pastoralists to meet in a grazing area at times of drought.

In conclusion, there research found out that there is high relationship between drought, scarcity of resources and conflict among pastoralist. On average respondents agree to this fact with a mean range of 3.88.

CHAPTER FIVE

FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents and discusses the major findings of the study, draws conclusions and suggests recommendations on how to reduce vulnerability of pastoralists during drought and reduce conflict among the different pastoralist communities in the Greater Kapoeta and neighboring areas. The discussions are presented in accordance with the study objectives stated in chapter one that the study attempted to fulfill.

FINDINGS

Pastoralist livelihoods and natural resources

From the analysis conducted, the study findings reveal that most people in the Greater Kapoeta area are pastoralists who rely on livestock resources namely cattle, goats and sheep. Statistical analyses show that the pastoralist communities in the study area are highly dependent on livestock as source of food and clothing. Milk, meat and blood obtained from livestock form the main source of food though crop production supplements to a limited extent.

According to findings of the study, livestock resources are also at the centre of the pastoralists' culture. Cattle play vital role in traditional practices such as marriage. A good deal of cattle heads are offered by young men to the family of girls as dowry for a marriage to take place. So, livestock resources not only provide livelihood sources for families but also are key in the formation of families. The study found that there exist positive correlation between number of livestock one owns and the status one has in society. The more number of cattle one owns the higher status given.

Similarly the study found out strong relationship between the pastoralism as source of livelihood and natural resources mainly water and grazing land. Owning many livestock resources requires availability of pasture and water. With the increase in number of livestock resources the need for more resources increases as well.

Furthermore, the study revealed that the availability of crucial resources such as water and green pasture are not in match with the increasing number of livestock resources in the study area. Indeed, water and grazing are usually scarce that there is stress among the pastoralists to carry on their traditional way of life.

As a result, the study found out that pastoralists in the area feel that their livelihood is threatened with the decrease in the availability of natural resources due to various reasons among which drought is one.

Prevalence and manifestation of drought

The study found out that drought is recurrent in the study area. Both local people and experts confirm that drought is no more a rare phenomenon but something that occurs often. Literature on the arid and semi arid areas of the East African sub region also show that drought is almost a regular happening the calendar of pastoralist communities. It was also learnt from the study finding that the frequency of the occurrence of drought is increasing from time to time.

Further, the study found out that drought and resource scarcity are related. The statistical analysis shows that there is strong relationship between drought years scarcity of natural resources. At times of drought grazing and water resources reduce significantly as vegetation and grass dry out. Water reservoirs and rivers also decrease their contents or completely dry out.

It was also learnt from the study that the performance of livestock production significantly decreases during drought because of scarcity in animal feed. The livestock decrease in weight or even die if the extent of drought is high. Animals yield less milk, meat and blood resources. Similarly, the production of crops (dominantly sorghum) decrease during drought.

The reduction in the yield of livestock products and the production of crops cause serious food shortages among the pastoralist communities in Greater Kapoeta. Hence drought threatens the survival of the communities. So, the pastoralists are often obliged to look for other options to ensure their survival and the survival of their precious assets, their livestock.

Drought, resources scarcity and migration as coping strategy

The study found out that the pastoralist communities of Greater Kapoeta use migration to other areas where they can get water and grazing for their livestock as a primary coping strategy at times of drought.

According to the study, pastoralists of the area cross county boundaries, state boundaries and national boundaries in search of water and green pasture. Seasonal migrations to dry season grazing are often practiced every year, but drought forces them to migrate out of the usual times of the year and out of the regular migration areas.

In respect to the study findings, pastoralists of the area migrate to areas occupied by other communities as traditional grazing land, areas contested between themselves and other pastoralists, areas where other communities practice agriculture, or to an areas where others also migrate for the same purpose. It is also possible for the pastoralists of Greater Kapoeta and their traditional enemies to meet in the same grazing area especially when both face drought situation.

Migration to areas claimed by others as traditional grazing area is often conducted through negotiating and obtaining prior agreement of the occupants. But the study found that migration also occurs without securing permission if access is denied by the legitimate occupants for any reason.

Drought, competition over resources and conflict

As per the findings of the study, conflict between the pastoralists of Greater Kapoeta and other communities within the Eastern Equatoria State, in other states or in neighboring countries is more prevalent at times of drought than in normal years.

When the Greater Kapoeta pastoralists who are predominantly Toposa ethnics cross to other counties such as Budi, they are not often welcomed by the natives and in most cases conflict erupt. In normal years, the Toposas avoid going to Budi County with their livestock, though they sometimes go for cattle raiding or counter raiding.

The study also show that drought induce more movement to other state, Jonglei where conflict occur between the pastoralists from Greater Kapoeta and pastoralists of Jonglei. Conflict also occurs when the livestock of Greater Kapoeta cross into farmlands.

However, the study findings reveal that drought constitutes as a major cause of conflict between the Toposa pastoralist and other pastoralists in neighboring countries (Kenya, Ethiopia and Uganda). This is in line with the study finding that the pastoralists in Greater Kapoeta migrate more to the border areas with those countries that they do domestically. Besides, there are contested areas by pastoralists in both countries that going to such areas carry more interpretation than simply for grazing purpose.

Therefore, the linkage between drought induced resource scarcity, competition over resources, local coping mechanisms such as migration, and conflict is strong according to the study findings.

CONCLUSIONS

The conclusions drawn were guided by the study objectives of this research.

Pastoralist livelihoods and natural resources

Natural resources such as grazing land and water were found to be key factors influencing the livelihoods of people in the Greater Kapoeta who are predominantly pastoralist. Yet, the availability of these crucial natural resources is limited in the semi arid land of Greater Kapoeta that the sustainability and development of pastoralism as a life style is quite endangered. The scarcity of natural resources has reached to the level it cannot support the increasing population of the area.

Drought as aggravating factor to resource scarcity

The prevalence of drought in the semi arid area of Greater Kapoeta has been undoubtedly ascertained in this research. Drought is no more a once upon a time phenomenon but something a frequent occurrence that affects lives of many people who almost entirely rely on the availability of water and land resources for survival. The prevalence of drought is increasing from time to time as a result of climate change.

Drought depletes the already scarce water and pasture resources. Failure of rains causes drying out of vegetation, grass and water sources. As a result it brings more stress to the environment and induces further depletion owing to over grazing of the limited pasture available.

Effects of drought in natural resources based conflict

Drought has significant contribution in enhancing conflict over resources among pastoralist communities of the area. It reduces the already strained resources and increases the competition over the mutually needed fundamental resources among the different pastoralist communities both nationally and across national boundaries.

It was strongly established that drought forces pastoralists of the area to migrate during drought to sustain their livestock where they often conflict with other communities. The occurrence of conflict in wider areas depletes resources in the sub-region and makes the competition more tense creating a ground for conflict among the different groups. Gradually, the frequent occurrence of drought is depleting the resources making conflict for the limited resources more imminent in the area.

Therefore, though drought in itself does not mean a prerequisite for conflict among pastoralists, it fuels resource based conflicts given the level of resource scarcity and lack of alternative livelihood sources among the pastoralists of Greater Kapoeta and their neighbors.

RECOMMENDATIONS

To state and national government

The government of the Republic of South Sudan and the state government need to devise appropriate policies that address the problems of the pastoralists through closely liaising with the pastoralists themselves so as to create ensure sustainability of the latter's livelihoods;

National and state development should be designed in such a way they include alternative sources of livelihoods for the pastoralists whose subsistence is threatened due to the ever increasing effects of climate change such as drought. There should be some income diversification schemes to relieve pastoralists from totally depending on livestock;

There government needs to devise mechanisms that can improve the productivity and efficiency of livestock production to enable pastoralists obtain more output from smaller size of livestock;

The government at all levels should give due emphasis to environmental protection efforts aimed at preventing further environmental degradation and depletion of resources. There has to be innovative approaches of water conservation methods and improved fodder varieties to reduce the vulnerability of pastoralists;

Effective awareness raising efforts need to be devised and implemented to change the perception of pastoralists on the procession of livestock simply as symbols of prestige rather than as sources of livelihood, which can help pastoralist limit their livestock size and alleviate the pressure over existing resources.

To national and international NGOs, civil society organization and media outlets

A number of NGOs operate in the Greater Kapoeta area. These NGOs need to channel their assistance to projects that address the root causes of problems in the area rather than to the immediate outcomes;

NGOs need to play a role in advocating more sustainable development approaches that can help in guiding government policies concerning pastoralist communities;

NGOs should focus on initiating holistic conflict mitigation approaches through identifying the main concerns of different pastoralist communities around the area, and suggesting ways of mutual cooperation towards mutual benefit;

NGOs should help in enhancing the development socio economic infrastructures in the area through identifying and bridging gaps so as to avoid duplication with government programs and among the NGOs themselves.

Civil society organizations in the area can play vital role in promoting peace and coexistence among the different pastoralist groups through facilitating community level dialogues

Civil societies can also bridge the different perceptions of policy makers and actual needs of local communities through soliciting the different concerns of the communities and channeling them to government structures at all levels. Through voicing the interest of the communities in different forums, they can help shape government policies that affect the lives of pastoralist communities.

Religious organizations have a wider reach and acceptance among local communities. Using such ground institutions such as the Catholic Church are already conducting reconciliation and peacemaking efforts both locally and across borders. For example, the Catholic church has brought Topsa elders of South Sudan and their Turkan counterparts from Kenya together to promote peace among the two. This kind of effort should be further enhanced and extended to the various pastoralist groups in South Sudan and across borders.

Media houses that operate at local, state, national and international levels should also be committed in airing the problems and needs of the pastoralists to alert concerned authorities and enable them to respond to such needs.

By providing relevant information regarding grievance of different pastoralist groups, conflict incidents and tensions, media houses can play in calling for government and other actors to prevent expansion of violent conflicts.

To researchers

The livelihoods of pastoralists in the area and the challenges related to that are complicated and vast. Yet, there is no comprehensive study that demonstrates the actual challenges and peculiar problems of pastoralists in the area including the socio cultural and geographic characteristics unique to area. Hence, further detailed studies can be instrumental in shaping future government policies and development projects of other actors.

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APPENDICES

Appendix 1 - Transmittal Letter

OFFICE OF THE DEPUTY VICE CHANCELLOR (DVC)

SCHOOL OF POSTGRADUATE STUDIES AND RESEARCH (SPGSR)

Dear Sir/Madam,

**RE: INTRODUCTION LETTER FOR MR. NUGUS GEBRESELASIE HADERA TO
CONDUCT RESEARCH IN YOUR INSTITUTION**

The above mentioned candidate is a bona fide student of Kampala International University pursuing a Masters Degree of Conflict Resolution and Peace Building. He is currently conducting a field research for his dissertation entitled,

**DROUGHT AND NATURAL RESOURCE BASED CONFLICTS AMONG PASTORALISTS IN
GREATER KAPOETA AREA OF SOUTH SUDAN**

Your institution has been identified as a valuable source of information pertaining to his research project. The purpose of this letter then is to request you to avail him with the pertinent information he may need.

Any data shared with him will be used for academic purposes only and shall be kept with utmost confidentiality.

Any assistance rendered to him will be highly appreciated.

Yours truly,

Novembrieta R. Sumil,ph.D.

Deputy Vice Chancellor, SPGSR.

Appendix II - Clearance from Ethics Committee

Date_____

Candidate's Data

Name_____

Reg.#_____

Course_____

Title of Study_____

Ethical Review Checklist

The study reviewed considered the following:

- Physical Safety of Human Subjects
- Psychological Safety
- Emotional Security
- Privacy
- Written request for Author of Standardized Instrument
- Coding of Questionnaires/Anonymity/Confidentiality
- Permission to Conduct the Study
- Citations/Authors Recognized.

Results of Ethical Review.

- Approved
- Conditional (to provide the Ethics Committee with corrections)
- Disapproved/Resubmit proposal.

Ethics Committee (Name and Signature)

Chairperson_____

Members_____

Appendix III - Informed Consent

I am giving my consent to be part of the research study of Mr. Nugus Gebreselasie Hadera that will focus on the impact of drought on natural resource based conflicts in greater Kapoeta Area of South Sudan. I shall be assured of privacy, anonymity and confidentiality and that I will be given the option to refuse participation and right to withdraw my participation any time.

I have been informed that the research is voluntary and that the results will be given to me if I ask for it.

Initials: _____

Date _____

Appendix IV - Research Instrument
INTERVIEW AND FOCUS GROUP DISCUSSION

Dear Sir/ Madam

I am a candidate for Masters Degree of Conflict Resolution and Peace Building at Kampala International University and currently pursuing a Thesis entitled THE IMPACT OF DROUGHT ON NATURAL RESOURCE BASED CONFLICTS IN GREATER KAPOETA AREA OF SOUTH SUDAN. In view of this empirical investigation, may I request you to be part of this study by answering the questionnaires or participating in an interview. Rest assured that the information that you provide shall be kept with utmost confidentiality and will be used for academic purposes only.

Thank you very much in advance

Yours faithfully

Mr. Nugus Gebreselasie Hadera

Appendix IVA - questionnaire FACE SHEET

Code # _____ Date the questionnaire completed:

PART 1: RESPONDENT'S PROFILE

1. Respondent's Gender

☐ Male ☐ Female

2. Respondent's age _____

3. Respondent's Payam (district)

☐ Kauto ☐ Longeleya ☐ Paring

PART 2:

Direction 1: Please write your rating on the space before each option which corresponds to your best choice in terms of level of motivation. Kindly use the scoring system below:

Score	Response Mode	Description	Interpretation
5	Strongly Agree	You agree with no doubt at all	highly relevant
4	Agree	You agree with some doubt	relevant
3	Not sure	You are not sure of the issue	somehow relevant
2	Disagree	You disagree with some doubt	almost irrelevant
1	Strongly Disagree	You disagree with no doubt at all	irrelevant

PART 2.1: pastoralists' livelihood and natural resources

Questions	5	4	3	2	1	Total
Pastoralists depend on livestock as sources of lively hood						
Livestock production is a major source of food in the area						
Livestock form a central part of people's culture						
Owning large size of livestock is a source of prestige						
Livestock production depends on grazing and water resources						
Pasture and water resources are scarce in the area						
Lack of pasture and water threatens livelihoods of pastoralists						

PART 3: Drought prevalence and manifestation

N	Questions	5	4	3	2	1	Total
	Drought is a recurrent phenomenon in the area						
	The occurrence of drought is increasing in recent years						
	Vegetation and grass dries during drought						
	Water for people and livestock becomes scarce during drought						
	Cattle perform poorly or die when there is drought						
	Crop performance is poor during drought						
	People are encountered with serious food shortage						
	Drought threatens livelihoods of the pastoralist in the area						

PART 4: Drought, resource scarcity and migration as coping strategy

N	Questions	5	4	3	2	1	Total
	Pastoralists in the area migrate in search of greener pasture and water to other areas in Eastern Equatoria during drought season						
	When water and grazing are scarce in their area due to drought, pastoralists of the area cross state boundaries with their livestock						
	Pastoralists of the area cross national borders in search of water and pasture at times of drought						
	Pastoralists of the area migrate to areas occupied by other pastoralist communities when no other options						
	Pastoralists of the area and other pastoralist communities can migrate to same location where a better pasture and water is available						
	Pastoralists migrate to areas where others conduct farming Migrations by pastoralists of the area can take place without prior negotiation with local occupants at the destination						
	Pastoralists in the area migrate in search of greener pasture and water to other areas in Eastern Equatoria during drought season						

PART 5: General assessment on the capacity of customary court chiefs

N	Questions	5	4	3	2	1	Total
	Competition over scarce resources cause conflict among pastoralist communities within Greater Kapoeta area						
	Pastoralists in the three counties of Greater Kapoeta conflict with neighboring counties during drought than in normal years						
	Conflict between pastoralists of Greater Kapoeta and communities in neighboring States is more prevalent during drought						
	Pastoralists of the area conflict with other pastoralists in neighboring countries more during drought than in normal years						
	When drought occurs in wider areas of the region many pastoralists migrate to same grazing area often leading to conflict over grazing						
	When several pastoralist graze their livestock in the same area, cattle stealing and raiding are prevalent and intensify conflict						
	At times of drought pastoralists who are traditional enemies may meet in common grazing and enter into violent conflict						
	Competition over scarce resources cause conflict among pastoralist communities within Greater Kapoeta area						

Appendix IVB - Semi structured interview guide for key informants

I. Candidate information

- a. Name _____
- b. Sex _____
- c. Age _____
- d. Organization _____
- e. Position _____

Date interviewed _____

II. Questions

1. How do you describe the overall social, economic, cultural and environmental situations of the Greater Kapoeta area?
2. In your opinion, to what extent are the livelihoods of communities in the area secured and sustainable?
3. What major threats to the sustainable living of the local communities do you perceive?
4. How significant are natural resources such as water, land, and pasture to the livelihoods of the communities in Greater Kapoeta?
5. What are your observations regarding climate change phenomena, particularly, drought and its impact on the availability of natural resources in Greater Kapoeta in the past years?
6. What is your assessment of the prevalence, type, actors and causes of conflict in the area?
7. How can drought, natural resources scarcity, and conflict be related in the context of pastoralist livelihoods in Greater Kapoeta?
8. If your organization/ministry operates in the Greater Kapoeta area, what program/s is your organization involved in?
9. How do government and nongovernmental organizations respond to drought emergencies in the area? What are the impacts of their intervention?
10. What do you think of the trend of drought and its consequence in future?

Appendix VI – Researchers Curriculum Vitae

Personal Profile

Name: Nugus Gebreselasie Hadera
 Date of birth: 29 October 1969
 Sex: Male
 Nationality: Ethiopian
 Profession: Public Information Officer
 Contact Address: +211955035650 or +251914702079
 e-mail: nigusg@yahoo.com or haderan@un.org

Educational Background

Year	Institution	Award
2010 – 2012 (on progress)	Kampala International University	Master of Conflict Resolution
1987 – 1991	Addis Ababa University	Bachelor of Arts in foreign language and literature (English)

Work Experience

Year	organization	Position
2003 – present	UN	Public Information Officer
2001 – 2002	SOS Ethiopia	Sponsorship officer
1995 – 2000	Relief Society of Tigray	Public Relations Officer
1991 – 1994	Ethiopian News Agency	Journalist



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