THE IMPACT OF SOCIO-ECONOMIC ACTIVITIES ON COMMUNAL SECURITY: A CASE STUDY OF TURKANA FISHERMEN AND LOWER OMO AGROPASTORALISTS ON LAKE TURKANA.

BY

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C50/87297/2016

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A PROJECT SUBMITTED TO THE DEPARTMENT OF POLITICAL SCIENCE AND PUBLIC ADMINISTRATION, UNIVERSITY OF NAIROBI, IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ARTS IN INTERNATIONAL RELATIONS.

2021

DECLARATION

I, Lisa Adiedo, declare that this is my original work, and that it has not been presented to any other university or institution of higher learning for academic credit.

Signature: L.M.A Date: 16/07/ 2021

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APPROVAL

Supervisor: This research project has been submitted for examination with my approval as the official university supervisor.

Signature:  Date: 16/07/2021

Dr. George Katete

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DEDICATION

This research is dedicated to my dearest family: to my late dad, Evans Adiedo, who passed on right before I went to the field and who was a traveller, a citizen of the world, whose curiosity about people inspired the same in me. This work is also dedicated to my mom and my siblings, whose immense support has been unending.

ACKNOWLEDGEMENTS

I express my sincere gratitude to the University of Nairobi which has provided me with an educative experience, and where during my time as a student, I learned a lot and have as result become an independent scholar.

I would also like to express my gratitude to my supervisor, Dr. George Katete, for his invaluable time and dedication to my work and to the post graduate examining panel whose advice and guidance has been of great importance to my progress in this work.

I appreciate my colleagues Faith Awuor and Vincent Obare who have lent an ear, provided positive criticism and mentorship towards my work, and to Timothy, who was very helpful during my visit to Turkana County for data collection.

Finally, I acknowledge my family: my parents whose constant provision, support and encouragement was everything I could ever ask for. Importantly, I acknowledge my mom's and siblings' encouragement to continue and finish this paper after my dad's passing. Their support has been very meaningful to the conclusion of this work.

ABSTRACT

Security studies in International Relations are evolving and expanding. To this end, contemporary issues such as environmental and particularly water scarcity issues increasingly need to be addressed as water is a key natural resource that can be commercialised, privatized, politicised and in extreme cases, weaponized. This study assesses the impact of socio-economic activities on communal security. The case study research design is used in this study with a specific focus on Turkana fishermen and Lower Omo agro pastoralists. The area of study is Lake Turkana specifically in Kalokol and Lokitaung, where data was collected from both fishermen and agro pastoralists. The data was collected from in person interviews. The target population totalled to 20 individuals. The data collected was categorized into themes, and then analysed through narrative analysis and triangulated against already existing literature as well as theory to produce clarification, verification, and corroboration of the findings. The study concludes that socio-economic activities on Lake Turkana contribute to conflict at the Kenya-Ethiopia border and that there is need forclear elaboration through an agreement, on how the waters of the Omo River and Lake Turkana need to be used to prevent future breakout of conflict. This is particularly important because of the great dependence of Lake Turkana on the Omo River. From the findings, the recommendations given include creation of a transboundary water agreement which takes into consideration the communities around the Turkana Basina and the Omo Delta, and their use of the water of both the Omo River and Lake Turkana, innovation to diversify the communities' socio-economic activities, further development of the region in order to promote peaceful co-existence of the inhabitants, as well as further academic research of the region to expand the literature on water issues in the region.

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AU:	African Union
IGAD	Inter-Governmental Authority on Development
UN:	United Nations
UNEP:	United Nations Environment Programme
IDP:	Internally Displaced Person

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CHAPTER ONE

1.0 Introduction

The field of Security Studies has undergone distinguished change in the last two decades, and as opined by Cavelty & Mauer (2010), it is now considered one of the most dynamic sub-disciplines of International Relations. The field of Security Studies in a contemporary sense subsumes such issues as environmental degradation, pandemics, terrorism and in the traditional sense interstate armed conflict and many more. To this end, an array of contemporary security issues has been explored by various researchers on such issues as terrorism (Cavelty & Mauer, 2010, Czinkota, Knight, Lieesch & Steen, 2010), pandemics and International Relations (Kavanagh, Thirmurthy, Kalze, Ebi, Beyrer, Headley, Holmes, Collins & Gusitn, 2020) human trafficking (Cavelty & Mauer, 2010, Allred, 2005). Detailed discussions on these and more contemporary security issues can be found in Cavelty & Mauer (2010).

These emerging issues have rightfully sparked the interest of scholars from various disciplines and particularly International Relations researchers. This study analyses the impact of socio-economic activities on security around Lake Turkana. As resources and the environment can be hypothesized as an incentive for conflict where scarcity is concerned, this study explores the implications of socio-economic activities of the Lower Omo agro pastoralists and Turkana fishermen on the relations between the two communities as they use the water of Lake Turkana. Social science, in order to achieve scientific rigour has adopted the use of theories to explain and/ or predict why phenomena are the way they are. Traditional view of Security Studies has viewed security issues either militarily or politically through theories such as realism and liberalism. As more issues come to the fore in the 21st Century, Security Studies morph and expand as the requirement to understand these emerging issues becomes more prominent. To this end, the study utilizes two theories: securitization and environmental scarcity theories to a.) expand security sectors beyond the traditional military and political sectors to include more pertinent sectors such as the environments and b.) to explain how scarcity contributes to the outbreak of conflict, in combination with other existing issues such as migration of Lower Omo agro pastoralists in this case.

The study combines both primary and secondary data on the Lake Turkana region where both Turkana fishermen and Dasanech (locally known as Merille) are found to understand the security situation. From the beginning of dam installation of the Gibe Dam on the banks of

the Omo River in the early 2000s to later in 2017, the levels of Lake Turkana have been dramatically affected as the lake relies on inflow from the Omo River. Downstream in the Ethiopian highlands where the Omo meets Lake Turkana and where the Dasanech reside, their lands for agriculture as well as their animals have been affected by the diversion of water from the Omo for hydroelectric power generation. As a result of water scarcity, the Dasanech have migrated further south into Kenya is search for water. Lower Omo agro pastoralists (Dasanech people) were interviewed in order to best gain first had information on the security situation once they arrive at Lake Turkana. Similarly, Turkana fishermen were interviewed and triangulating the findings of this study with already existing studies revealed that the communal security by Lake Turkana is hampered by the groups' common reliance on Lake Turkana for their socio-economic activities. The dam installation on the Omo not only affects the levels of Lake Turkana, or its biodiversity, but also affects the security of the fishermen and agro pastoralists who depend on both sources of water.

The study contributes to the already existing literature on contemporary security issues in International Relations, and particularly to the environmental sector which is considered debatable as a security issue. It also contributes to the literature on the environment, scarcity and how this affects the relationship between the Lower Omo agro pastoralists and Turkana fishermen around Lake Turkana, a transboundary water resource.

The study recommends to both the Ethiopian and Kenyan governments, the creation of a transboundary water agreement which outlines the interdependence of the water sources and the need to set clear guidelines on how to use the water by both groups and if possible to find ways to renew the resource. Desalinization of Lake Turkana is one way to ensure the water can be of more use to the communities. Diversification of socio-economic activities may also prove useful in reducing overreliance and overwhelm of already existing socio-economic activities. Further, innovation is encouraged to aid in the diversification of socio-economic activities. More research will need to be done, but a construction of a solar plant akin to the Moroccan Noor Solar Power Plant can be explored and locals can be trained on how to clean and maintain the panels for pay. Generally, more research on transboundary water resources especially in the region needs to be done and participation by the communities needs to be considered to ensure they are represented and benefit from all measures necessary to maintain security in the area.

1.1 Background of the Study

Security studies have come a long way since the Cold War, where such studies were, in large part, a critique of or response to the status quo of the era's politics. At present, rather than critiquing global politics, these studies have become domesticated as indicated by factors such as international aid (Hagmann, 2014; Rogier, 2005). Studying peace as a component of security, has therefore become, as Hagmann (2014) opines, more measurable and plannable, a fact that has also changed its relation to violence or conflict. In the same regard, to various people and in various disciplines, peace is taken to mean different things. This also translates to each of these kinds of 'peace' having varying assumptions. Political Scientists and Economists converge at a particular kind of peace in their studies of peace and war where violence is measured in terms of numbers while analysing peace agreements for example. In addition to this, a considerable number of studies are concerned about peace building (Rogier, 2005; Connolly & Mincieli, 2019; Doanis, 2014), further illustrating that resolutions adopted to address conflict need to be re-evaluated as the traditional approach to conflict resolutions is not a one size fits all and is constantly evolving.

Further and in-depth research on security has been done in various countries and theatres of war. Burundi and Sudan exemplify as has been discussed above, how conflict and peace correlate. In Sudan where development has been hampered by civil wars, Rogier (2005) explores among many others, such issues as unequal access to social services, increased dependency on oil as well as poor literacy skills that contribute to the escalation of conflict, and therefore lack of peace in the country. In Burundi, it is issues such as land grievances, organized crime groups and post-electoral tensions which influence the spiralling of conflict (Douma, Briscoe & Gasana, 2010). Elsewhere in West Africa, instruments of peace building such as peace agreements are examined as a possible provision for long-lasting peace in Mali. This view has its own complications in a country where certain parts of the jurisdiction are excluded from the agreement leading to conflict between Mali, Burkina Faso and Niger (Goldwyne, Jang, Klange, Milante & Richards, 2019).

What emerges from this background is the fact that research of security in terms of peace and conflict is quite complex, and as suggested by a number of scholars cited above, means different things in different parts of the world. From the examples cited, majority of the

studies have been done intra-country, after the Cold war with interest aiming at explaining the reasons why conflicts broke out, as well as how to resolve the conflicts.

The background provides an explanation of the situation on peace and conflict especially post-Cold War where the nature of especially conflict and /or wars has morphed significantly. As a result of the ever-changing nature of security, in the last 20 years, many new security issues have emerged, and have expanded the realms of Security Studies within International Relations (Cavelty & Mauer, 2010). This study analysed how socio-economic activities of Turkana fishermen and Lower Omo agro-pastoralists impact security around Lake Turkana, bearing in mind that as indicated above, conflict post-Cold War era has occurred mainly within the boundaries of a given country as opposed to between two or more countries. About 865,399 people live around Lake Turkana in Kenya, while on the Ethiopian side are about 200,000 people. Socio-economic activities of both groups of people range from fishing, farming to pastoralism (Watete, Makau, Njoka, MacOpiyo & Wasonga, 2016; Little, Behnke, McPeak & Gebru, 2010). With new threats to security arising beyond the Cold war period, this study is keen to understand how the socio-economic activities of the people who depend on Lake Turkana impact security.

1.2 Problem Statement

Kenya and Ethiopia are countries found within the Eastern region of the African continent. The two countries are neighbours and either country portrays diversity owing to the fact that each one is home to people of different cultures and socio-economic status. In Northern Kenya, are the Turkana people who are found around the Lake Turkana, and whose main social and economic activities range from fishing to pastoralism and farming. Such socio-economic activities, and particularly pastoralism are linked to poverty in post-colonial thought which recants Malthusian thinking and argues that livestock destroys land that could otherwise be used for agriculture (Broch-Due & Sanders, 1999). Similarly, Ethiopia is characterized by cultural and linguistic diversity as well as social and economic diversity. The Lower Omo Valley of Ethiopia, which is part of the focus of this study, is characterized by linguistic diversity, and is inhabited by the Hamar, Mursi, Arbore, Nyangatom and the Dasanech (Strecker, 1976a.). Economic activities are similar to an extent to those of the Turkana people in Kenya, where the Lower Omo inhabitants practise pastoralism, with hints of agriculture in the form of sorghum and maize cultivation being practised as well (Lydall & Strecker 1979b., Wolde Gossa 1999).

Studies of communities found in both countries focus mainly on the 'meagre' nature of the economic activities of the countries' inhabitants as well as on natural resource management (Broch-Due & Sanders, 1991; Ostrom, 2009; Wakjira, Fischer & Pinard, 2013). In addition, to this, as mentioned in the background of the study, research on security is a continual process, and security means different things to different people. In the case of International Relations, Security Studies are dominated by outliers such as international aid (Hagmann, 2014), as well as by peace building discourses (Rogier, 2005; Connolly & Mincieli, 2019; Doanis, 2014). Admittedly as evidenced above, there are numerous studies on issues of security. However, as discussed above, when it comes to specific countries in Africa, and the outbreak of conflict in these countries, a good number of the studies are intra-country in nature (Goldwyne, Jang, Klange, Milante & Richards, 2019; Douma, Briscoe & Gasana, 2010). Further to this, traditionally, as highlighted in the background of this study, security studies were dominated by political and military approaches. At present, many more contemporary issues such as cyber-security, terrorism, human trafficking, and environmental scarcity have emerged. While International Relations has been dominated by war, conflict and politics, certain contemporary issues and in this study particularly, environmental issues are significantly novel and therefore are yet to be fully acknowledged as pertinent issues in International Relations (Cavelty & Mauer, 2010).

In view of this, this study explores the relationship between socio-economic activities and how they impact security around Lake Turkana. Evidenced above is the fact that the nature of peace and conflict has changed since the Cold War period, with conflict now occurring within the borders of countries as opposed to between two or more countries. With this in mind, given the Turkana fishermen and Lower Omo agro-pastoralists both depend on the lake for sustenance, and that recent studies of the region (Avery, 2012, Carr, 2017, Cuesta-Fernandes, 2015) assess the impact of dam construction for hydroelectricity and predict the outbreak of conflict as a result of the dam construction on the Omo river, the problem then becomes what it means for security if both communities rely on Lake Turkana, which is fed by the Omo.

1.3 Research Questions

This study answers the following questions:

- How are the socio-economic activities of Turkana fishermen and Lower Omo agro pastoralists reliant on Lake Turkana?

- How do socio-economic activities impact security in the Lake Turkana zone?

1.4 Objectives

The core objective of this study is to examine the interactions of Turkana fishermen and Lower Omo agro-pastoralists around Lake Turkana, their socioeconomic activities and how in turn their dependence on Lake Turkana impacts security. Specifically, listed below are the objectives of this study:

- To examinehow the socio-economic activities of Turkana fishermen and Lower Omo agro pastoralists rely on Lake Turkana.
- To examine the impact of socio-economic activities of the Turkana fishermen and the Lower Omo agro pastoralists on security.

1.5 Justification of the Study

1.5.1 Academic Justification

This study examines Turkana fishermen and Lower Omo agropastoralists, their reliance on Lake Turkana for their socio-economic activities, and how this in turn impacts security in the area. As the study of security is diverse and a continual process, and that contemporary issues of environmental concern need dedicated research, this study expands the realm of security studies as it delves into the ways in which communities in different countries, both depending on a common natural resource relate with each other, and what impact their interactions have on security, given their diverse socioeconomic activities. In addition to this, the study also contributes to the discourse on security between Kenya and Ethiopia by examining bilateral relations as relates to security vis-à-vis natural resources. This study also contributes to the already existing discourse on the independence of Lake Turkana on the Omo River and that of the Lower Omo and Turkana communities on the water and how this affects security in the area.

1.5.2 Policy Justification

As relations between countries stem from the people that inhabit such countries (Galtung, 1996), this study proves useful to policymakers in understanding the communities around Lake Turkana, and how they relate to each other. In addition to this, there are certain actions towards fishermen, pastoralists and agropastoralists that can mainly be taken by national

governments, county governments and other policymakers. In this respect, the paper, by shedding light on existing issues when it comes to security, can be used as a reference point for action to be taken by the concerned policymakers. Recommendations made may also be adopted in policymaking and improving the lives of the communities involved in the study.

1.6 Scope of the Study

This study covers a scope of literature on security and socio-economic activities with particular focus on how socio-economic activities contribute to how Turkana and Lower Omo communities relate with each other on Lake Turkana. The study also includes literature on dam installation on the Omo River and how this affects water levels of both the Omo River and Lake Turkana. The study area is inLodwar, in Turkana County. Specifically, the respondents are located in Kalokol and Lokitaung. These are areas where the communities dependent on the lake, the fishermen and the agropastoralists, are found for interviews to be conducted. As indicated in the objectives, this study intends to explore how these two communities around Lake Turkana depend on the lake for sustenance, and how this in turn translates to how the two groups relate with each other. The study relies on Copenhagen School's securitization theory to explain the need to expand security sectors to include the environmental sector as a security issue, and on Homer-Dixon's environmental scarcity model to explain the nature of environmental scarcity and how in combination with other existing issues such as migration and population increase, results in conflict.

1.7 Limitations of the Study

In order to obtain sufficient information on the socioeconomic activities of both the fishermen and agro pastoralists, sufficient time had to be accorded to each of the respondents. Having initially settled on 20 respondents collectively, time constraints were encountered as the researcher had to accord ample time to each of the interviewed 14 respondents in a limited time. Future studies may benefit from being aware of this limitation and allocating sufficient time to interview more respondents.

Another limitation arose from the sample size. Because a bigger sample size yields more generalizability, this research's generalizability was undermined. Being a qualitative study, this study used patterns among the respondents' words to come up with a meaningful picture of their socio-economic activities andsecurity around Lake Turkana. It also focused on human emotions which are considered as openings for bias in quantitative studies, but they are important to qualitative studies. Of note however is that generalizability is mostly

associated with quantitative studies, which this study is not. Future studies can therefore employ a quantitative approach, as well as bigger sample size to achieve more generalizable results.

1.8 Research Hypotheses

- The socio-economic activities of the Turkana fishermen and Lower Omo agro-pastoralists' are reliant on lake Turkana.
- Socio-economic activities of the Turkana fishermen and Lower Omo agropastoralists impact security.

CHAPTER TWO

2.0 LITERATURE REVIEW & THEORETICAL FRAMEWORK

2.1 Literature Review

Drawing from various existing literature in the form of books, academic journals and reports, the literaturesection of this study will review knowledge documented by various scholars, researchers, and authors on Security Studies and on the people of Lake Turkana, the lower Omo people, the relationship between Kenya and Ethiopia and briefly, the relationship between Lake Turkana and the Omo River. Security is operationalized as peace and conflict.

2.1.1 Lake Turkana and the Turkana People

Lake Turkana is located in Turkana County in Northern Kenya. Turkana is the largest County in Kenya at 68,680Km^2. It borders Uganda to the West and Sudan and Ethiopia to the North. Turkana County is characterized by geographical features such as low-lying plains, hills, and mountains and two permanent rivers: Turkwel and Kerio, as well as shallow and poor soils which are prone to erosion. Importantly, Turkana County is home to Lake Turkana, the biggest inland lake in Kenya with an area of 7,560 km^2. It measures 265 km in length and has a 40km width(Watete, Makau, Njoka, MacOpiyo & Wasonga, 2016). Population-wise, Turkana County is inhabited by 865, 399 people with a poverty rate of 94.3 per cent (Republic of Kenya, 2010).Socio economic activities in Turkana County range from pastoralism where animals such as camels, donkeys, cows, sheep are reared, to fishing which is specifically practised by the Turkana (Watete et al., 2016).

As a result of radical loss of livestock herds, many Turkana households have moved to Lake Turkana's shoreline, where they practice fishing. The largely uncounted population is vulnerable to the loss of accessible water from Lake Turkana, and the loss of fisheries and lakeside grazing. Historically, Turkana lands were dominated by the British and were administrated from its Ugandan colonial base. At the time of domination, the British were interested in the Nile River region and claimed Turkana as part of its strategy (Von Honhel, 1939, Carr, 2017). After defeating the Turkana between 1914 and 1915, the British increased

their military presence and confiscated the Turkana's livestock thereby disrupting patterns of herding throughout the region. They also disarmed the Turkana leaving them vulnerable to their neighbours such as the Nyangatom and the Dasanech who had access to weapons in Ethiopia. Their weakened state left them exposed to extreme hunger during the breakout of drought. During World War II, the Turkana experienced devastating loss of animals as a result of raiding from the Nyangatom and the Dasanech raiders. In the post-war years, Turkana people suffered hunger and herd losses and responded to this in various ways including by increasing their herds naturally through alteration and mobility, through livestock raiding from other pastoral groups, through moving to towns and to internally displaced persons camps, by settling in funded agricultural projects near Lake Turkana and by migrating to Lake Turkana for fishing (Carr, 2017).

2.1.2 The Omo River and the Lower Omo People

In South Western Ethiopia exists different pastoral and agropastoral ethnic groups such as the Mursi, Bodi, Kara, Dasanech and the Hamer who practice agropastoralism along, or near the Omo River. These communities around the Omo River number 200,000. In previous years, the Federal Government of Ethiopia has embarked on dam construction projects with aims of hydroelectric power generation from various rivers such as the Omo, Awash and Shabelle - all of which are located in the lowland regions of Ethiopia (Fratkin, 2014). Pastoral groups in Ethiopia reliant on majority of these waters comprise 60 per cent of the country's population and generate much of the country's commercially available livestock: 30 per cent (9.3 million) cattle, 52 per cent (12.4 million) sheep, 45 per cent (8.1 million) goats and 100 per cent (18 million) camels (Little, Behnke, McPeak & Gebru, 2010).

The Dasanech people are some of the most affected of the southern Ethiopian populations, by the construction of dams on the Omo River. As a result of wide-ranging movements in various habitats, the Dasanech's way of life necessitated diversified food products and methods of risk minimization in the twentieth century. The Dasanech have experienced territorial restriction by Kenyan and Ethiopian governments which constrained their populations to plains in the west of the Omo River and east of Kibish River for many years. The lost lands they inhabited included: the Ilemi Triangle, grasslands in the Kenya-Ethiopia border, woodlands and grasslands along Kibish River which they shared with the Nyangatom and semi-arid plains and wet foothills at the lowest Omo River due to hostilities with the Hamar group. These territorial restrictions affected the Dasanech population insofar as

livestock was concerned. Livestock overcrowding resulted, and the loss of critical resources during drought meant herds of individual pastoral families dropped drastically. In the twentieth century, this necessitated major adjustments for their survival (Carr, 1977). Ecological degradation through the 1960s and 1970s continued to devastate the Dasanech population further. Reduction of vegetation, the spread of unpalatable species of plants and increased soil erosion by water and wind leading to irreversible loss of topsoil occurred. Pastoral lands of the Dasanech were thus destroyed. In attempts to adapt to the devastating changes and loss of livelihood, the Dasanech attempted to adjust in the 1970s. These adjustments included altering seasonal herding patterns, reducing mobility of villages, and using social cooperation and exchanges relationships as well as cattle raiding. During the 70s time period, Dasanech people were pastoralists and utilized the Omo river for their animals. Some also practised recession agriculture by the Omo River, and an even smaller group of the poorest Dasanech began fishing in the lowermost part of the delta by Lake Turkana's northern shore. Prolonged droughts in the 1970s and 80s coupled with increased livestock raiding between Dasanech people and their Nyangatom and Turkana neighbours further worsened the living conditions of the Dasanech, and their herd numbers reduced (Carr, 1977). The environmental degradation of the time necessitated adaptation which they did by resorting to the Omo riverine zone and lake environment for grazing and recession agriculture. They migrated into the Ilemi triangle, an area deemed precarious for them as the Nyangatom and Turkana raided their cattle, a threat that maintains to date during times of stress.

2.1.3 Lake Turkana and the Omo River Relationship

As highlighted in part above, there has been construction of dams for hydroelectric power generation on various rivers in Ethiopia, including the Omo River. This action has led to outcry from human rights groups such as Human Rights Watch who argue that construction of dams on the Omo, Shabelle and Awash Rivers affect the livelihoods of the communities dependent on the water. Owing to inadequate environmental and human impact studies prior to 2009, the construction of the dams continued to take part due to the availability of funding (Fratkin, 2014).

Of importance to this study, is the relationship between the two sources of water for the livelihoods of communities dependent on them. As the largest desert lake in the world, it is worth noting that 90 per cent of Lake Turkana's water is supplied by the Omo River, which

balances its salinity and assures the existence of biotic life. Flowing downstream from Ethiopia's southern islands, the Omo River coincides with Lake Turkana at the northern end of Lake Turkana, where most of the Omo Delta is. Within the Omo delta as mentioned above are the Turkana fishermen. As a result of the construction of the Gibe Dam, the livelihoods of the Turkana fishermen in Kenya who depend on the lake is threatened. A similar fate applies to the Lower Omo agropastoralists such as the Mursi and Dasanech who rely on the Omo River in Ethiopia for water for their farms and animals (Avery, 2013).

2.2 History of Kenya-Ethiopia Relations

Geographically, Kenya and Ethiopia are both countries found in the strategic Horn of Africa region of the African continent. Kenya has a coastline in the Indian Ocean while since 1991, Ethiopia has been landlocked since 1993 (Mesfin, 2012).

Ethiopia is large in geographical size with high mountains and natural resources such as water, and it contributes more than 85 per cent of water to the Nile. It also has a population size of 112 million in comparison to Kenya's 53 million (World Bank, 2019). Ethiopia's population is comprised of different ethnic groups including the Amhara, Oromo and Somali to mention but a few. For a country with as big a population as Ethiopia, catering to its citizenry is important. Ethiopia has thus put economic development of its people through avenues such energy and agriculture at the centre of its government's agenda (Mesfin, 2012).

Ethiopia shares porous borders with various states in the Horn of Africa. It is bordered by Djibouti to the east, Eritrea to the north, Somalia to the south west, Sudan and South Sudan to the west, and of importance to this study, Kenya, to the south east. Both Kenya and Ethiopia are members of a number of international organizations as well as regional organizations and blocs. The two countries are members of the United Nations (UN) which they both joined in 1963 and 1945 respectively (UN, 2021), the African Union (AU) whose host country is Ethiopia (AU, 2019) and the Intergovernmental Authority on Development IGAD) (IGAD, 2016). Common membership in these organizations further enhances diplomatic relations of the two neighbouring countries and provides an opportunity to address any issues that may be faced by either country.

As regards research, Ethiopia is a big area of interest of many researchers, owing to the fact that the country went uncolonized in an era when the scramble and partition for Africa was happening (Mesfin, 2012). Ethiopia has its leaders such as Menelik II and Haile Selassie to attribute its freedom from colonial rule to. On the contrary, Kenya was colonized by the

British and gained independence in 1963 when at the same time, Haile Selassie was ruling Ethiopia (Oduogo, 1995).

An analysis of Ethiopia's relations with fellow neighbours reveals that its relations with neighbours such as Sudan, Somalia and Eritrea have been tumultuous, owing to the countries' affiliation with the Arab world. With Kenya however, as noted by Oduogo (1995) and Yagya (1990), Ethiopia has had largely amicable relations since the period just after Kenya's independence when in the 70s a treaty, the 10-year treaty of friendship, was signed between them. In that decade as well, Kenya allowed Ethiopia's use of its Mombasa port in 1977 for shipping freight after the intrusion of Somalian troops in south eastern Ethiopia.

As highlighted above, Ethiopia shares a south easterly border with Kenya. There also exists a link between the Omo River in Ethiopia's southern highlands and Lake Turkana in the north of Kenya. A look into the link between the two natural resources would be helpful in this study. To begin with, as mentioned above, Ethiopia has a huge population and as a result, the government has a prerogative to cater to its population's needs. It does this through the energy and agricultural sectors. The Omo valley lowlands and the area surrounding Lake Turkana are inhabited by people whose livelihoods include pastoralism and rain-led farming and fishing (Turton,1985).

In Ethiopia's Lower Omo basin, there are at least 200,000 indigenous pastoralists and agro pastoralists. The Omo Basin is recognized as an early candidate of development in Ethiopia, with an irrigation potential of 348,000 hectares. On the other hand, in Kenya, Lake Turkana is Africa's fourth largest lake, and the world's largest desert lake. It is characterized by high saline / fluoride levels while its green colour is attributed to algae that reside in the lake (Avery, 2010). The Kenyan government in attempts to address the drought and famine that has traditionally affected nomads in the area encouraged them to take up fishing as a form of economic activity. Of note therefore is that the lake's fisheries are an important source of food security for the area which in addition to being arid and underdeveloped, is characterized by increasing population. Lake Turkana derives 80-90 per cent of it surface water from the Omo River in Ethiopia, making it solely dependent on the Omo. As such, any changes in the Omo Basin have an effect on the Lake.Traditionally, socio-economic activities of the occupants of the Turkana Basin include fishing and pastoralism, while those of the Omo Basin inhabitants are centred around agro pastoralist activities (Avery, 2010).

2.4 History, Pros and Cons of the Gibe Dam

Dams are useful in many ways of managing water for the benefit of mankind. They can be used for irrigation, preservation of water for drinking and industrial uses, flood control, hydroelectric power generation among other uses. It is no surprise therefore that Ethiopia's environmental policy which was developed in 1997 recognizes sustainable development as key in addressing Ethiopia's challenges in environmental and resource management (Cuerta-Fernandes, 2015, Environmental Policy of Ethiopia, 1997). As a result of this, Ethiopia has developed a number of dams within its jurisdiction as Africa's water tower. Dams such as the Grand Ethiopian Renaissance Dam (GERD) located on the Nile Basin in north west Ethiopia and the Gibe Dam on the Omo River are some ubiquitous examples in literature about Ethiopia's hydroelectric power generation feats.

In 2004, Gibe I Dam was built on the Gilgel River, a tributary of the main Gibe River. The tributary flows into the main Omo River. The construction and installation of Gibe II followed in 2010, and its main purpose was to channel the already collected water from Gibe I into a hydroelectric power plant. Its impact is considered negligible as it does not impound water off the Omo River. TheGibe III is the largest and latest instalment on the Omo River. It is located further downstream on the Omo River away from Gibe II and retains approximately 14.7 billion m^3 of water at maximum capacity. It is the tallest dam in Africa and potentially the tenth largest dam project in the world (UNEP, 2013). Together, the dams contain 67 per cent of the Omo Basin flow and a 200km^2 reservoir size. As mentioned above, the construction of the dam was done for hydroelectric power generation. Some of the positive outcomes of the dam construction include generation of electricity, for which it was primarily intended to do, as well as irrigation. 1,870MW of electricity are generated from the dam and the electricity serves Ethiopia and its neighbours, Kenya, Sudan, and Djibouti (Avery, 2012a). Irrigation is another positive outcome of the dam construction which was used for agriculture in the lower Omo region. All variables outlined above attracted foreign investment after proposal by the Ethiopian government.

While the instalment of the dams on the Omo River has had some positive outcomes as discussed above, it has also yielded hydrological, ecological and biodiversity impacts. The dams, particularly Gibe III, have reduced seasonal flow of the Omo River. To put into context, before the construction of the dam, the river flowed annually between July and October which fluctuated water levels of Lake Turkana between 1 and 1.5m every year (Avery, 2012a). After filling of Gibe III that began in early 2015, there was a decline in the

levels of Lake Turkana at 1.5m between January 2015 and January 2017 (USDA Foreign Agricultural Source, 2021).

Ecologically, the Omo River has traditionally carried high levels of sediments and vital nutrients southwards to Lake Turkana. (Avery, 2012a). Gibe III traps sediments reducing downstream sediment transport. Any kind of hydrological changes therefore impacts riverine communities who rely on sediments for farming. In comparison to other lakes such as Lake Victoria, Lake Turkana's primary productivity is lower. Despite this, productivity in sheltered areas and shallow lagoons such as the Ferguson's Gulf are amongst the highest ever recorded (Kallqvist, Lien & Liti, 1988). The jade green colour of the lake is attributed to algae which is essential to sustaining fish life (Kolding, 1993). For context, Lake Turkana is home to over 60 fish species (Pitcher & Hart,1995). Input from the Omo River is therefore critical in providing nutrients for the lake especially at the point where the river meets the lake (Avery, 2013).

Finally, as regards biodiversity, the fish in Lake Turkana are very sensitive to upstream development. This is because of their physiological tolerance to salinity, changes in nutrient availability and sensitivity to the fishes' reproductive ecology, all of which are key in ensuring that there is an abundance in fish populations in the lake (Avery, 2102b).

2.5 Ethiopian Government Response to Concerns on Dam Instalments

As explained above, dam construction or instalments, while it bears a number of positive outcomes, carries with it devastating impacts to water ecosystems and to the populations that depend on them. Worldwide, there are many dams that have been constructed for hydroelectric power generation. In South East Asia for instance, the hydroelectric power sector is fast developing in a region that is plagued by such issues as poverty, underdevelopment, corruption and transnational crime. On the Mekong River, hydroelectric power projects are rife, with economic perspectives (Baker, 2012).

In Ethiopia, the dam initiative is decades old but was financially unachievable until recently. The Ethiopian government has had a hydro-agricultural development strategy and an energy diplomacy in mind and has since began executing its strategy (Verhoeven, 2013 & Maupin, 2016).Dam development has certain negative implications such as livelihood loss, crop destruction, reduction in fisheries and human insecurity (Baker, 2012).

Against this background therefore, environmental, and social impact assessments (ESIAs) need to be conducted before the construction of a dam begins. In the case of Ethiopia, such formal assessments were only done after the beginning of dam construction in 2006 (Ethiopian Electric Power Corporation, 2009), but do not address the outcome of the dam construction on the livelihoods of the Lower Omo or Turkana Basin inhabitants.

2.3 Background on Peace and Conflict Studies

Security is operationalized in this study as peace and conflict. As alluded to in the Background of the Study section of this study, peace and conflict studies have gradually changed after the Cold War. Peace has contexts and conditions which may be related to violence. Peace research looks for causes and conditions in various spaces such as in humans, in culture and in nature, a fact that makes studying peace problematic and challenging (Galtung, 1996).

A look at Post-Cold War era peace and conflict studies reveals that they are largely characterized by conflict prevention and peace building activities which are carried out by international organizations such as the United Nations. The nature of conflict has also changed post-Cold War era vis-a-vis pre-Cold War era where in the former case, majority of conflicts happened between or among states while in the latter case, the nature of wars or conflicts morphed into intra-country types. Conflicts in the post-modern world are genocidal ethnic conflicts as exemplified by the 1990s Balkan wars and later on, the 9/11 attacks (termed as new terrorism) which all lead to new ways of dealing with such arising threats to peace. Furthermore, such new types of warfare are now incorporating non state actors such as suicide bombers (van Creveld, 1991, Sandole, 2007). These new ways in which conflict or warfare can break out can result in a spillover effect which Sandole (2007, p.6) categorizes by nature of which they can occur into: conflict spreading within a given area, conflict spreading between a given area and contiguous areas or, conflict spreading anywhere, even far from its origins. A spillover effect, he opines, is various kinds of conflict escalation.

Accordingly, there must be a reaction to conflict or warfare in a bid to restore calm. This then paves way for intervention by third party organizations. A good example is UN peacekeeping forces which have been deployed over time to bring about some semblance of peace in

various regions of the world. Such interventions by third parties have been variously critiqued as a result. Combatants may for instance suspect that third parties are taking sides in conflicts (Sandole, 2007), while in other circumstances, there is a concern over parts of a jurisdiction that are for example, excluded from a peace agreement (Goldwyne et al., 2019).

As regards peace, there are two types of peace: negative and positive peace. Negative peace is characterized by the absence of hostilities, while positive peace is characterized by the elimination of the conditions of a conflict or a war. In his analysis of peace as either positive or negative, Galtung (1996, p. 4) opines that "being against war is a good thing, However, taking this side does not suffice. Qualities of alternatives to war and the conditions for the abolition of war will not disappear and thus must be addressed." This can be illustrated in the example of a state which may be peaceful thanks to democracy existent within its boundaries. As a result of good democratic practices within this state, the population will be content, and there will be less likelihood of violence between parties that may otherwise be fighting for power. In the larger interstate system, there is no guarantee that this democracy in one state will translate into the same. 'Good' practices such as decentralisation inside the state, initiatives within the state and bringing government closer to people, while laudable, will not necessarily translate to peace as civil society is not always peaceful.

Peace and conflict studies are as complex as they come, characterized by territorial conflict. Territorial conflict occurs when a demarcation line is drawn to prevent conflict. However, demarcation lines do lead to inclusions and exclusion which end up undermining why they were drawn in the first place. Similarly, within security studies, there is a demarcation line is characterized by the debate between traditionalist 'narrowers' versus wideners debate of the 1990s. The lack of consensus between the two groups of thinkers results to security being a contested concept. Security as a concept involves various emotions and values and therefore means various things to different people. Most researchers would however agree that security is related to a threat to a given object of protection and is usually linked to threat to survival. In the contemporary environment, security measures and instruments have become more local than global. This means that risks and threats to security need to be managed, locally, regionally and internationally when it comes to contemporary security challenges (Cavelty & Mauer, 2010).

Theoretically, following social science's propensity to becoming more scientific, a number of theories have been developed to explain and predict the workings of the international system.

This study will briefly summarize two theories herein and their contribution to Security Studies, and a third, Securitization theory will be discussed in detail in the theoretical framework. One of the first theories developed in International Relations was realism. Falling within the traditional side of the Security Studies demarcation line, its main arguments centre around egoism, power centrism and groupism. Anarchy within the international system undermines security. Scholarly criticism of realism happened in the 1960s leading to the development of neorealism. Neorealists such as Kenneth Waltz maintained that the powerful workings of classical realists were weakened by their failure to distinguish arguments between human nature, internal attributes of the state and the overall system of states. Neorealism clarified earlier realist ideas and how the features of the overall system of states affects security. Despite this however, classical and neo realists such as Hans Morgenthau and Kenneth Waltz had the sufficiency of their theories questioned by institutionalists and constructivists as regards international security. Contemporary realist scholarship has become more problem focused and its interaction with research from other traditions more productive, which is beneficial to Security Studies. However, realist scholarship has yet to come to terms with novel problems such as nuclear proliferation, and with the effect of domestic institutions on international conflict, something that is a development withing Security Studies during the last 20 years (Wohlforth, 2010).

Liberalism is another theory used to understand the international system and its workings. Proponents such as Immanuel Kant, argue for the fact that conflicts within the international system are reduced significantly by international institutions, interdependence and democracy. Democratic states are likely to be interdependent and to join international institutions. This interweaves the three pillars of liberal peace. A combination of the three pillars reduces conflict and promotes peace in the long term (Rosseau & Walker, 2010).

2.4 Gaps in Literature

As mentioned above, the nature of conflict has changed with time going from interstate conflict to intrastate conflict. The same applies to the actors or participants in these conflicts and wars. The examined literature by Galtung, Sandole, Goldwyne and others puts into context the nature of conflict breakout as well as, in part, conflict resolution options that have been explored. Further to this, as regards literature on Kenya and Ethiopia relations as demonstrated above, a wide array of studies focuses on the socio-economic activities of the Turkana and the Lower Omo communities, and not necessarily on the outcome their socio-

economic activities have on security in the region. The Lower Omo River Basin is also a point of interest for researchers as regards its water, its biodiversity as well as the cultures of its people. Not much can be found regarding the relationships of the communities whose socio-economic activities rely on the water, and how this reliance impacts the relations of the communities who rely on the water. Further, as demonstrated by Cavelty & Mauer (2010) a demarcation line has been drawn between the traditionalists and the wideners about contemporary security issues. This means that while the discussion has been explored to a degree, there needs more contribution on contemporary issues particularly in the environmental sector. While certainly factual that interstate wars have significantly reduced since the Cold War era, the question then becomes, what happens in the case of countries like Kenya and Ethiopia, both independent jurisdictions with different populations and whose natural resources are linked therefore linking the populations that rely on the sources of water for sustenance?

2.5 Theoretical Framework

2.5.1 Securitization Theory (Copenhagen School) by Barry Buzan Ole Waever and Jaap de Wilde

As highlighted in some sections of this paper, security studies that were taking part during the Cold War in International Relations largely maintained a military approach. The nature of conflict during the Cold war era was militarized and happened between or among different states, bringing about an interstate way of relations as regards conflict within the international system. Within International Relations thought at the time, realism and liberalism were the dominant theories used to understand the nature of conflict in the international system. The traditionalist view of conflict in the international system was thus through a militarized lens. The end of the Cold War period which was characterized by conflict between the United States and the Soviet Union changed the nature of conflict as observed by Buzan, Waever and de Wilde (1998), and there was therefore need to adapt the lens through which security had been traditionally been viewed. Rather than strictly observe security militarily and politically, Buzan et al. proposed expansion of the sectors of security into environmental, social and economic realms because, they observed, the post-Cold War international system was going to be more decentralized and regionalized. Traditionalist view of security, its explanations and predictions of patterns of security relations was accurate, but there was a proposal to extend these successes into the new sectors (environmental, social and economic) in response

to the decline of the military - political sectors after the Cold War (Buzan et al., 1998). Securitization theory thus emerged as a response or challenge to the traditional realist view of security with an aim of widening the security agenda.

Securitization theory is characterized by 'wideners' and 'narrowers' where the 'wideners' seek to include more sectors than just military and political in understanding a security issue, while the 'narrowers' are only interested in the military and the political aspects. Having stated this, the main assumption of the theory is: in International Relations, in order for a security issue to be identified as such, it has to have a quality, i.e. "when an issue is posing an existential threat to a referent object, then the special nature of security justifies the use of emergency measures to handle it" (Weaver, 1998, pp. 21). Therefore, in securitization, security is a 'speech act'. It is an intersubjective and socially constructed phenomenon that involves four components: i.) a securitizing actor, whose role is to set off securitization by a securitizing move, ii.) an issue that is elevated to a security issue by a speech act, iii.) a referent object (an entity) that is threatened and requires emergency action and iv.) an audience of the speech acts. The securitizing actor seeks approval of the audience for emergency action (Buzan et al., 1998). An existential threat is thus presented to a target audience by an actor for emergency action.

Water security issues have been identified in many parts of the world and flows of water are unconcerned with political boundaries – some are transboundary in nature in fact, indicating that there is likelihood of more than one state being involved when water security is broached. One important idea behind securitization theory is that issues that would not normally be considered important security issues be elevated into discussion by the political class as security worthy. Therefore, in states that share an international transboundary source of water for example, environmental, economic and political interdependencies are created. Such interdependencies especially when it comes to water, create a high affinity for the resource, elevating water to a national security by creating a survival status. Thus, the association of water scarcity with potential conflict shifts the discussion from the traditional notion of security (Redcliffe, 2001). Associating water with a wider set of elevates the issue to national security status.

Securitizing water involves three mechanisms: structural, institutional and linguistic (Fischhendler, 2015). Structural mechanisms seek to securitize water by identifying potential threats to water, highlighting for example how water systems are vulnerable to contamination

by terrorists, eliciting a need to protect water sources (Gleick, 2006). Institutional mechanisms justify the need for structural mechanisms. An example of this is the presence of military or foreign affairs officials in basin authorities. This can be illustrated by the Nile Basin Initiative whose decision-making body is comprised of ministers from all its member countries (Fischhendler, 2015). Finally, speech acts are key to the linguistic mechanism in which metaphors, framings and narratives are used to induce feelings of imminent danger (Shmueli, 2008).

An example in which securitization is at play is where the Nile is concerned. Being the longest river in the world, the Nile crosses through 10 countries (Egypt, Sudan, Ethiopia, Eritrea, Tanzania, Uganda, Burundi, Rwanda, D.R. Congo, and Kenya) and 160 million people depend on it. More than 95 per cent of Egypt's water stems from the Nile. In 1979, Egyptian president, Anwar Saddat uttered "the only war that would take Egypt to wars again was water" (Dawoud, 2001 in Mason, 2004). By stating this, water scarcity which is considered as a matter of low politics to security raises the profile of Egypt's water issues to the public's concern. Thus, as Deudney, 1991 opines, this elevation gives importance and urgency to mobilizing resources to deal with the security issue. This theory is useful for this study because of its 'widening' capabilities. Because traditional International Relations theories such as realism do not necessarily provide an avenue for emerging security issues, such environmental issues can best be advocated for within the environment sector within securitization theory. In the environment sector of securitization theory, the prediction of disasters rather than the actual disasters elicits public concern which can then be acted upon by governments and institutions. Also relevant to this study is as Buzan, (1991) implies, because human enterprises depend on the local and planetary biosphere, securitizing the environment is important to conserving civilization. This thought then helps to create an explanation for why environmental securitization is important: by being responsible for its structural environment, civilization limits or enhances its development options and influences incentives for cooperation and conflict.Recognizing that the environment is creates a potential of conflict when, for example, scarcity is concerned, means that the potential security issues will be taken seriously and some action towards averting conflict will be taken. Environmental scarcity and how it contributes to conflict or cooperation is discussed in the complementing environmental scarcity theory below.

Criticism of the Theory

As expected, the very notion of using a 'speech act' to potentially decide what a security issue is or is not would cast aspersions on securitization theory. Indeed, Buzan et al., (1998) concur with Walt (1991): expanding or widening the security agenda beyond the military sector risks intellectual incoherence by virtue of having too many issues ranging from pollution, economic recession to disease seeking to be included as security issues. Having these many issues risks making it difficult to devise solutions to any of the problems. In the environment sector, as well as in other sectors this can be counterintuitive owing to the political function of the word security. Moreover, in another instance, widening of the security agenda inadvertently elevates security into a universal good thing (Deudney, 1990).

To this, Waever, (1995) argues that regarding security as a universal good thing is skewed, and proposes instead, that security be looked at as a sort of stabilization of conflict or through emergency mobilization of the state. Instead of always viewing security as a good thing (too much good security can be destructive), the proposition is to aim for desecuritization: where issues are shifted out of emergency mode into normal bargaining processes of the political sphere.

2.5.2 Environmental Scarcity Theory by Homer Dixon

As a complementary explanation of the securitization theory discussed above, it would be helpful for this study to include Homer Dixon's environmental scarcity theory. As highlighted, the primary role of securitization theory above is to widen the sectors of security studies beyond the 'narrow' military sector. As environmental issues are not traditionally considered security issues, environmental scarcity theory therefore explains the repercussions of scarcity after securitization theory expands security issues to include the environment.

Proposed by Thomas Homer Dixon and the Toronto Group, environmental scarcity theory relies on a number of assumptions to explain the relationship between scarcity and the breakout or lack thereof of conflict. To begin with, Homer Dixon (1999), suggests that there has been a period spanning two decades of debate between neo-Malthusians and economists about the relationship between population growth, scarcity and prosperity. The source of debate has been the issue of population size and resource demand. Analysts, according to Homer-Dixon (1999), have argued that population growth might induce changes in agrarian structure, or a larger population increases environmental degradation. All of these arguments, he opines, are not supported empirically. He however favours optimistic economists' views whose main assumptions are first, natural resources are homogenous and that reservation of

certain resources for future use may contribute little to welfare of future generations. Second, economic optimists imply that the human species is biologically exceptional and that they can adapt to circumstances and third, that resource degradation and scarcity are not problems of excessive growth or population and consumption but of failures of government policy and markets. Governments must therefore set up economic mechanisms to counteract the social costs of scarcity.

Natural resources can either be categorized as renewable or non-renewable where non-renewable sources are characterized by the stock, the "total quantity of the resource available for consumption, and the latter by an "incremental addition to, or restoration of the stock per unit of time. Renewable resources can further be categorized under those that provide goods (e.g., ocean fisheries), and those that provide services (e.g., the ozone layer that provides protects life from astronomical levels of ultraviolet radiation (Homer-Dixon, 1999 p. 47). Against this background therefore scarcity of renewable resources can be supply-induced, demand-induced and structural scarcities. While analysts tend to focus on one kind of scarcity at a time, environmental scarcity as proposed by Homer-Dixon (1999) allows incorporation of all three in an analysis, allowing for understanding of how they all interact with each other.

Scarcity can stimulate useful discussion and institutional change. According to Homer-Dixon, scarcity of natural resources can be so severe yielding to a possibility of undermining the wellbeing of human beings. This kid of scarcity can come about in three ways: first, through a drop in supply of a key resource, second, through an increase in demand and third, through a change in access of various groups to a particular resource. It is important to note that the three types of environmental scarcity are produced by many factors that are related in complex ways. As regards increase in supply-induced scarcity as a result of human activities, three factors are at play: i.) the total human population in a region, ii.) the use per capita of technology available to that population and iii.) the resource consumption or degradation produced by each unit of use. As a result, resource degradation of a renewable resource can prompt ideational reactions, for example, through institutional reform (Homer-Dixon, 1999).Renewable resources can also otherwise be degraded by technological activities that indirectly harm a resource, for example through pollution of swamps by factories.

Demand-induced scarcity is as a result of population size and per capita demand for a given resource. Both factors are affected by a range of factors including, economic preferences and relations between genders. Increase in population size can cause both increase in total

demand for a resource and a decrease in supply by depletion or degradation Structural scarcity is a product of unequal distribution of resources that concentrates a resource in the hands of some groups while subjecting other groups to scarcity. Property rights influenced by ideation factors are responsible to structural scarcity(Homer-Dixon, 1999).

The three types of scarcity discussed above: supply-induced, demand-induced and structural scarcity, can exist either by themselves, or in combination with each other and provide a number of negative social effects such as constrained agricultural and economic productivity, increased migration, sharper social segmentation and disrupted institutions. The social effects are often interlinked and can generate violent conflict (Homer-Dixon, 1999 p.52).

Sharing the notion with securitization theory discussed above, Homer-Dixon (1999) acknowledges that water wars and other environmental issues can be criticized as lacking in scientific vigour, he proposes a model of the links between environmental scarcity and conflicts to counteract this result. The interaction of the three types of environmental scarcity result in two distinct patterns of interaction: resource capture and ecological marginalization. Resource capture is the outcome of reduction in the quality and quantity of a renewable resource interacting with population growth to encourage a group within a society to shift resource distribution to their favour. This results in dire environmental scarcity for poorer groups. Ecological marginalization, because of unequal resource access, combines with population growth and causes migrations into regions that are ecologically fragile. High population in such areas in combination with lack of knowledge and capital to protect local resources can cause environmental damage and poverty. Resource capture is commonly exercised by powerful groups, greed and fear of what a rising scarcity might produce.

Environmental scarcity theory as discussed above has been used in understanding the water shortage situation in the West Bank of the Joran River in the Middle East. In this case study, water shortage on the West Bank in the 1990s was a result of population growth combining with high consumption of water as a natural resource and therefore in resource capture. As a result of demand of water by Israel, about 2,150 million cubic meters (mcm), the water levels in Israel and part of the West Bank have reduced. The resulting dwindling water resources and a relatively large population growth of 6 million at the time, the Israeli government limited water use by Jewish settler and Arabs on the West Bank. During that period in the 90s, settlers consumed four times as much water as the Arabs who were only used 125mcm. Israel restricted the number of wells Arabs could drill in the territory while allowing the

settlers to drill as many as 30 wells for irrigation. This resulted in a drop of irrigated Arab farmland on the West Bank. Israeli water policies and confiscation of agricultural land of the settlers and other Israeli restrictions on Palestinian agriculture resulted in West Bank Arabs abandoning their farms and migrating into towns where they became unemployed day labourers within Israel (Homer-Dixon, 1999).

Homer-Dixon (1999) opines that resource capture and ecological marginalization are usually interlinked, and often, one leads to another. In conclusion, environmental scarcity, its various patterns of interaction, resource capture and ecological marginalization can cause many changes in societies. The changes can be beneficial to societies or communities for example, if they encourage development of novel technologies and institutions. However, opines Homer-Dixon (1999), many of the changes are harmful. In particularly developing societies, scarcity can result in such social effects as:

- constrained agricultural productivity, often in ecologically marginal regions,
- constrained economic productivity which mainly affects people who are highly dependent on economic resources,
- migration of affected people in search of better opportunities,
- greater segmentation of society commonly along ethnic lines,
- disruption of institutions especially the state (Homer-Dixon, 1999 p. 80).

Environmental scarcity on its own, stresses Homer Dixon, is not a sufficient cause of the social effected outlined above. Scarcity interacts with other existing factors to produce social and economic effects.

This theory is important to this study as it clearly explains and outlines the different types of scarcity, howscarcity then interacts with already existing issues such as migration and the outcomes which can either be positive, when affected communities choose to cooperate with each other to address arising issues, or, negative consequences when societies break down as a result of scarcity and other already existing issues. Through the theory, the multicausality of environmental scarcity summarizes the issue in Lake Turkana where reduction in water levels easily combines with other existing social and cultural factors to increase the likelihood of conflict. Environmental scarcity theory therefore explains and predicts the context under which scarcity as a result of reducing water levels on Lake Turkana can combine with

migration of Lower Delta communities in search of water to either yield cooperation or conflict between themselves and the inhabitants of the Turkana Basin.

Criticism of the Theory

Akin to securitization theory discussed above, critics of environmental scarcity theory are concerned with the notion of environmental scarcity being a cause of social stress. Critics are concerned with the conceptualization of environmental stress, an issue that has long hindered research on the links between environmental stress and conflict (Gleditsch, 1998). The main concern is that environmental scarcity as proposed by Homer-Dixon overstates the impact of environmental scarcity and ignores other variables that are more powerful. Gleditsch (1998) opines that environmental scarcity is a simplistic view and that conflict in developing countries is best explained by social causes. Another criticism of environmental scarcity theory by Gleditsch (1998) is that the Toronto Group's makes a lot of inferences to future scarcities and that no empirical evidence is provided. In conclusion, the major concerns of critics are methodological as regards social science research. Homer-Dixon and the Toronto Group anticipate these concerns and argue that sceptics of environmental scarcity have conflated notions about causality and causal strength and that they hold a great assumption that the more factors are involved, the weaker they are (Homer-Dixon 1999).

2.6 Definition and Operationalization of Concepts

2.6.1 Security

Conceptual Definition

After recognition of the fact that the concept of security has been variously explored in literature on security, therefore leading to problems in conceptualizing it altogether, and acknowledgment of the fact that to different groups such as states and individuals, security means different things, Baldwin (1997, p. 13) defines security as "the low probability of damage to acquired values". This definition allows for a focus on the preservation of values, which can then be specified according to exact values as well as to who the concept is referring to.

Operational Definition

This study operationalizes security as peace and conflict.

2.6.2 Socio economic activities

Conceptual Definition

Across different disciplines, socio-economic activities are variously defined. Hellmich (2015) succinctly defines socio economics as human actions in relation to influence from other spheres of life. Socio economic activities therefore can be exemplified by such things as culture and politics.

Operational Definition

This study will operationalize socio-economic activities as those activities carried out by the Turkana and Lower Omo inhabitants in relation to economic gain. These include fishing, agropastoralism and farming.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

This section presents the research design, the sample of the population, the sampling technique, the instrument for data collection, validation of data collected from the field, and data analysis.

3.1 Research Design

A research design anticipates and specifies the apparently countless decisions connected with data collection, processing and analysis as well as presents a logical basis for these decisions (Manheim, 1977, p.140). The research design of choice for this study is the case study research design for several reasons. The case study research design is preferred because:

i. it allows for in-depth investigation of a contemporary phenomenon within its real-life context. This ultimately ends up providing detail and understanding of the phenomenon under study (Yin, 2009). In this study, because Lake Turkana and its importance to both the fishermen and agropastoralist communities has not been extensively researched, the case study research design opens the possibility of providing details and clarification on how each of these communities rely on the lake and how in turn their dependence on the lake impacts the security in the

region. As both groups of respondents understand their craft and the region, they are best placed to be a case study for in-depth understanding of how their socioeconomic activities are reliant on the lake and how the common dependence contributes to either cooperation or conflict.

ii. Methodologically, the case study research design enhances validity and reliability by way of requiring triangulation through use of multiple data sources. This gives a more in-depth understanding of the phenomenon in question (David & Sutton, 2011). The case study research design in this case allows the researcher to draw data from all the sources considered knowledgeable on the research problem, while simultaneously consulting already published data on the phenomenon, in order to confirm validity of the data collected. Comparing already existing literature on construction of dams and their human impact, the water levels of both the Omo River and Lake Turkana and how reduction of water affects populations dependent on them corroborates findings from the field to enhance the study's validity.

iii. For this research, a case study research design is used, because the research is interested in how socio-economic activities impact security, as well as in further understanding of the phenomenon. In order to best gain first-hand experience, interviews are selected as a method of data collection. The case study research design opens up the possibility of using interviews and creating a schedule for the fieldwork.

3.2 Data Collection Methods

In order to answer the research question, test hypotheses and evaluate outcomes, data collection has to be carried out. Data collection therefore encompasses gathering and measuring information on variables in order to achieve the desired results stated above (Kabir, 2016). Both primary and secondary sources of data are employed in the study. Interviews will be used as data collection tools. The structure of the interview is aimed at getting precise responses from both the fishermen and the agro pastoralists. Further, because the collection of data in this study involves exploring feelings, attitudes and behaviours of the fishermen and agro pastoralists, the researcher will gain first-hand experience of the respondents' attitude towards the security in the Lake Turkana region. Interviews have been selected here over questionnaires for example, as they will provide clarity needed in case the questions in a questionnaire are not clear enough for the respondent to understand and

therefore respond to accordingly. This thus reduces errors by ensuring the respondents have clarity of the question before responding, and the researcher is able to clarify their responses as well. Finally, consistent responses over the target population will help establish validity.

3.3 Target Population / Sampling Frame

The target population in this study is drawn from two major groups of people who are considered key to the study: the Turkana fishermen and the Lower Omo agro pastoralists. There is limited literature that accounts for the precise number of fishermen who reside by the lake and practise fishing. Censuses mainly indicate the number of the entire Turkana population ranging between 300,000 and just over 1 million people in Turkana County per the Kenya 2019 census. This research's study areas are in Kalokol and Lokitaung. Kalokol is in Turkana Central sub-county, with a population of 166,135, while Lokitaung is located in Turkana in Turkana North sub-county with a population of 59,378 (Kenya Census, 2019). The African Centre for Aquatic Research and Education (2021) estimates that about 3,000 fishers are directly employed by the Lake Turkana fishery. Some sub-locations such as Parkati had no numbers indicated during the census as people had migrated in search of water. Because the study areas especially around the lake are very sparsely populated, and because Kalokol and Lokitaung where both groups of fishermen and agropastoralists are located are quite a distance from each other, the research used non-probability sampling which was the most convenient method. The target population and sampling frame includes fishermen who live and trade by Lake Turkana as a way of livelihood, while the agro pastoralist target population is comprised of Dasanech (Merille) farmers and pastoralists who have migrated into Northern Turkana from Southern Omo in search for water for their animals. The agro pastoralists are located all over but are found primarily in Lokitaung.

3.4 Sampling Technique

The sampling technique of choice in this study is purposive sampling, a non-probability sampling technique. This kind of technique targets the selection of the target group based on the group's knowledge and expertise in the areas of interest of the study. The homogenous purposive sampling employed in this study is useful as both groups of respondents bear similar characteristics i.e., the fishermen all practise the same occupation and so do the agro pastoralists. Purposive sampling has been selected importantly because it is time and cost effective and will also yield in a range of responses from the target population. To achieve a degree of variability, heterogenous purposive sampling has also bee used. These methods ar

the most appropriate for the study as there are only a limited number of primary data sources by the lake. In addition to this, purposive sampling technique is the most cost and time effective technique for the study.

3.5 Data Analysis

The study's conclusion is drawn from qualitative data used to analyse the data. A narrative analysis of the respondents' responses has been employed to analyse and finally present the data. As the method of data collection of this study is in person interviews, transcripts of in-depth interviews have been used. Inductive method of narrative analysis has been used to code the respondents' narratives in order to come up with an emerging narrative throughout the interview. As the researcher is keen on understanding the experiences of the fishermen and agro pastoralists, the narrative method of data analysis is beneficial in understanding the socio-economic activities of both groups, how they are carried out, how they came to be and how the reliance on the lake is important to each group of respondents. Gaining an in-depth account of these experiences aids the researcher in coding a representation of the respondents' lived experiences.

CHAPTER FOUR

4.0 DATA PRESENTATION AND ANALYSIS

4.1 Introduction

This chapter entails detailed presentation of data as collected from the field, as well as an analysis of the findings in response to the study's objectives. The study assessed the impact of socioeconomic activities on security. It was specifically interested in the socio-economic activities of the Turkana fishermen and Lower Omo agro pastoralists around Lake Turkana, and how in turn, these socioeconomic activities impact security.

4.2 Response Rate

The researcher managed to administer 14 interviews out of the 20 interviews intended for the target population. This resulted in a response rate of 70% as tabulated below:

Table 4.2.1: Response Rate

Number of respondents	Actual respondents	Response rate (%)

intended for interviewing		
20	14	75

Source: Field Data (2021)

4.3 General Information

The following section gives a summary of the respondents' gender and their socioeconomic affiliations.

4.3.1 Gender distribution of respondents

Table 4.3.2 below is a gender representation of the study.

Table 4.3.2: Respondent Gender Distribution

	Frequency	**Percentage (%)**
Male	14	100
Total	14	100

Source: Field data (2021)

The findings tabulated above indicate that 100% of the respondents were male. This is because both the Turkana fishermen and Lower Omo agro pastoralists are largely patriarchal societies, in which men are custodians of their families' economic activities and therefore family control property, while women engage in other housekeeping activities such as gathering firewood and supplying food for their families as well as building and taking down their huts during migration in the case of the Lower Omo agro pastoralists. While this does not hinder the findings of the study, because the information gathered was still useful in understanding the issues the study sought out to research, it however highlighted that women's voices were not included in the responses because of the patriarchal Turkana and Dasanech communities.

4.3.2 Respondents' socioeconomic affiliation

This study sought to understand how the Turkana and Lower Omo communities benefit socio-economically from Lake Turkana. The findings are as represented in table 3.5.1below:

Table 4.3.3: Representation of respondents' socioeconomic affiliation

	Number of respondents	**Number of respondents**	**Response rate (%)**

	intended to be interviewed	interviewed	
Turkana fishermen	10	8	57
Lower Omo agro pastoralists (Dasanech/Merille)	10	6	43
Total	20	14	100

Source: Field data 2021

4.4 Importance of Lake Turkana

This study was interested in finding out how both groups, Turkana fishermen and Lower Omo agro pastoralists, rely on Lake Turkana. From the responses gathered in the field, Lake Turkana is of utmost importance to both the fishermen and agro pastoralists and this is presented below.

4.4.1Lake Turkana importance to Turkana fishermen

Some fishermen have lived by the lake and depended on it since birth, practicing fishing in order to provide for their families throughout the years. During the Corona Virus (COVID-19) pandemic as well, findings indicate that some high school graduates have also turned to fishing from the lake as an economic activity to sustain themselves, further illustrating the importance of the lake for the community, particularly during the pandemic when many businesses have been affected by the pandemic. For the Turkana fishermen who fish daily on the lake and transport their fish to Lodwar for sale, the lake, as well as the weather and specifically part of the lake's waters (such as where the Omo meets Lake Turkana) where planktons are rife, are very important for them to earn from fishing. Fish is abundant at the Omo River's meeting point with Lake Turkana, corroborating already existing studies by Avery (2013), and Carr (2017). On a good day, a fishermen explained they can get as many as 2,000 fish, while on a low day they get anything between only 50 to 100. The figure can get to slightly over 100 fish. Prices of fish range from Ksh. 30 to Ksh. 50 depending on the size of the fish. This means that on a good day, they can make between Ksh. 60,000 and Ksh. 100,000, while on a bad day, their revenue is between Ksh. 3,000 and Ksh. 5,000.

One of the respondents stated, "The Lake Zone (Lake Turkana) is our lifeline, it is the source of the Turkana people. If not for this lake, we would not have a source as a people, neither

would we have a source for our income. The lake has served us a great deal, as we rely heavily on the lake for fishing."

4.4.2 Lake Turkana's importance to Lower Omo agro pastoralists

Lake Turkana is also considered important to the Lower Omo agro pastoralists, who in this study are represented by the Dasanech (Merille) agro pastoralists. They rely on the lake's waters for their animals as they have migrated into Kenya's Turkana Basin. The Dasanech follow the Omo River after construction of the Gibe III dam in Ethiopia, towards Lake Turkana after the decline of the Omo levels. The accounts of the agro pastoralists are consistent with Avery (2012, 2013) as indicated in the literature review. "Our people live in the southernmost part of Ethiopia, and we rely on our cattle for our livelihood. Our animals are our prestige and are therefore very important in our society. We also practice irrigation by the river when it rains but sometimes, we lose our cattle and therefore our livelihood. When this happens, we turn to fishing in Lake Turkana because of reducing water levels in the Omo River," a respondent explains.

Lake Turkana is fed by the Omo River which originates from the Ethiopian southern highlands. The Lower Omo agro pastoralists such as the Dasanech (Merille) and the Nyangatom practice animal rearing or pastoralism and farming by the river. However, due to gradual construction of the Gibe Dams (I, II and III) on the river, water levels have reduced forcing the inhabitants to move further southwards into Kenya's Turkana Basin in search of water. In addition to the search for water, the Merille also migrate to escape harmful practices such as Female Genital Mutilation (FGM) and settle in the Turkana Basin. A respondent explains, "We came here (to Lake Turkana) because of water for ourselves and our animals and to escape FGM. The water level in the Omo has reduced because of the dam, and because we need more, we move to find another source."

4.5 Communities' alternative socio-economic activities

4.5.1 Turkana fishermen's alternative socioeconomic activities

The study established that majority of the Turkana fishermen have practiced fishing since they were born by the lakeside and found their families carrying out fishing. They therefore took up the practice by apprenticeship. A few of them however, tried to practice other forms of business such as selling clothes or charcoal production but quit owing to financial unsustainability of these trades, preferring instead to move further south to Kalokol from

Lokitaung, for example to carry out fishing which is more profitable. A respondent explains, "Depending on the season and weather, I get on the lower side, about 30 to 50 fish. Fishermen like me depend on the rain to increase the availability of fish as they come out to feed. Before settling fully on fishing, I was a clothes seller, but I quit because I was not making enough money. Fishing is more profitable here."

Another respondent shares these sentiments and adds, "For me, I moved from the reserves, where we keep animals, to the lake because the fish business is very lucrative."

4.5.2 Lower Omo agro pastoralists' alternative socio-economic activities

In Ethiopia, some Lower Omo agro pastoralists engage in fishing where the Omo meets Lake Turkana in addition to keeping livestock and practicing hints of farming. Overall, the region is described as arid and semi-arid, and therefore, like the Turkana Basin does not support swathes of vegetation.

A respondent explains, "Sometimeswe lose our cattle to the drought and our alternative to keeping cattle is fishing along the Lake Turkana. We tend to take up fishing here at Lokitaung as we sometimes do in the Omo Delta, where there is water in the Omo River. We may also hunt crocodiles here for food. For the Merille people, cattle are very important, they provide milk and meat and wealth for the community and any loss of cattle to drought is devastating. We also used to practice cultivation when the rain floods the Omo River."

Lake Turkana has attracted many respondents of this study from alternative sources of income. A respondent explained, "I left the rural areas and came here. Keeping animals was not as profitable as I would have liked, and I therefore decided to join the fishing trade."

4.6 Impact of socio-economic activities on security

This study was particularly keen on understanding how the reliance on Lake Turkana by both Turkana fishermen and Lower Omo agro pastoralists impacts their relations with each other, and therefore security.

4.6.1 How reliance on Lake Turkana impacts security around the Lower Omo Delta and the Turkana Basin region

The findings indicated that owing to the Turkana fishermen considering the Turkana Basin their source and Lake Turkana a major source of their income, they have gone to great lengths to keep the status quo. A respondent explained, "Since the Omo River is the source of

this lake (Lake Turkana), the construction of the Gibe Dam on the River has affected the water levels of the lake, which has begun to recede. The Dasanech (Merille) who live around the Omo River in Ethiopia have come this side (Lake Turkana) and they now also rely on the lake just as we do. Where the Omo meets the lake in Ethiopia is a point in which there is plenty of fish, which as you now know is important for our financial wellbeing. The Merille also practice fishing in Ethiopia. When they come here, they also attempt to join in the fishing. Fighting erupts because there are only so many fishing points on this lake. We have fought with them to the point of killing them with bullets over fishing points because of encroaching. Many people have died as a result of fighting over the lake."

Another respondent adds that, "As the Merille encroach on our space, we retaliate by stealing their cattle and the fighting continues. We fight over fishing points because they steal our fishing nets. Any time we meet the Merille fighting ensues."

Yet another respondent says, "I moved to Kalokol from Todeyang because of the Merille. There was a lot of fighting around the border for water, and animals."

On their part, in order to survive because of the reducing water levels on the Omo, the Merille as explained above, move into the Turkana Basin in search of water. "We hunt crocodiles too. A crocodile can provide a meal for an entire family. Sometimes fishing is more profitable than keeping animals because animals are in danger of dying from drought and dry conditions. So, we fight with the Turkana because of fishing spots. During the fighting, we lose our cattle sometimes and people are injured and killed."

4.7 Opinions on whether Turkana County Government and Ethiopian Government have intervened in the emerging conflicts over Lake Turkana.

Majority of the respondents felt that there is little being done to address the conflict that emerges from water issues in the region. A respondent said, "The construction of the Gibe Dam reduces water levels which in turn reduces fish population. If the dam did not exist or was well planned, there would be no need of fighting as there would be enough fish for everyone to rely on for money. There would also be no need for migration into each other's space because there would be enough water for everyone, for us to continue fishing, and for the Merille to remain in their country."

Another respondent stated that, "Government officials have come here to write reports, but we do not see anything being implemented. It would be nice if both countries orchestrated a

meeting to address our grievances. It has happened before in 2013 and it was peaceful for a while until 2015 when conflict erupted again. It goes on to date."

Coincidentally, 2015 is when Gibe III was constructed on the Omo, and conflict erupted again after the 2013 government intervention.

CHAPTER FIVE

5.0 SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter outlines a summary, conclusion as well as recommendations drawn from the study. To start with, transboundary water resources transcend national boundaries, and how a certain country utilizes its resources is not necessarily the same way its neighbour(s) depending on the same resource will. Further, as indicated earlier in this paper, traditionally, security was viewed by scholars through primarily military and political lenses. As the 80s were ushered in and the Cold War ended, there were emerging threats to security, and as such, organizations such as the United Nations (UN) created programmes such as the United

Nations Environment Programme (UNEP) in recognition of emerging issues such as environment degradation.

Transboundary water resources if not well managed are a source of conflict or cooperation depending on how the especially if local communities rely on water for various socio-economic activities.

5.2 Summary

This study found out that socio-economic activities of the Turkana and Dasanech communities that reside and rely either directly or indirectly on Lake Turkana are a source of conflict between the communities. One group of the respondents recognizes the Turkana Basin and Lake Turkana as their source and even more important as their source of income. Another group of respondents has been forced to migrate from the Omo Delta into the Turkana Basin following reducing levels of water in River Omo. They do this to find water for their own use and that of their animals. However, their migration has led them into another country's boundary and specifically to regions where Turkana fishermen insist are the best places to catch fish for sale. This has led to breakout of conflict, a tit for tat kind of relations between the communities and therefore a threat to security and peaceful relations between these two groups of people. The largest risk to security in the Omo Delta -Turkana Basin region is the interdependence between the water resources in the Omo River and Lake Turkana and a dependence on these water resources by two distinct groups of people.

The study also revealed that other opportunistic issues such as cattle raiding result from lack of categorical addressing of the issues around transboundary waters. Another impact of this common reliance on the lake is the resulting human rights abuses exemplified by the fighting and killings that have happened as the Turkana fishermen retaliate against occupation of their space by the Dasanech (Merille) who are also trying to search for water, a basic human need. The loss of their cattle to drought further makes the situation more precarious as the Merille in an attempt to adapt to the losses as well to the new living conditions in the Turkana Basin after migration, take up fishing and encroach on what the Turkana fishermen consider their turf. Further to this, they are injured by wildlife such as crocodiles when they attempt to hunt them for meat after the loss of their animals to drought. On the part of Lake Turkana, while it is a vast lake, the largest desert lake in the world in fact, it is concurrently being affected by issues such as evaporation albeit considered normal hydrologically, and rising water levels which have flooded and destroyed the homes of residents who live next to it. On the part of

the Omo River whose inflow is critical to neutralizing the salinity of Lake Turkana and providing the adequate environment required for fish life, the construction of the Gibe dams on the river not only affects the flow of the water, but also affects the inhabitants of the Omo Delta who have no other option to survive, other than to migrate in search of water.

The findings of this study are consistent with Homer-Dixon's (1999) environmental scarcity explanations, which explains that scarcity combines with issues such as migration to cause conflict. Indeed, as explained by his model, water scarcity on the Omo River and Lake Turkana is a result of dam construction on the Omo River. Dam construction and installation on the Omo River has led to first, reducing water levels on the Omo River, which is the lifeline of Lake Turkana. The consequence is receding of the lake further southwards into Kenya. Secondly, the reduction of water levels on either water body has to migration of the Dasanech (Merille) from the Omo Delta into the Turkana Basin. In their search for the scarce water, conflict between the two communities has resulted because of encroachment and scarce water resources. This is also according to predictions of Avery (2013).

5.3 Conclusion

Natural resources are considered important for the survival of humankind. As exemplified by the responses of the fishermen and the agro pastoralists for example, water is important for the life of fish, which they rely on for work, and for their animals, which are considered a very important sign of prestige. From this case study, security is impacted by socio-economic activities on water as a natural resource. Water is an important natural resource for either community and the lack of adequate water resources for use by the communities has led to conflict within the Turkana Basin and the border between Ethiopia and Kenya as both communities attempt to get access to and utilize the water. Further, in this case, and as explained in more detail in the literature review, there is great interdependence between the two water bodies which are located in different countries. The Omo River feeds Lake Turkana which has a small part in Ethiopia's southern highlands. The meeting point of the river and the lake are key points for fish life and therefore any alteration by factors such as dam installation in this case, as indicated by Avery (2012, 2013) affects the availability of fish. There are two different groups of people and nationalities depending on the water for their livelihood and security at the border point is at stake for as long as there is no clear agreement on how to peacefully manage the resource for all that depend on it.

Although Kenya and Ethiopia have, since the establishment of diplomatic relations between themselves, had friendly relations, the populations of Northern Kenya and Southern Ethiopia are seemingly yet to catch up with the rest of their countries on issues of development, owing to the very traditional aspects of their culture, and limited as well as untimely environmental impact studies on the impact of dam construction on the Omo. The traditional nature of either community does not mean that the issues they face should go unaddressed as they contribute to the larger national dialogue and therefore the relations of the two countries.

5.4 Recommendations

As historically Kenya and Ethiopia have had amicable relations the establishment of diplomatic relations, this study proposes the following recommendations that may be adopted by policymakers in line with the findings from the field:

5.4.1 Recommendations to the Ethiopian Government

The reduction of water levels on the Omo River has been attributed to the construction of the Gibe Dams on the river for power generation. While the generation of power is important and serves more than Ethiopia in the region, it is recommended that enough research be done on the cons of dam construction on theOmo River, and remedies to the cons addressed before further implementation is done. Further, as the findings have demonstrated, the nature of the water resources are transboundary, meaning they are shared by both Ethiopia and Kenya. Lake Turkana depends on 90 per cent of the inflow from River Omo, and the inhabitants of the Omo Delta depend on the river for their personal use, for fishing and for irrigation, as well as for their animals. These populations are affected by the reduction of water levels on the river and have to migrate in order to get water. In their migration into Kenya's Turkana's basin, they encounter hostilities as they settle into another group's territory. To preserve the traditionally amicable relations between Ethiopia and Kenya, it is recommended that a transboundary water agreement is signed. It should involve the communities directly dependent on the water resources, and detail how the water shared between the two countries will be accessed and used to the benefit of both parties in order to address and reduce misunderstandings and conflict between them.

5.4.2 Recommendations to the Kenyan Government

As the water levels in Lake Turkana are already being impacted by reduced inflow from the Omo, the socio-economic activities of the fishermen who rely on the lake are already in

jeopardy. As recommended above to the Ethiopian government, both countries and communities would benefit from a transboundary water agreement, owing to the fact that Lake Turkana is dependent on River Omo for its inflow, and both the Omo Delta and Turkana Basin communities are dependent on the water resources for their livelihood. An agreement acknowledging this dependence and benefits for both groups of citizens and then declaring how the water will be used and managed to benefit the people and their government is key in mitigating the security issues that are being witnessed.

Further, as devolution has encouraged the development of county governments, it is recommended that the development of the regions around Kalokol and Lokitaung and generally the Northern Kenya region are taken into consideration, in order to diversify the economic activities of the inhabitants and reduce overreliance on one type of economic activities. These regions are very arid and receive a lot of sunshine. A handful of innovative socio-economic projects can be considered for implementation. A solar desalination plant for example, can help reduce the salinity of Lake Turkana, and the water can also be used for other uses thus.

Generally, more academic research can continue to be done in this region and others of this kind to further the literature on security studies and develop possible innovative solutions and recommendations in a bid to diversify economic activities of the inhabitants, promote border security and peaceful relations between countries that share transboundary water resources.

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APPENDICES

APPENDIX I: INTERVIEW GUIDE

University of Nairobi

Department of Political Science and Public Administration

The Impact of Socio-economic Activities on Security: A Case Study of Turkana Fishermen and Lower Omo Agro Pastoralists Along Lake Turkana.

Interview Guide

My name is Adiedo Lisa Michelle, a Master of Arts student at the University of Nairobi's Department of Political Science and Public Administration. As part of the requirements for the award of Master's degree in International Relations, I'm conducting a study on "The Impact of Socio-economic Activities on Security: A Case Study of Turkana Fishermen and Lower Omo Agro Pastoralists Along Lake Turkana ". I kindly request you for a brief interview to better understand the impact socio economic activities have on security. The information you provide will be treated confidentially and strictly used for the research as it is intended.

General Information

4 Could you please describe a typical day for you?

5 How do you sustain yourself and your family?

6 How many people do you have to provide for in your family?

On Lake Turkana

7 How important is Lake Turkana in providing for your needs?

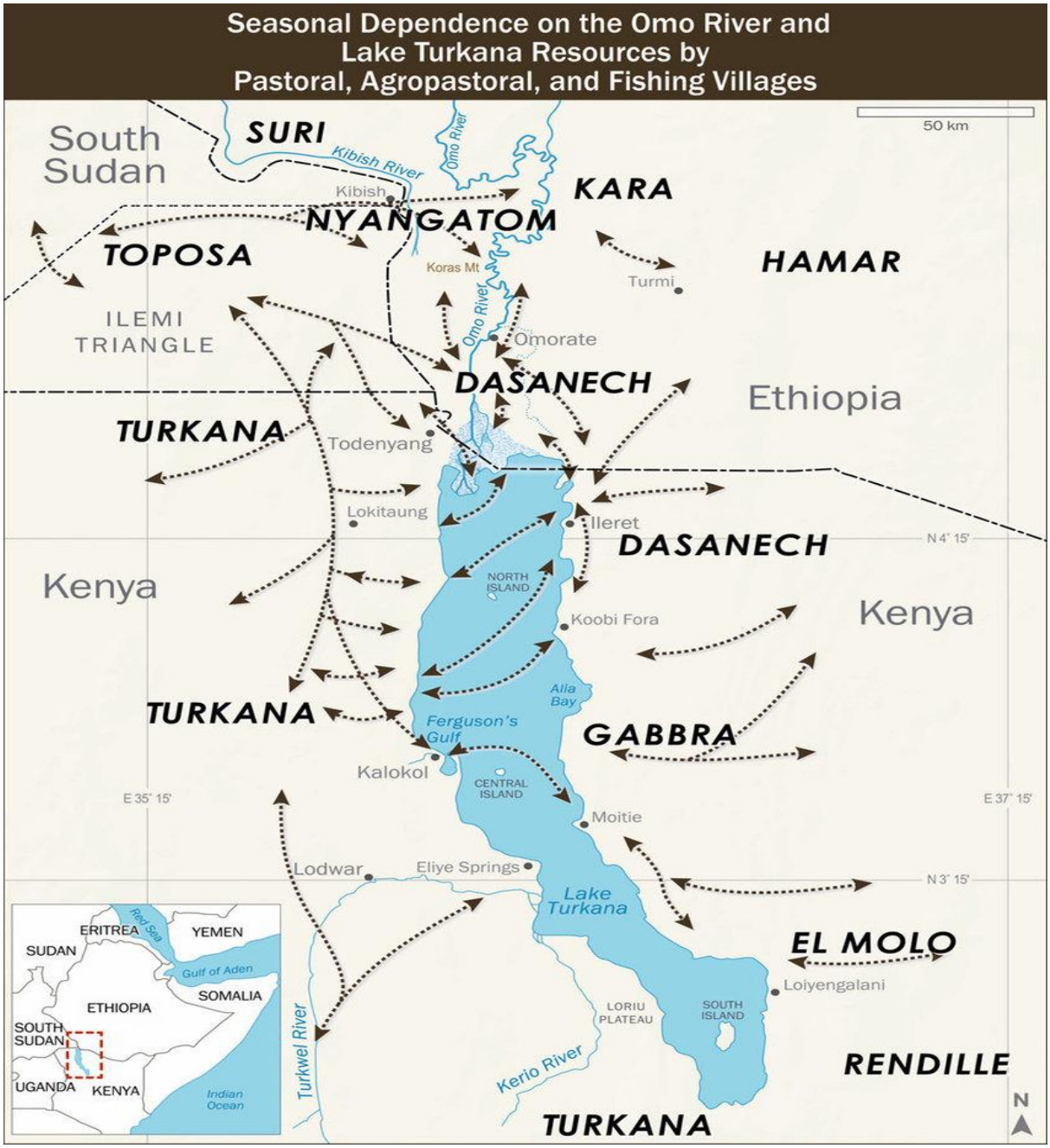
8 Do you feel the Lake is able to provide enough for all people who depend on it compared to before?

9 How would you describe the relationship with other communities that live around the lake and depend on it?

10 Have you tried practising other means of economic activities in the recent past? Why?

Any more information you think would be of help in this study?

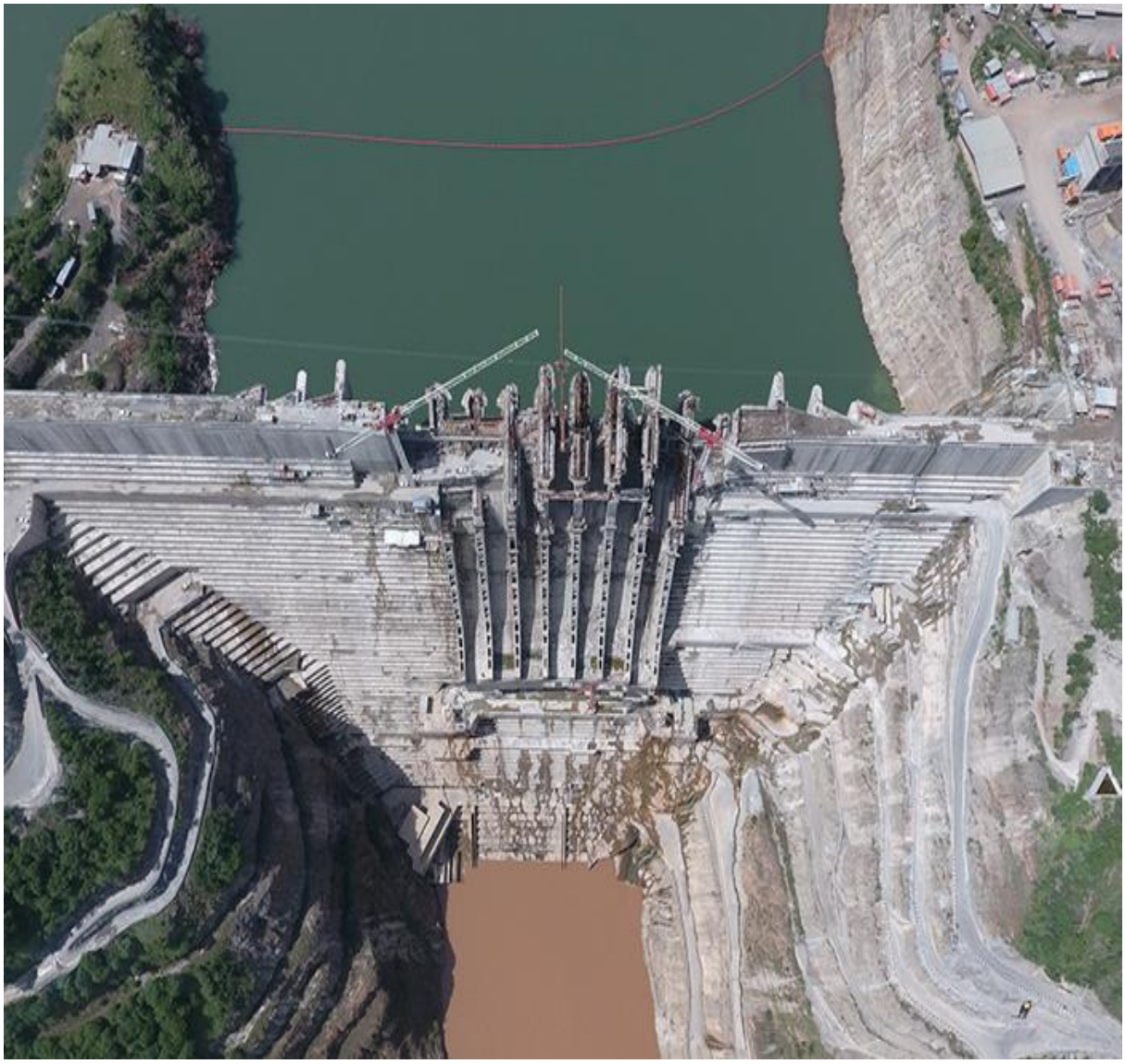
APPENDIX II:



Seasonal dependence on Omo River and Lake Turkana resources

Source: Research Gate

APPENDIX III:



The Gibe III Dam

Credit: Salini Impregilo

Source: Human Rights Watch