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PERSISTING TRANSBOUNDARY RESOURCE CONFLICTS IN AFRICA: A CASE STUDY OF RIVER OMO DELTA

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DECLARATION

This is my original study report and has not been submitted for award of a degree in any other University or learning institution.

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DEDICATION

I dedicate this research work to Lilian my wife, sons Kellymark, Barry and Leon for their prayers and unequalled support they afforded me throughout the study

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ABBREVIATIONS AND ACRONYMS

CAR - Central African Republic

CEO - Chief Executive Officer

DRC - Democratic Republic of Congo

EAC - East African Community

EIA - Environmental Impact Assessment

EWS - Early Warning System

FGD - Focused Group Discussion

GERD - Grand Ethiopia Renaissance Dam

GIWA – Global International Waters Assessment

GPS - Global Positioning System

GSU – General Service Unit

ICJ – International Court of Justice

IOTC - Indian Ocean Tuna Commission

ITLOS - International Tribunal for the Law of the Sea

JTEP – Joint Expert Panel

KII – Key Informant Interview

KMFRI – Kenya Marine and Fisheries Research Institute

KSDP – Kuraz Sugar Development Project

LVFO – Lake Victoria Fisheries Organization

LVBC – Lake Victoria Basin Commission

MDA – Ministries, Departments and Agencies

MEA – Multilateral Environmental Agreements

MoU – Memorandum of Understanding

NEMA – National Environment Management Authority

NGO – Non-Governmental Organization

NMK – National Museums of Kenya

OUV – Outstanding Universal value

RCMRD – Regional Centre for Mapping Resources for Development

REC – Regional Economic Community

SADC – Southern African Development Community

SDFA&BE – State Department for Fisheries, Aquaculture and Blue Economy

SEA – Strategic Environmental Assessment

SSA – Sub-Saharan Africa

UN – United Nations

UNCLOS – United Nations Convention on the Law of the Sea

UNEP – United Nations Environmental Programme

UNESCO - United Nations Educational, Scientific and Cultural Organization.

UNFSA - United Nations Fish Stocks Agreement

UNGA – United Nations General Assembly

WHC – World Heritage Committee

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ABSTRACT

Globally, there are 263 transboundary river basins, out of which 59 are in Africa and five in Kenya. The Omo Delta is located within Lake Turkana Basin, which is one of Kenya's shared ecosystems with Ethiopia. Due to bad governance, the shared resources have become a source conflicts between countries over access and control. The disputes between the Daasanach and Turkana began in the late 1950s with cattle banditry and killings over land rights and pasture grounds. The purpose of this study was to generate information for enhancing understanding of the conflicts in the Omo Delta with a view to influencing policy decision making on sustainable utilization of transboundary resources. Specifically, the study explored the source of the disagreement on utilization of the Omo River, examined the socio-economic and ecological impacts of the damming of the Omo River in Ethiopia and assessed the compliance of Ethiopia and Kenya with the relevant international laws in the use of the Omo River. A cross-sectional research design was adopted for this study and qualitative research instruments; key informant interviews and focused Group Discussion (FGD) were used for data collection. Qualitative methods were used to analyze the data. Diminishing water resources, unsustainable anthropogenic activities and weak natural resource management systems were the key determinants of conflicts. Significant drop in Lake Turkana water levels, sharp decline in fish production, weakened livelihoods and food insecurity were the key impacts of unsustainable use of River Omo. Ethiopia did not comply with the international conventions in the utilization of River Omo. Kenya and Ethiopia need to design a robust cross-border peace initiative in the Omo delta, undertake urgent joint Strategic Environmental Assessment (SEA) of the Gibe III dam and Kuraz Sugar Development Projects, and then develop a joint management and conservation plan for River Omo and Lake Turkana Basins.

Key Words*: Shrinking Natural Resources, Conflicts, Use of Transboundary Water Resources.*

CHAPTER ONE

AN OVERVIEW OF TRANSBOUNDARY RESOURCE CONFLICTS

1.1 Background to the Study

Africa is abundant in enormous natural resources ranging from animals, trees, mineral fields, rivers, reservoirs of oil and gas to land and other resources. Such resources support important livelihoods and in some case a source of influence. Moreover, many people in Africa depend on land as a critical source of livelihoods. A nation's access to natural resources also dictates its wealth and status in the international economic environment.[1]

Many of the violent struggles and wars in Africa, though, have been waged for access to and exploitation of resources. Poor management, unfair distribution and unsustainable use of these resources can be major contributing factors to disputes, violent conflicts and instability. Disputes over access to, control and use of resources, often arise due to the various uses different people have over the same resources.[2] For example, upstream use of water for generating hydroelectric power by an electricity company and use of the same water for irrigation downstream by farmers can lead to conflicts due to decreased quantity of water downstream. Occasionally, such conflicts are a manifestation of ineffective policies, weak institutions and processes. Over 450 hostile disputes over water and 37 cases of violent exchanges between rival nations, including destruction of a dam and other forms of actions have been reported during the past six decades.[3]

A transboundary water is a surface and underground water that crosses, defines or situated at the frontiers of two or more countries. Any substantial adverse environmental effects caused by a

[1] Nunzio, J. D. (2013). *Conflict on the Nile: The future of transboundary water disputes over the world's longest river*. Strategic Analysis Paper

[2] FAO,(2005). Natural Resource Conflicts, Collaborative Management and Sustainable Livelihoods

[3] Scozzari A. and El Mansouri B. Water Security in the Mediterranean Region: An International Evaluation of Management, Control and Governance Approaches. *Springer Science+Business Media.2011 Dordretch, The Netherlands, pp. 3-4.*

shift in the status of shared water resources that is linked to anthropogenic activities and whose physical origin is entirely or partially within the territory of another, constitute a transboundary impact.[4] The UN Watercourses Convention offers guidelines about how countries plan, protect, and use common water supplies. For instance, article 7 (1), (2) of the convention requires countries with shared resources to be guided by the concept of sustainable development when utilizing transboundary resources. Neighboring countries need to take all applicable steps to avoid causing substantial ecological harm in the territory of another state when using such shared resources. However, if substantial damage is done to another country, the country responsible for the damage is expected to take all necessary actions to remove or minimize that harm, in coordination with the affected country.[5]

1.2 Problem Statement

The River Omo is a transboundary resource that rises in the Ethiopian plateau and flows through Ethiopia's southwestern region over 644 km into Lake Turkana in Kenya. It is the Lake's only permanent inlet accounting for about ninety percent of the inflow. The Lake's ecosystem has been disrupted by the building of the Gibe III dam that began in 2006 and was completed in 2016. The 1,870 MW dam is the third dam to be constructed on River Omo. There have since been disputes about environmental and socio-economic impacts of the dam on Omo delta and Lake Turkana. Lake Turkana supports about half million people living on both sides of the lake in Turkana and Marsabit counties. The damming of the river led to significant decline in the lake levels which prompted a local Non-Governmental Organization (NGO) to file a suit at the Environment and Land Court in Nairobi against the Kenya Power and Lighting Company and the

[4] Pandey, K. (2017). *Lake Chad's Forgotten Crisis. Ecological degradation in the Chad Basin has triggered Africa's latest humanitarian crisis*

[5] Moudachirou, D. (2015). *Memorandum of Understanding Between Angola nad DRC as a Provisional Arrangement for their Maritime Boundaries Delimitation's Dispute- Reality of Myth*

Government of Kenya, over a power sale agreement with the Government of Ethiopia and failure to undertake a joint social and ecological assessment. The NGO further raised concerns about lack of social and environmental Impact assessment before commencement of Gibe III dam project. The Court declined to grant the order of prohibition sought by the Petitioner on 19th May, 2014. Whereas Ethiopia produced a report on the lower stream ecological impact evaluation three years after the construction started, the assessment excluded the Kenyan side.[6] The Omo delta has also experienced an increase in fierce skirmishes between the Daasanach and Turkana communities. In particular, Todonyang which is part of the Omo delta was most affected by the violent cross border resource conflicts that intensified in 2009 between the Daasanach and the Turkana.

The Ferguson Gulf, the Lake Turkana's most productive breeding and nursery grounds dried up in 2010 and remained dry till 2012, but dried up again.[7] In the early 1970s, the Omo delta was entirely in Ethiopia but had expanded into Kenya by 2005. Past scientific studies have attributed the expansion of the delta to a decline in lake levels due to human activities in the watershed.[8]

This survey therefore, purposed to find out the determinants of the conflicts in the Omo delta and the exact cause of the reduction in lake levels, what led to the drying of the Ferguson Gulf and the socio-economic impacts of damming of the River Omo. The study further sought to assess Ethiopia's compliance with international laws and conventions in utilization of the River Omo as a transboundary water resource.

1.3 Objective of the Study

The study's overall objective was to generate information vital for understanding the conflicts in

[6] Avery, S. (2017). *Fears over Ethiopian dam's costly impact on environment, people*
[7] Ojwang' et al, (2016). Lake Turkana: World's Largest Permanent Desert Lake (Kenya)
[8] (Ibid)

the Omo Delta with a view to influencing policy decision making on sustainable utilization of transboundary resources.

1.3.1 Specific Objectives

The study was guided by the following precise objectives:

1) To Identify the causes of the conflicts on the use of the River Omo in the Omo Delta
2) To examine the social, economic and ecological impacts of the damming of the River Omo on the delta
3) To assess the compliance of Ethiopia and Kenya and with the relevant international laws in the use of the River Omo

1.4. Research Questions

For this survey, the variables were categorized into dependent and independent variables. The dependent variable is persisting transboundary resource conflicts while the independent variable is use of River Omo.

Research Questions:

1) What were the causes of the transboundary resource conflicts in the Omo Delta?
2) What were the social, economic and ecological impacts of the damming of the River Omo?
3) Were the relevant international laws complied with in the damming of the River Omo?

1.5 Justification

This research has generated more information that is critical in the resolution of the

transboundary resource conflicts in the Omo Delta. While past studies tended to highlight environmental changes taking place in Lake Turkana, this study however, has identified and consolidated specific socio-economic impacts of changes in water levels and how the impacts are linked to utilization of River Omo. It has also identified the gaps in compliance with relevant international laws governing use of transboundary resources. The study has also assessed the commitments by Kenya, Ethiopia and international environmental bodies to addressing the negative ecological effects of the Gibe III dam and the irrigation Projects in Ethiopia. The survey has advanced the understanding of the conflicts in the Omo delta and generated information which are key to addressing similar transboundary resource conflicts not only in Kenya but in the region and globally.

Kenya could utilize the findings of this study as a framework for policy development and decision-making on the effective use of shared resources and conflict prevention and resolution. Furthermore, Kenya needs to reassess her approach and strategies for utilization and management of all her transboundary resources including mountains, lakes, rivers, aquifers, wildlife and river basins.

1.6 Literature Review

The purpose of this review was to highlight gaps that have been addressed by this study. It also analyzed past studies that had addressed similar research questions. The analysis was split down into three sub-themes. The first discussed theories that linked resource distribution and diminishing resources to conflicts. The second section dealt with the causes of resource based conflicts in Africa, and the third focused on the resource based conflicts in Kenya with focus on River Omo delta.

1.6.1 Theoretical Overview

Successful dispute resolution involves a comprehensive definition of the root cause of a dispute and should provide a framework on which to base approaches for interventions, prevention and resolution. The theories should aid contextualization of the dispute and its causes.[9]

a) **Hobbesian realism**

This study reviewed the Hobbesian realism that links conflicts to human beings' natural inclination to aggressiveness. Based on this view, people have to live with conflict if it is inherent aggressiveness and enforcement of the law to control such behavior becomes necessary.[10] However in this study, natural inclination to aggressiveness was not linked to the transboundary conflicts in the Omo delta.

b) Theory on Human Needs

This is another philosophy which provides a basis for analysis that focuses on unmet needs of mankind. It explains that dispute and aggression are susceptible to occur due to unmet needs, psychological and physiological.[11] This idea is based on the concept that humans can't survive and thrive unless they fulfill their essential needs, or until their core issues are solved. Social upheavals tend to occur where existing institutions have failed to fulfill fundamental needs such as identity, stability and acceptance.

[9] Ikejiaku, B. V. African Union, Conflict, and Conflict Resolution in Africa: A comparative Analysis of the Kenya and Zimbabwe Conflicts. (2011).
[10] Naticchia, C. Hobbesian Realism in International Relations. In S. Lloyd (Ed.), Hobbes Today: Insights for the 21st Century. (2012). (pp. 241-263). doi:10.1017/CBO9781139047388.016
[11]. Danesh, H. B. Peace-Based Education, *International Journal of Educational Reform*, 10.1177/105678791702600103, **26**, 1, (44-69), (2019).

c) Thomas Homer-Dixon's theory

This theory is about ecological insufficiency and armed confrontation and it tries to explain the link between diminishing environmental resources and violent conflicts. Thomas postulates that rapid growth in human population and the worldwide economy drives increased competition for natural resource extraction.[12] Consequently, resource based conflicts are expected to escalate with diminishing natural resources caused by increased unsustainable consumption. Environmental scarcities are a precursor of ethnic disputes, uprisings and other types of social aggression, especially in developing economies.[13] The theory highlights demand-induced shortage arising from expanded resource intake per capita, supply-induced scarcity produced by ecological resource degradation and depletion and structural insufficiency triggered by uneven social allocation of the resources that is controlled by relatively a few people.[14]

d) Indra de Soysa's theory

Indra de Soysa's theory of resource deprivation and international conflicts hypothesizes that conflict is more likely when at least one country has natural resources and when resources in a resource-rich country are closer to the border. However, when both countries have resources, conflict is more likely when the resources are located disproportionately in relation to the border. Examples of the role of natural resource wars include the war between Iran and Iraq, the occupation of Kuwait by Iraq and the Falkland conflict.[15] Other related conflicts in Africa include maritime border disputes between Angola and DRC, between Ghana and Cote d'Ivoire and the current Kenya-Somalia sea frontier dispute.

[12] Homer-Dixon, T. F. Environment, Scarcity and Violence. (2001).
[13] Ibid.
[14] Percival, V. and T. Homer-Dixon, (1998). *Environmental Scarcity and Violent Conflict: The Case of South Africa*.
[15] Casselli, F. et al, The Geography of Interstate Resource Wars. (2014).

These theories were vital in evaluation of the conflicts in Omo delta, where the conflicts were attributed to the shrinking waters of Lake Turkana, thereby increasing competition for the limited water resources between the Daasanach and the Turkana communities.

1.6.2 Legal and Institutional Framework for Transboundary Resource Management

Globally, there are 263 interstate river basins, out of which 59 are in Africa and five in Kenya. The challenges posed by these transboundary resources are unique.[16] Lake Turkana Basin is one of the shared ecosystems between Ethiopia and Kenya. Insecurity and conflicts in the River Omo delta have been the main political and ecological concerns of Ethiopia and Kenya. Satellite images of the Omo delta in 1973 showed that the delta was entirely within Ethiopia's borders. However, the satellite images acquired in 2005-2006 showed an expansion of the river mouth by 12 km into Kenya[17]. Decreased lake inflows and increased sedimentation were among the determinants that led to the shrinking of Lake Turkana and the widening of the delta. Ethiopia and Kenya have not developed a joint management plan nor signed bilateral arrangement on sustainable utilization and management of the Lake Turkana watershed as required by the UN Watercourse Convention on uses of International Watercourse.

Whereas the UN resolution 1803 gives nation-states right over self-determination and recognizes the sovereignty of nation-states and exclusive rights to utilize their natural resources, these rights should be exercised responsibly especially over shared resources. When nation-states exercise their exclusive rights in a manner that negates the principles of the charter, then it becomes a challenge to cooperation among nation-states.

On 21 May 1997, the UN Agreement on Common Water resources was approved and took effect

[16] UNEP and GEF. Transboundary Issues (2008).
[17] Ibid.

on the 17th August, 2014. It provides for equal and fair use of the common water supplies and requires the concerned states to promote optimal utilization while considering the interests of the nation-states with stakes to the resource.[18]

Provisions of the convention are very clear on what watercourse states need to do to utilize any transboundary water resources. For instance, it requires that all concerned states to be involved and share information about use of transboundary resources. However, the findings of this study indicated that Ethiopia did not involve Kenya in the use of River Omo as corroborated by International Rivers report on flawed preparation of the Gibe III Dam. The report showed that Ethiopia hastened the construction and failed to assess crucial aspects of the project, thereby violating domestic laws and international principles.[19] The convention upholds the principles of sustainable development.

However, the effectiveness of international law is limited as noted by Coplin.[20] In his book entitled the '*Functions of International Law'*, Coplin identified three elements of international law that do not operate in the international system. First, the institutions for representation and communication of the legal norms are lacking in the international community. Secondly, the international community is devoid of the belief system and the government to represent that belief system. Finally, the absence of a centralized process for receiving and punishing illegal behavior hinders the effectiveness of international law.

This study found out that the international laws are explicit on how watercourse states should utilize shared resources. However, weak institutions to communicate the legal norms and lack of

[18] UN (2014). Convention on the Law of the Non-Navigational Uses of International Watercourses
[19] International Rivers. Key Issues: Gibe II Dam, Ethiopia
[20]. Coplin, D, W. (1996). The Functions of International Law: An introduction to the Role of International Law in the Contemporary World

a centralized process for redress of victims of environmental offenders, is a matter of concern in the Omo delta and use of River Omo.

1.6.3 The Transboundary Resources Related Conflicts in Africa

a) The Nile Basin

River Nile and its basin form an important transboundary water body in Africa. The river and its basin serve all the five EAC countries, Egypt, Eritrea, Ethiopia, Sudan, South Sudan and DRC. An Anglo-Egyptian agreement signed in 1929 gave Egypt sole right and power over use of River Nile and tributaries.[21] The treaty further limited any abstraction that would affect the flow of River Nile. Out of an approximate river output of 84 billion m^3, the treaty also gave Egypt and Sudan annual allocation of 48 billion m^3 and 4 billion m^3 respectively. Additionally, Egypt and Sudan endorsed a bilateral agreement in 1959 that strengthened the British-Egypt Pact of 1929. The deal raised Egypt and Sudan's share to 55.5 billion m^3 and 48 billion m^3 respectively. From these allocations, only 10 billion m^3 was left for leakage and evaporation.[22] It is noteworthy that the two treaties left out the rest nine watercourse states.

The Nile Basin has been subjected to increasing anthropogenic pressure and has experienced disputes arising from different uses by different countries[23]. For instance, Egypt and Ethiopia has been involved in a dispute about the building of the Grand Ethiopian Renaissance Dam (GERD) on the Blue Nile River. The Blue Nile contributes about 60% of the volume of Nile waters and

[21] Mwangi S. Kimenyi and John M. Mbaku. Governing the Nile River Basin: The Search for a New Legal Regime (Washington, D.C.: The Brookings Institution, 2015) pp. 2-4.
[22] Ibid.
[23] Yihdego, et al, (2017). Nile River's Basin Dispute: Perspectives of the Grand Ethiopian Renaissance Dam (GERD)

injects most of the silt, which are crucial to Egypt's Agriculture.[24] The Nile delta supports over 40 Million inhabitants and Egypt has been concerned about impacts of filling the GERD on the flow of River Nile since rainfall in Egypt is almost non-existent. Historically, River Nile was vital to ancient Egyptian rise to wealth and power and Egypt considered the GERD an existential threat to its national interests. In May 2020, the media reported that Egyptian President Abdel Fattah al-Sisi threatened to apply military power to bring to an end the construction of the dam while Ethiopia reportedly deployed anti-aircraft missiles around the GERD.[25]

Noteworthy is the manner in which the dispute has been addressed in that the parties did not apply international laws but instead Egypt while addressing the United Nations General Assembly (UNGA) in September 2019, appealed for international intervention on the matter.[26] Major Powers including United States and Russia responded to Egypt's appeal. Russia facilitated discussions between Ethiopia and Egypt's leaders in Sochi, Russia. The United States and World Bank also sponsored negotiation between the parties but the talks hit a dead end when Ethiopia felt Washington was putting pressure on Addis Ababa into an agreement over Egypt's demands. Ethiopia has completed the construction of the dam but the bone of contention has remained the duration of filling the dam.

On 17th April 2020, Al-Monitor, an Egyptian newspaper, reported that Ethiopia was trying to mobilize the upstream countries against Egypt amid the Nile Dam disagreement.[27] This came at a

[24] Traci Pedersen - Live Science. The Nile: Longest River in the World. (2016). Available at: https://www.livescience.com/57023-nile-river-facts.html.
[25] The New Arab, 19th May 2020. https://english.alaraby.co.uk/english/news/2020/5/19/ethiopia-deploys-missiles-as-nile-dispute-with-egypt-escalates
[26] Meressa K. *et al.* Climate Diplomacy: Why has the AU been silent on the Ethiopian dam dispute?. (2019). Available at: https://www.climate-diplomacy.org/news/why-has-au-been-silent-ethiopian-dam-dispute. Accessed on 18.04.2020.

[27] Al-Monitor. Ethiopia Turns to Upstream Countries amid Nile Dam dispute with Egypt. April 17th 2020 Issue.

time when Washington and the World Bank had been mediating among Sudan, Ethiopia and Egypt. On 20th June 2020, Egypt called on the UN Security Council to resume the talks on the contentious issue of filling the dam, after latest rounds of talks ended without any deal.[28]

Whereas Ethiopia has scheduled to fill the dam in seven years, Egypt had demanded for a filling schedule of between 12 and 20 years, in that filling the dam over a longer period would limit any negative impacts of reduction in the volume of Nile waters flowing to Egypt. Ethiopia went ahead and started filling the dam in July 2020, without agreement with Egypt.

The use of River Nile has drawn interests from other countries that claim a share of it. In 2010, Burundi, Rwanda Tanzania, Uganda, Ethiopia and Kenya, signed a Cooperative Framework deal in Entebbe for the Nile Basin. Sudan and Egypt boycotted the signing of the Agreement on equal access to water of River Nile by the rest of watercourse states. The agreement restructured the allocations and control of Nile's resources and reduced monopoly of Sudan and Egypt over the river resources and allowed the riparian nations to use the river.[29]

River Omo is shared between Ethiopia and Kenya. The two countries have not signed any bilateral agreement on use of River Omo. The Lack of a formal agreement between Ethiopia and Kenya has partly contributed to the current unsustainable use of River Omo by Ethiopia, at the detriment of Lake Turkana.

b) Lake Malawi

Lake Malawi is shared among Tanzania, Malawi and Mozambique. The disharmony is about how the boundary line should extend from the land into the lake. The conflict was still

[28] Aljazeera 20th June 2020

[29] Nunzio, J. D. (2013). Conflict on the Nile: The future of transboundary water disputes over the world's longest *river. Strategic Analysis Paper*.

unresolved as at the time of conducting this survey and yet the maritime border dispute has dragged for decades. While Malawi's stand is that the maritime border should be in line with the lake's shoreline based on the Anglo-German Treaty of 1890, Tanzania is opposed to this view and maintains that the boundary that gives both states parts of the lake is a median position on the lake, a view supported by international law. Malawi cites the international court ruling on the Burkina Faso and Mali border dispute case whereas Tanzania refer to past similar maritime border conflicts including Cameroon and Chad boundaries on Lake Chad and other precedents on similar maritime conflicts.[30]

The bilateral talks between Malawi and Tanzania failed to resolve the dispute and the two countries involved Southern African Development Community (SADC). SADC formed a mediation team in 2012, comprising of retired presidents and head of governments. The mediation team has registered modest progress.

Whereas the Malawi-Tanzania dispute is about a maritime frontier conflict, the dispute between Ethiopia and Kenya is about unsustainable use of a shared water resource. Kenya and Ethiopia are still engaging bilateral diplomatic process to address the negative ecological effects of damming of River Omo and massive abstraction of water for irrigation of a sugarcane plantation. A joint Experts Panel (JTEP) comprising of five experts from Ethiopia and five from Kenya has been formed through the current bilateral discussions. Kenya could seek a similar mediation team if the current bilateral process fails to yield a favourable and effective resolution to the dispute.

[30] The Conversation. Why Malawi and Tanzania should stick to mediation to settle lake boundary dispute. *Conversation publication on 3/07/2017*

c) Ghana-Ivory Coast Sea Frontier Conflict

The dispute between the two countries over maritime border erupted immediately Ghana started discovery of and processing oil in Jubilee Field in the Atlantic Ocean. The maritime frontier dispute was taken to the Law of the Sea International Tribunal (ITLOS) that unanimously declared that Ghana did not breach Ivory Coast's territorial rights in extraction of oil. This is an outstanding case where an international legal system was used to resolve the conflict. Nonetheless the conflict between Kenya and Ethiopia has not escalated to the same level. Furthermore, the River Omo case is different since Ethiopia is exercising its sovereignty in the utilization of the river albeit with devastative ecological impacts on one of Kenya's Largest desert Lake. The ITLOS may not be an appropriate option for Kenya since the dispute is about use of a shared water resource.

d) Angola-Democratic Republic of Congo (DRC) Maritime Border Dispute

The ambiguous colonial treaties signed in February 884 and May 1891 at Bruxelles, have been linked to the conflicts between the two African countries. The treaties were vague in terms of delimitations and led to a substantial decrease in DRC's coast including an area rich in oil.[31]

Whereas the colonial legacy and unclear maritime border delimitations are blamed for maritime border dispute between DRC and Angola, the dispute between Kenya and Ethiopia, is about unsustainable use of a shared water resource. The utilization of the shared water resource by Ethiopia has resulted in harmful socio-economic and ecological effects on Kenya due to Ethiopia's failure to observe the relevant provisions of international laws on shared water resources. Kenya does not have any issues with Ethiopia over colonial influence on border

[31] Moudachirou, D. (2015). MoU Between Angola nad DRC as a Provisional Arrangement for their Maritime Boundaries Delimitation's Dispute- Reality of Myth

delimitations but Kenya desires that both countries uphold the principle of sustainable growth in the utilization of shared water resource.

e) Unsustainable Use of Transboundary Lake Chad

Lake Chad despite being an oasis for over 30 million inhabitants of Cameroon, Chad, Niger and Nigeria, the semi-arid basin has been shrinking due to the obstructions of the main inflow rivers. River Chari-Logone, which accounts for more than 80% of the inflow, was substantially changed when Chad constructed dams on the river and permanently impounded about 30 percent of its waters. Nigeria also constructed three dams on the Komadu-Yobe river system that contributed to about 2.5 percent of the lake water.[32] Climate change has partly contributed to the diminishing of the lake though the effects of climate change have not been evaluated.

In in 2006, a report by Global International Waters Assessment (GIWA) showed a situation in which construction of dams upstream of the catchment did not pay attention to impacts on people and ecosystem, hence the unsustainable uses were responsible for the drying of the lake. The shrinking lake left behind fertile land but with no water for irrigation. Farmers' disputes have increased as farmers, cattle herders and fisherfolk migrate closer to the lake to take over the fertile land. The area has witnessed an escalation of disputes among the citizens of the riparian countries over control of the remaining water.[33]

From 1963 to 2018, Lake Chad had lost about 90% of its waters but with far reaching ecological, economic and social ramifications on its basin.[34] Lake Chad Basin Commission that comprise

[32] Pandey, K. (2017). Lake Chad's Forgotten Crisis. Ecological degradation in the Chad Basin has triggered Africa's latest humanitarian crisis

[33] Ibid.

[34] François Misser. Kinshasa Vetoes Water Transfer Project to Replenish Lake Chad. *South world publication in June 2018*.

Nigeria, Cameroon, Chad, and Niger had initiated a trans-basin water transfer commonly referred to as "Transaqua" project, to transfer 100 billion m^3 annually, from River Ubangi, in the Central African Republic (CAR) to the dying lake. Due to the geostrategic importance of lake Chad, the ADB, World Bank, Exim Bank and the French Bolloré, had expressed readiness to finance the Transaqua" project.

Lakes Chad and Turkana are both desert lakes. Furthermore, the basins of both lakes are transboundary. Sustainable management and utilization of the lakes requires cooperation of the riparian countries. The shrinking of Lake Chad is an attestation of the effects of injudicious exploitation of shared water resources. The finding of this study have shown a similar pattern of overuse of River Omo in Ethiopia and the adverse environmental, economic and social impacts. Kenya needs to take deliberate actions to address the adverse impacts.

1.6.4 Kenya's Transboundary Resources and Conflicts

Kenya is endowed with transboundary natural resources including mountains, ocean, lakes, rivers, aquifers, fisheries and wildlife. Kenya shares Mt. Elgon with Uganda and Mt. Kilimanjaro with Tanzania. Other transboundary resources include:

a) Indian Ocean

Kenya's Blue Economy is mostly dependent on the Indian Ocean based activities e.g. fisheries and aquaculture, marine tourism, exploration of underwater oil and natural gas, ocean energy, shipping and maritime transportation, among other activities. Kenya as a littoral state has a coastline measuring 640 KM long and 880 KM including bays and inlets and an Exclusive Economic Zone (EEZ) of 200 nautical mile (nm) within the Indian Ocean.[35] The Kenya's EEZ

[35] United Nations Convention on the Laws of the Seas

borders Tanzania and Somalia in south the north respectively. Kenya exercises her sovereign interests over the discovery, development, management and protection of the natural resources in her EEZ.

i. Kenya and Somalia Maritime Border Dispute

Kenya has been locked up in a diplomatic strife with Somalia over a maritime area in the Indian Ocean measuring 100,000 Km^2. According to Somalia, its sea frontier with Kenya should diagonally extend from the terrestrial boundary while Kenya maintains the current sea border line. Following this disagreement, Somalia filed a petition at the International Court of Justice (ICJ). Kenya filed a response to the petition and the matter was still pending before ICJ as at the time of conducting this survey. The implication of Somalia's position, if granted, means that Kenya could lose 51,000 km^2 of its EEZ and 95,000 km^2 of the continental shelf.[36]

ii. Decreasing Stocks of Highly Migratory Fish Species

Fish are transboundary since they do not 'observe' the international maritime borders. Littoral and Island states thus do not have control over movement of fish in the ocean. Effective management of fish that migrate a lot over long distances like Tuna has been a challenge. Key Tuna stocks have been decreasing due to overfishing. For instance in 2012, WWF reported that stocks of Yellowfin tuna and Bigeye tuna were facing overexploitation as a result of too much fishing pressure.[37] Since an Island or littoral country cannot single-handedly manage the migratory fish species, the littoral and isle nations of the Indian Ocean have come together under the Indian Ocean Tuna Commission (IOTC) while others have ratified the United Nations Fish

[36] Chris Orwa. Daily Nations of 19th July 2019.
[37] WWF. Management and Governance of Reforms Urgently needed for a Sustainable Tuna Fishery in the Indian Ocean. (2012).

Stocks Agreement (UNFSA) to sustainably utilize and manage the migratory fish species. The goal of UNFSA is to guarantee the long-term survival and balanced utilization of the traversing and widely migratory fish populations within the context of UNCLOS. Kenya is a member of IOTC and a party to UNFSA. Inadequate research funding and weak capacity for resource governance are some of the challenges Kenya need to address.

b) Lake Victoria

The lake is shared among Kenya, Tanzania and Uganda in the ratio of six, fifty-one and forty-three percent respectively. Over 40 million people inhabit Lake Victoria basin. The population in Lake Victoria basin grows at approximately 3.5% yearly.[38]

In 1994, the EAC countries established the Lake Victoria Fisheries Organization (LVFO) was as a specialized institution to coordinate the development of shared fisheries and aquaculture resources within the EAC region. The LVFO is also mandated foster collaboration among the EAC nations, among other functions.[39] Another specialized body within the EAC is the Lake Victoria Basin Commission (LVBC). The LVBC coordinates sustainable development in the region.

However, despite the existence of specialized institutions to harmonize the development and utilization of resources in the EAC region, the region has faced challenges of fishing rights and frontier disputes. One such dispute is the Migingo Island row involving Kenya and Uganda.

i. Migingo Island Dispute

The EAC region has experienced disputes over frontiers and utilization of shared resources despite having established organizations responsible for fostering cooperation among the EAC

[38] Miriti. E. K. African Great Lakes. https://www.africangreatlakesinform.org/article/lake-victoria
[39] LVFO. https://www.lvfo.org

countries. The disputes have been attributed to the errors made by the colonial governments in drawing the boundaries, unclear and unmarked boundaries, lack and/or weak border management, population bulge and bad governance.[40] One such conflict is the Kenya-Uganda dispute over ownership of Migingo Island in Lake Victoria. Migingo Island has an area of 0.49 acre but is surrounded by waters extremely rich in fisheries resources. Diplomatic means were employed to prevent the conflict from escalating to a violent confrontation between Kenya and Uganda. The two countries agreed to survey and demarcate the boundaries so as to determine whether the Island is in Kenya or Uganda. During the survey, the demarcation line attributed the Island to Kenya but both Kenya and Uganda authorities are co-managing the Migingo Island.

Figure 1.6.4 Migingo Island surrounded by valuable fishing areas (*source: Insider, 2018*)

Critical analysis of the conflict pointed to other intervening factors other than the disputed ownership of the Islet. Uganda was prompted to send her revenue officers to the Island in 2004 after realizing that Kenya with only 6 % of the lake was exporting about 180,000 tons of Nile

[40] Wafula Okumu) Resources and border disputes in Eastern Africa, Journal of Eastern African Studies, (2010). 4:2, 279-297, DOI: 10.1080/17531055.2010.487338

Perch while Uganda with 43% was exporting only 70,000 tons yearly.[41] Prospect of oil deposits in Lake Victoria is another factor that fueled the conflict over the Island. The interpretations of the relevant maps linked to ancient Rift System in East Africa, have shown a North-South system that extends from South Lokichar to Lake Victoria.[42] The prospects of crude oil deposits in Lake Victoria were corroborated by the discovery of crude oil in South Lokichar in 2012; hence it was more probable that petroleum could be discovered within the Rift system in East Africa.

c) Lake Jipe

Lake Jipe lies across the Kenya-Tanzania boundary at 3' 40' S 37' 40' E[43], and measures about 30 Km^2. The Lake's main inflow comes from Mt. Kilimanjaro through River Lumi. Changes in water quality and critical fish (breeding and nursery) habitats and siltation emanating from human activities in the watershed, have led to significant decline in fish catches.[44] Originally, the lake was about 100 Km^2 but has shrunk in size to about 30 Km^2.[45] Kenya and Tanzania had not developed a joint cross-border watershed management and exploitation plan for Lake Jipe. While no dispute has erupted between Kenya and Tanzania over utilization of the Lake, the fishery of Lake Jipe is facing imminent collapse, hence, the need for riparian scientists to forge partnership and assess the biodiversity of the lake. The fishing in the lake is mainly for marketing as well as for subsistence.[46]

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[41] Christopher R. Rossi. The Migingo Island Dispute between Kenya- Uganda, 42 Brook. J. Int'l L. 659 (2018).
[42] Macgregor Duncan. History of the Development of the East African Rift System: A Series of Interpreted Maps Through Time, 101 J. AFR. EARTH SCI. 232, 250 (2015)
[43] Stephen Dadzie', Rene D. Ilaller' and Ethelwynn Trewavas. A Note on the Fishes of Lake Jipe and Lake Chale on the Kenya-Tanzania Border. (2000).
[44] GNF. Lake Jipe: Living Lakes.(2020) Available at: https://www.globalnature.org/en/living-lakes/africa/jipe
[45] Robert Ndetei. The role of wetlands in lake ecological functions and sustainable livelihoods in Lake Environment: A case study on cross border Lake Jipe - Kenya/Tanzania. (2009).
[46] [46] Stephen Dadzie', Rene D. Ilaller' and Ethelwynn Trewavas. A Note on the Fishes of Lake Jipe and Lake Chale on the Kenya-Tanzania Border. (2000).

d) Lake Challa

The international boundary between Kenya and Tanzania runs through the middle of Lake Challa. The lake is a crater lake with a surface area of about 4.5 Km^2. Water losses from the lake through evaporation surpasses the yearly rainfall on the lake's surface; hence the main inflow is through underground streams originating from Mt. Kilimanjaro.[47] The lake is an important transboundary water resource to the riparian communities who fish both for subsistence and marketing. Lake Challa's water level has shrunk significantly since 1980s due to environmental degradation around Mt. Kilimanjaro in Tanzania and climate change. The IUCN has listed Lake Challa tilapia (*Oreochromis hunteri*) as critically endangered. Kenya and Tanzania do not have a bilateral agreement on joint utilization and management of Lake Challa.

1.7 Methodology

Descriptions of survey area, the design of research, study framework, scope, data collection instruments and analysis are discussed in this section.

1.7.1 Survey Area

River Omo delta lies in the northern portion of Lake Turkana. The river runs through the Southwestern area of Ethiopia from Mt. Amara into the north end of Lake Turkana in Kenya where it produces a wide delta. The delta was entirely in Ethiopia in the 1970s but has extended into Kenya. The expansion of the delta has created a unique wetland measuring over 500 km^2 since 1970s.[48] The Daasanach community lives in the Ethiopian side of Omo delta. The Daasanach are also referred to as 'Geleb' in Ethiopia and 'Merile' and 'Shangila in Kenya. The

[47] Wolff, C et al. Modern Seasonality in Lake Challa (Kenya-Tanzania) and its sedimentary documentation in recent lake sediments. Limnology and oceanography, 59(5), 2014, 1621-1636. Doi:10,4319/lo.2014.59.1621

[48] Haack, B. (2014). *Monitoring Wetland with Remote Sensing: An East Africa Example*

population of the Daasanach was 48,000 in 2007.[49] They subsist on pastoralism, flood-retreat cultivation and fishing. River Omo floods in July and replenishes productivity of land for pasture and cultivation. They live semi-nomadic life and keep cattle, goats, sheep, donkeys and camels.

The Kenyan side of Omo delta is occupied by the Turkana community, a Nilotic ethnic community linked to Turkana County, specifically Lake Turkana, where they settled after migrating from Southern Sudan.[50] They keep cattle, goats, sheep, donkeys and camels. The areas experiences hot and dry climate with high temperatures ranging between 20ºC and 41ºC and with a mean of 30.5ºC.[51] Todonyang village is located adjacent to the international frontier and is the largest village on the Kenyan side. Todonyang is an administration location in the Lake zone Ward of Turkana North. The population of the Lake zone ward is 35,033 (2019 census). Todonyang has experience fatal and violent cross-border conflicts for decades. The water of Lake Turkana is brackish and the rainfall in the area is unreliable and when it ever comes, the rainfall is scant; hence the Daasanach people wholly depend on the waters of River Omo for household consumption and watering their livestock.[52]

Lake Turkana is the largest desert lake with a surface area of 7560 km^2. River Omo provides about 90% of the inflow to the lake. The lake is source of livelihoods for more than 500,000 people living along the lake both in Marsabit and Turkana counties. The number of people in Turkana who are dependent on fishing in Lake Turkana is about 250,000.[53]

[49] Sagawa, Toru. War experiences and self-determination of the Daasanach in the conflict-ridden area of northeastern Africa. (2010). *Nilo-Ethiopian Studies 14: 19-37*
[50] Burton, W. J. Nilotic Studies: Some Past Problems and Prospects. Anthropos, 1988, Bd. 83, H, 4./6. (1988), pp.453-468. Available at: http://www.jstor.com/stable/40463377
[51] Turkana County Development Report. County Annual Development Plan (CADP) 2019/2020.
[52] Aurah, S. N. (2014). Turkana-Daasanach Relations: Economic Diversification and Inter-Communal Conflict
[53] Ojwang' et al, (2017). Lake Turkana: World's Largest Permanent Desert Lake (Kenya)

Figure 1.7.1: Kenya's map indicating the Location of Omo Delta (source: UNEP)

Todonyang Location is the northernmost administrative unit of Turkana County. The area is characterized by resource-based conflicts, and cross-border cattle rustling.

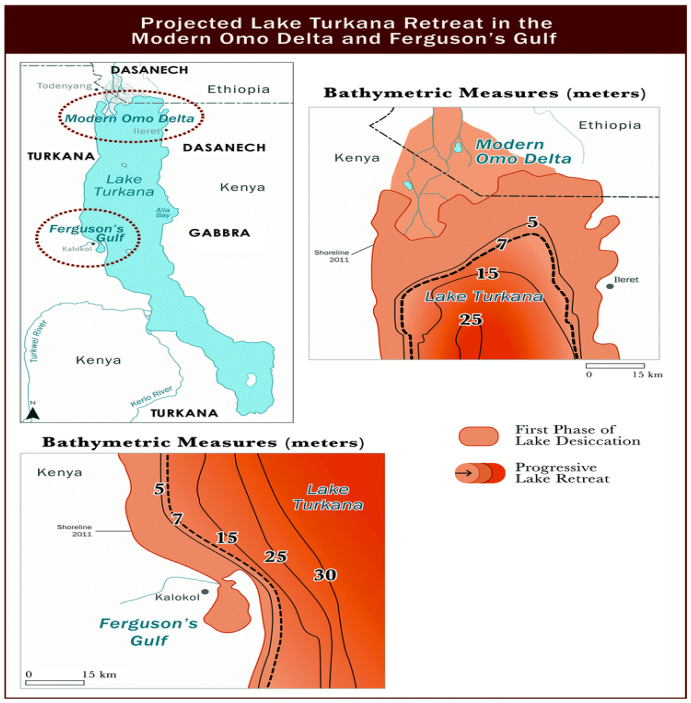

Figure 1.7.2: Map of Lake Turkana, the River Omo the Delta and Ferguson gulf (Source: UNEP, 2018)

1.7.2 Study Framework

The study considered several dimensions including the persons who participated in the study. It considered the Unit of analysis, the scope of study, selection of cases and data collection methods. The cases included individuals, who formed the key informants and the participants in the Focus Group Discussions (FGDs). The participants in the FGDs also included members of Todonyang community, neighbouring fishing villages and Kalokol in which Ferguson Gulf is located.

1.7.3 Scope

The scope encompassed examining how the use of River Omo is contributing to the conflicts; assessment of observance or non-observance of international laws on transboundary resources by Ethiopia and Kenya and its correlation with the disputes. The fishermen and pastoralist residing at the delta, service providers in Todonyang location, local opinion leaders, county officials, relevant research institutions, and relevant government ministries, department and agencies, Non-Governmental Organization (NGOs) involved in conflict management and the Ethiopian Embassy in Nairobi, were all targeted as key cases for this study.

1.7.4 Research Design

The design that was adopted for this survey was cross-sectional. Data gathering was done once at the same time and Focused Group Discussion (FGD) and Key Informants Interviews (KIIs) methods for data collections.

1.7.5 Data Collection Research Instruments

Questionnaires were administered during the Focused Group Discussions (FGDs) and Key Informants Interviews (KIIs).

a) Focus Group Discussion

A Focus Group Discussion (FGD) technique involving a structured discussion was employed to get detailed information on conflicts from groups of sampled residents of Key villages including Todonyang, 'Old 'Ghana', Windmill', Atanabuel, Kapedoru, Namorotot, Kanamukuny, Nayanae-Kabara, and Lowarengak. Fishermen at Impreza fishing village in Kalokol were also interviewed due to their close proximities to the Ferguson Gulf. In each fishing village, a group consisting of between 15 to 25 members of the community including women, youths and men participated in the study. A sample of the questions for the FGDs is annexed.

b) Key Informant Interviews

The key informants from the targeted ministries, departments and agencies were identified based on their knowledge and experience of the River Omo, its uses and the connected conflicts. Representatives of the following Ministries, department and agencies participated in the survey: Foreign Affairs, Interior and Coordination of national Government, Water, Sanitation and Irrigation, Energy, State Department for Fisheries, Aquaculture and the Blue Economy, National Environment Management Authority (NEMA) and National Museums of Kenya (NMK). The Ethiopian Embassy in Nairobi declined to participate in this study. In Turkana County, the County Director of Fisheries, the CEO of Friends of Lake Turkana Trust, the Chairman of Lake Turkana BMU Network and the Chief Todonyang Location were interviewed as key informants. A sample of the questions for the FGDs is annexed.

1.7.6 Data Analysis

The data was cleaned and categorized based on the following thematic areas: nature of conflicts, causes of conflicts, use of River Omo and impacts, concept of compliance to international laws

and recommendations. Qualitative methods were then used to analyze the data. The analysis involved different dimensions including understanding of the resource based conflicts with a view to providing detailed descriptions of the nexus between the dependent variable (conflicts) and independent variable (utilization of River Omo). Analytical and integrative skills were applied in data synthesis. Secondary data in the form of past similar research evidence, satellite imagery of the delta and Lake Turkana, was evaluated and used to corroborate the results. The most stated recommendations given by the community, the government representatives and the NGO were evaluated based on feasibility for implementation.

1.8 Chapter Outline

The survey is arranged into six parts. The chapters discuss an overview of transboundary resource conflicts, causes of transboundary resource conflicts in Omo Delta, socio-economic and ecological impacts of damming River Omo, compliance with the international laws in the use of River Omo, findings and discussion, conclusion and recommendations.

Chapter 1: An Overview of Transboundary Resource Conflicts

Chapter one covers the following themes: contextual information on the survey, problem statement, purpose of the study, research questions, rational, literature review, theoretical overview, legal and institutional framework for transboundary resource management, transboundary resource related conflicts in Africa, methodology, study area, study framework, scope, design of the survey, collection and analysis of data, research instruments and chapter outline.

Chapter 2: Causes of the transboundary resource conflicts in Omo Delta

Chapter two assesses the causes of resource based conflicts in Omo delta. It distinguishes the

determinants of the conflicts from other causes conflicts, conflicts trends, conclusion and proposed ways of conflicts resolutions.

Chapter 3: Socio-economic and ecological impacts of damming River Omo

This chapter gives a short introduction, social, economic and ecological consequences of Gibe III dam, conclusion and proposed ways for addressing the adverse impacts

Chapter 4: Compliance with the international laws in the use of River Omo.

This chapter provides an brief introduction, the existing international laws and conventions, utilization of River Omo in Ethiopia and Kenya, compliance with international laws and conventions in the use of River Omo, efforts to alleviate the ecological effects of Gibe III dam, conclusion and proposed ways for sustainable utilization and management of River Omo

Chapter 5: Summary, Conclusion and Recommendations

This chapter provides a summary of the results, conclusions and proffers recommendations.

CHAPTER TWO

CAUSES OF THE TRANSBOUNDARY RESOURCE CONFLICTS IN OMO DELTA

2.1 Introduction

The sources of the disputes in the Omo delta are discussed in this chapter. It further examines the major factors that contribute to the resource related conflicts, the conflicts trends and the shrinking natural resources-conflicts nexus. The chapter also provides recommendations and conclusion.

2.2 Determinants of the Conflicts

Historically the Turkana community in northwest Kenya and the Daasanach (or Merille) in southern Ethiopia have battled over ethnic disparities and resource rivalry. Although the initial cause of the dispute seems to have been forgotten, ecological and anthropogenic influences have escalated the dispute over the years. The disputes between the Daasanach and Turkana commenced in the late 1950s with cattle banditry and killing over land rights and pasture grounds.[54] However, this study discovered that all the fishing villages in the Omo Delta had experienced resource linked conflicts. The conflicts had persisted for over two decades. Diminishing water resources, unsustainable anthropogenic activities, weak natural resource management systems and climate change were the key determinants of conflicts in the River Omo delta.

Climate change has also contributed to the dwindling resource base in the River Omo-Turkana basin. The area has experienced a rise in temperature of nearly 2º C since 1960[55]. The gradual change in climate has contributed to higher incidences of droughts which occur almost after

[54] Jesse Creedy Powers. Climate Change and the Turkana and Merille Conflict. (2011). Available at: https://mandalaprojects.com/ice/ice-cases/turkana-merille.htm
[55] Ibid

every two to three years. The rising populations, increasing herds of livestock and the frequent droughts have increased pressure on the natural resources. This has led to increased competition for water, pasture and grazing lands. During prolonged droughts, the delta becomes a hotspot of conflicts as the Turkana and the Daasanach migrate to the wetlands in search of pasture and agricultural lands. This coping strategy has been counterproductive due to the frequent clashes which erupt between the two communities whenever they converge with their large herds of cattle. The movements of herders with their herds of cattle sometimes occur across the border and this has been creating tensions and at times results in violent fights between them.

The qualitative data collected showed that the Omo delta has been expanding as Lake Turkana waters diminish. The delta which was entirely in Ethiopia in 1970s is currently in Kenya as a result of dwindling water levels of Lake Turkana. The decreasing lake level has created a wetland which provides rich pasture for the Daasanach and the Turkana pastoralists. Both communities are pastoralist and each fights to gain access to and control of the rich pasture in the delta and to exploit the resources therein including the rich fishing grounds. The Daasanach community continues to follow the receding lake into Kenya while the Turkana community considers this as an encroachment on their pasture and fishing grounds.

The post droughts periods have been characterized by sporadic armed cattle raids from both sides of the adjoining communities as they try to re-stock the herds of cattle lost to severe droughts Whereas the Ethiopian Government has initiated irrigation schemes where the Daasanach cultivate sorghum and other crops, such irrigated agricultural projects are lacking on the Kenyan which is inhabited by the Turkana community. The disparity in development has left the Turkana community with the option of wetland for small-scale agriculture, but in most cases, their crops are destroyed by the Daasanach herds of cattle from across the border. Such incidences have

fueled the animosity between the two communities.

In additional to climate change, information obtained from this survey has linked the decline in lake's water level to unsustainable anthropogenic activities in the River Omo Basin. Information provided by the Ministries of Water, Sanitation and Irrigation, Foreign Affairs, NEMA and the National Museum of Kenya, indicated that besides the successive damming of River Omo, the Ethiopia Government was undertaking major water intensive irrigation ventures in lower Omo region. One such venture is the Kuraz Sugar Development Project (KSDP). The KSDP employs flood irrigation method which consumes excessive water due the high evaporation rates that characterizes the region. Whereas published reports[56] showed that the total acreage under the KSDP irrigation scheme is 175,000 hectares of land, the data collected from this study indicated that the acreage under irrigation was being expanded and was estimated to be between 150,000 and 300,000 hectares.

The lake level was expected to continue to shrink due to the permanent abstraction of river Omo waters for irrigation. It is also important to note that the site where the KSDP is located is past the dam, hence water is extracted when the flow of River Omo has already been reduced by the Gibe III dam. The hostile climatic conditions in which Lake Turkana is situated, has accelerated evaporation and subsequently increased the rate of shrinking water level[57]. Permanent abstraction of River Omo waters would definitely cause far reaching ecological ramifications on Lake Turkana since the river injects over 90 percent of fresh water to the lake.

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[56] Benedikt Kamski. The Kuraz Sugar Development Project (KSDP) in Ethiopia: between 'sweet visions' and mounting challenges (2016), *Journal of Eastern African Studies*, 10:3, 568-580, DOI: 10.1080/17531055.2016.1267602

[57] Wright, David K., *et al*. "Lakeside View: Sociocultural Responses to Changing Water Levels of Lake Turkana, Kenya." *The African Archaeological Review* 32, no. 2 (2015): 335-67

The ever cloudy-brown colour of River Omo is an indicator of substantial sediments loads resulting from poor land use practices upstream such as overgrazing, soil erosion and deforestation, among other factors. As the river enters the lake at reduced flow rate, the fine soil and sand particles get deposited at the delta thereby precipitating the enlargement of the delta and shrinking of the lake. Siltation also impairs water quality and is a threat to the health of aquatic biodiversity of Lake Turkana.

Weak resource governance in the Lake Turkana Basin including the Omo delta is another cause of conflicts. Natural resource governance in the study area was found to be either lacking or very weak where it existed. The institutions and laws that promote equity and sustainable resource use had not been established. Whereas there were institutions responsible for sustainable management of the transboundary resources in Kenya, Ethiopia and Kenya had not agreed on a joint strategy for equal access to, management and utilization of the shared resources in the River Omo-Lake Turkana Basin.

2.3 Conflicts Trends

Due to the hostile climatic conditions and unpredictable weather pattern, the Turkana and the Daasanach communities follow a nomadic, agricultural and pastoralist pattern of life and behaviour in the delta. The two communities have a past that is characterized by sporadic disputes which erupt over access and control of grazing lands, pasture and fishing grounds.[58]

The findings of the study further showed that the Turkana community has been experiencing conflicts with the Daasanach community for a long time. Armed cross-border cattle raids used to be the determinants of disputes in the Omo delta several decades ago. However, the emerging

[58] ECC. Drought and Conflict across the Kenyan-Ethiopian Border. (2011). Available at: https://library.ecc-platform.org/conflicts/drought-and-conflict-across-kenyan-ethiopian-border

resource scarcity has exacerbated the conflicts in the River Omo delta. Conflicts usually intensify during prolonged droughts when food, water and pasture become scarce. During such periods, the increased competition for the meagre resources leads to violent clashes in the Omo delta. Whenever violent conflicts erupt, cross-border trade in grains and other food commodities become impossible. This research revealed that lives have been lost by both communities and cases of children who had lost their parents to fatal attacks by Daasanach were reported among the Turkana community. The ensuing tension between the two communities makes it difficult for the Turkana fishermen to access their fishing grounds for fear of being ambushed by the Daasanach fighters. Food security especially among the Turkana community suffers most every time the two communities fight. Theft of fishing gears, loss of fish business and incomes, increased poverty and increased school drop outs are some of the aftermaths of the persistent conflicts. In order to avoid surprise attacks by the Daasanach and as a stop-gap measure, the Turkana living in Todonyang migrate to Lowarengak, almost 25 km southwards. Some of the displaced community members go back to Todonyang when calm returns while others have decided to stay forever at Lowarengak. Such decisions forces children to drop out of schools due to the frequent displacement.

The lake provides a permanent watering source for the Turkana herders who graze along the delta. The pastoralists, fishers and foragers have strong cultural attachment to the lake.[59] Furthermore, the Turkana community derived important services from the critical habitats including fish breeding areas and swamplands along the River Omo delta. Wetlands are the only

[59] Wright, D. K. *et al.* Lakeside View: Socio-cultural Responses to Changing Water Level of Lake Turkana, Kenya (2015)

areas from which communities access quality pasture during the prolonged droughts.[60]

The efforts by Government of Kenya through the local administration, the Todonyang Catholic Parish and Non-Governmental organizations (NGOs) have not produced long lasting solutions to the conflicts due to the cross-border nature of the disputes. However, the community members noted the critical role the General Service Unit (GSU) camp at Todonyang was playing in providing security. The community also appreciated the efforts of Todonyang Catholic Mission whose relief aid always come handy in times of emergency.

2.4 Proposed Ways of Conflicts Resolutions

The following recommendations were proffered: development of the area, cross-border peace initiatives and enhanced border security, establishment of an emergency rescue centre and training of community on conflicts resolutions. The Omo delta lack basic services and infrastructures such as access potable water, access road, well equipped schools, fish preservation facility, communication and market facilities. Whereas IGAD had established an early warning system for conflicts and response mechanism in the Turkana-Omo corridor, this research revealed that coordination between the respective national units was conspicuously lacking. It is on this premise that this survey has recommended for establishment and/or strengthening of the existing early warning system (EWS) to monitor conflicts and ensure sustainable peace through regular cross-border information sharing. Building capacity of the border communities and sensitization on sustainable utilization, management and conservation of shared resources is also recommended. Moreover, observance of respective national laws governing utilization of natural resources is strongly recommended.

[60] MEMR. Kenya Wetlands Atlas (2012)

Moreover, Kenya and Ethiopia need to repair and/or install the damaged the border beacons to warn and limit movement of pastoralists across the border. The two countries need to initiate and support cross-border peace programs.

2.4 Conclusion

The communities living in River Omo delta have been experiencing resource based conflicts ever since water resources started to decline. The waters of Lake Turkana have been shrinking due to unsustainable utilization of River Omo, which accounts for 90% of all inflow to the lake. The delta has been expanding past the international border into Kenya as the water levels decrease. The Daasanach community has occupied the wetland left by the retreating lake thereby displacing the Turkana fishermen from the fishing grounds. The Turkana community has resisted the attempts by the Daasanach to displace them from the delta. Prior to the shrinking of the lake, the lake in itself was a natural barricade that kept the two communities apart hence there were fewer incidences of Turkana-Daasanach clashes. However, increased incidences of violent conflicts between the two communities have been experienced, some of which have led to loss of lives from both sides. Diminishing water resources, unsustainable anthropogenic activities, weak natural resource management systems and climate change were the key determinants of conflicts in the Omo Delta and Lake Turkana Basin.

CHAPTER THREE

SOCIO-ECONOMIC IMPACTS OF THE DAMMING OF THE RIVER OMO

3.1 Introduction

The social, economic and ecological impacts of the dam on the lives of the communities living in the Omo delta are discussed in this chapter. The chapter further analyses the indirect impacts of the reduced water levels on tourism and job opportunities. Recommendations and conclusion are also provided.

3.2 The Ecological Consequences of Gibe III Dam on Lake Turkana

The findings of the survey showed that Lake Turkana supports livelihoods of many fishermen, fish processors and fish traders who live near the delta and along the entire lake shore. Fishing in the delta is an important source of income for many fishers. Moreover, fish is an vital source of protein to many families especially during prolonged droughts when most communities lose their livestock to droughts. The lake also supports other income generating activities and recreational ventures such as water transport, tourism, sport fishing, boat racing and swimming.

However, the damming of River Omo has had adverse effects on the services derived from the lake. The critical fish habitats in the delta and along the Lake have been affected by diminishing water levels. One such Critical habitat is the Ferguson Gulf. The fishers reported that the gulf had not regained its original status as at the time of this survey since it dried up during the filling of Gibe III. The fishers at Impreza beach additionally reported that in 2016, the depth of water in the gulf was knee deep and they were able to wade across from Impreza beach to Long'ech Beach which hitherto could only be crossed by motorized boats when Ferguson Gulf was full. The map below shows Ferguson Gulf in 2016.

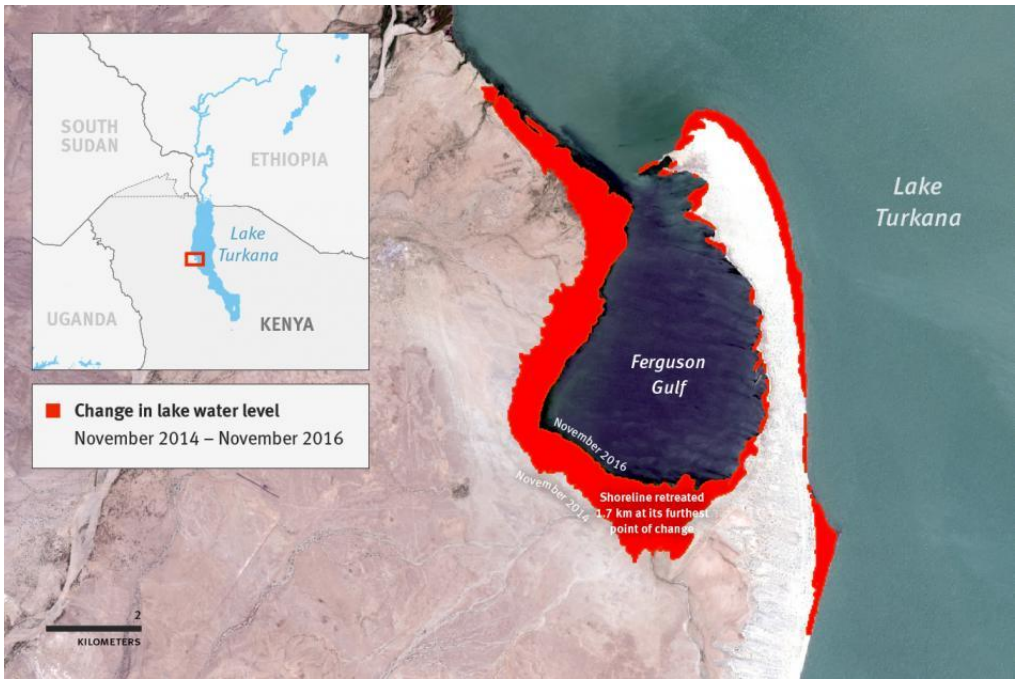

Figure 3.2.1:Map of Ferguson Gulf in 2016 showing the change in water levels up to 1.7KM (area marked red) (Source: HRW, 2016)

The fishers also reported reduced catches of Nile Tilapia from 2015 to 2019.

According the Ministry of water and Sanitation, the Gibe III Dam posed imminent danger to Lake Turkana and the future of the Lake was bleak unless remedial measures were taken urgently. The threat to the lake emanated from the massive impoundment of the river for generation of hydro-electric power and the huge abstraction of its waters for flood irrigation at the Kuraz Sugar Irrigation Scheme in Ethiopia. A hydrology expert and a specialist in African water resources cautioned that a 20 m drop in the Lake's water level would occur if the planned abstraction of 50 percent of River Omo's inflow to Lake Turkana was implemented.[61]

3.3 Socio-Economic Ramifications of Gibe III

In 1997, the UNESCO WHC inscribed National Parks in and around Lake Turkana on the World

[61]Avery, S. T. The Impact of Hydropower and Irrigation Development on the world's largest desert lake. What Future for Lake Turkana? (2013).

Heritage (WH) list due to its Outstanding Universal Value (OUV). The National Parks include Central Island, Southern Island and the Sibiloi National Parks. Furthermore, the lake provides a suitable ecosystem for research on different species of fauna and flora. The area also provides crucial sites for breeding of hippopotamus, venomous snakes, the Nile Crocodiles and a stopover for many migratory birds. However, on 28th June, 2018, the Committee on World Heritage (WHC) meeting in Bahrain inscribed the Lake among WH at risk due to the negative effects of Gibe III dam.[62] It is imperative to note that the Committee had raised concerns about the significant changes on Lake Turkana's ecosystem that were emanating from the disruptive impacts of the dam and the KSDP on the lake's inflow.

The fishers also reported that the unsustainable human activities on river Omo had caused adverse social and economic impacts among the lake riparian communities. They reiterated that they had for a long time, depended on Lake Turkana for their livelihoods. Despite the lake's saline nature, the community had relied on the lake as their key permanent source of water especially during prolonged droughts. They relied on the Lake for fishing, tourism and water transport activities. This study revealed that fishing, tourism and water transport had significantly gone down due to the shrinking water levels.

[62] UNESCO WHC. Lake Turkana National Parks (Kenya) inscribed on List of World Heritage in Danger (2018). Available at: https://whc.unesco.org/en/news/1842. Accessed on 12.04.2020

Figure 3.2.2: A photo of a Species rich fish catch at the Omo delta and sun drying of fish at Todonyang Fishing Village in Turkana. The fish species are threatened with extinction if the water level continues to drop (Source: Goran, 2017)

Livelihoods and food security were also affected due to decreased fish catches. Past research findings by scientists from KMFRI also noted that the decline in fish landings in Lake Turkana was associated with drops in water level.[63] For instance, analysis of the fish landings in relation to the building and filling of the dam showed that the total annual fish production was nearly 4,700 MT worth about Kshs. 90 Million in 2006. The fish production then rose to 9,000 MT worth Kshs. 300 Million in 2009. However, the fish catches took a nose dive in 2012 to about 3,000 MT valued at Kshs. 240 Million. The fish catches then increased again in 2015 to nearly 10,000 MT worth Kshs.700 Million. However the fish production plummeted from 10,000 MT to about 4,300 MT in 2016. A summary of the annual fish catches and the water levels are as shown in the table:

[63] KMFRI. The Status of Kenya Fisheries: Towards Sustainable Exploitation of Fisheries Resources for Food Security and Economic Development (2018).

Table 3.2: A comparison of fish catches with water levels in Lake Turkana

Year	**Annual Fish Production (MT)**	**Value of Fish (Kshs. 000,000)**	**Lake Water Levels (m)**	**Status of construction of Gibe III Dam Projects**
2006	4,700	90	359	Dam Construction began
2009	9,000	300	362.5	Construction
2012	3,000	240	356.8	Fully completed
2015	10,000	700	363	Dam filling commenced in January 2015
2016	4,300	450	360.5	Dam filled to capacity and opened

It is imperative to note that other intervening variables such as fishing effort and accuracy in data collections could have affected amount of fish caught during the period shown in the table. However, holding other factors constant, there is a strong link between fish catches and the water level in 2015 and 2016. During that period the water level dropped by about 3 m with a corresponding decline in fish catches of approximately 7,000 MT. From routine scientific data collection on the lake levels, the yearly variations in water levels are between 1-1.5 m with the period from September to December recording the highest water levels.[64] The decline by 3 m in the water level was strongly linked to abstraction of River Omo in Ethiopia. Moreover, research conducted by a team of scientists 2015-2016 showed that high water levels were associated with higher catch per unit effort (CPUE), which translated to high incomes especially during higher

[64] Ojwang, W. *et al*. Lake Turkana: World's Largest Permanent Desert Lake (Kenya). 10.1007/978-94-007-6173-5_254-1. (2016).

water levels.[65]

As such, the socio-economic impacts of the unsustainable utilization of River Omo are significant given that more than 300,000 persons depend on the lake directly and indirectly for their livelihoods. A study done in 2017 on the nexus between the general life of the riparian communities and the lake showed a strong dependence on Lake Turkana.[66]

The shrinking water levels of the Lake have also affected beach infrastructure at the fish landing beaches. As the lake become shallower at the beaches, the fishing and transport boats have faced challenges of safe landing. For instance, at Lowarengak beach, the fishers reported that they had to disembark from their boats far off-shore from their normal landing sites. This meant that loading and off-loading of goods required more labour and time to transport the goods to and from where the boats are anchored.

Youth engaged in tourism around Lake Turkana expressed their fears about the future of tourism around the Lake following the red listing of the Lake by WHC and the continued decline in water level. Hitherto, tourists visited the lake to watch birds and other wild animals. Nearly 350 migratory and native bird species inhabit Lake Turkana ecosystem.[67] Furthermore, the lake is home to Nile Crocodiles that mainly breed at the Central Island National Park. The park is located in the centre of the lake and has been a major tourist attraction site in Turkana County. Tourists visit the island to watch birds and the crocodiles and enjoy the beautiful scenery, also described as the 'foundation of mankind'.[68] The key informant from the NMK was apprehensive about the possibility of the birds shifting to other less degraded water bodies outside the basin

[65] Gownaris*, et al*. Fisheries and Water Level Fluctuations in the World's Largest Desert Lake: *Lake Turkana Fisheries and Water Level Fluctuations*. Ecohydrology (2016). 10.1002/eco.1769.
[66] Benedict Moran. Lake Turkana Shrinks (2017)
[67] Ibid
[68] Ibidem

and that it was highly likely that the crocodiles could as well migrate to other areas if the water levels continued to shrink. This could adversely affect tourism and the connected benefits derived by transporters and hoteliers who provide services tourists in the region.

3.4 Loss of Tourism and Job Opportunities

The WHC's red listing of Lake Turkana was expected to have far reaching social and economic ramifications. The WH sites are renowned for being the most coveted and popular tourists' destinations in the world.[69] Sites with both natural and cultural heritage are tourists' attraction sites globally and Lake Turkana has been providing both natural and cultural heritage sites. The Lake offers both scenic landscape and archaeological sites whose values may be lost if the current environmental damages continue unabated.

Tourism in Lake Turkana region and Kenya as whole was expected to decline due to the red listing of the Lake Turkana National Parks. The NEMA and NMK representatives who participated in this survey were concerned about the likelihood of Kenya losing tourists to other WH sites that are better managed and conserved than Lake Turkana. Effective management and conservation of the Lake Turkana National Parks, according to NEMA, was very vital to sustainable tourism not only in Turkana region but nationally. Socio-economic growth of the host communities significantly depended on the WH sites of Lake Turkana and this study found out that a significant number of youth from the riparian communities had been involved in the provisions water transport and entertainment services to the tourists. Tourism and world heritage also contributed to improvement and protection of the societal identity of the host communities,

[69] WTO. Tourism at World Heritage Sites – *Challenges and Opportunities: International Tourism Seminar, Turkey 26 March, 2013, UNWTO, Madrid. (2015).*

hence promoted the exchange of cross-culture among the tourists and the local community.[70] Whereas other world heritage sites continue to attract visitors, Kenya could lose all the opportunities associated with Lake Turkana National Parks as a WH site, following the red listing by the UNESCO World Heritage Committee. It is therefore imperative that Kenya and Ethiopia undertake urgent remedial measures to address the negative ecological impacts caused by the damming of River Omo and the impoundment of its water for irrigation in Ethiopia.

3.5 Proposed Ways for addressing the Adverse Impacts

Kenya and Ethiopia need to undertake a joint urgent Strategic Environmental Assessment (SEA) of the upstream projects and design mitigations measures. Since Environmental Impacts Assessments (EIAs) were never conducted prior to commencement of the projects, a SEA is recommended because it can be applied at all steps and levels of decision-making. This will enable Kenya and Ethiopia to assess the current environmental effects and develop mitigation measures and integrate findings into the process of policy development.

UNESCO WHC has already initiated a process of dialogue between Kenya and Ethiopia about the use of River Omo and impacts on Lake Turkana. However, Kenya and Ethiopia needed to fast track the process by a genuine show of commitment to supporting the Joint Experts Panel (JTEP) that comprises experts from Kenya and Ethiopia.

Kenya needs to undertake more research on the entire Lake to evaluate the effects of reduced inflow on the water quality and its impacts on the aquatic biodiversity.

[70] World Tourism Organization (2015), Tourism at World Heritage Sites – Challenges and Opportunities, International Tourism Seminar, Turkey 26 March, 2013, UNWTO, Madrid. (2015).

3.6 Conclusion

The damming of River Omo for generation of hydro-electric power and abstraction of its waters for irrigation has had adverse social, economic and environmental impacts. The ecological effects include severe drop in water levels in critical habitats such as Ferguson Gulf. The enlargement of the delta into Kenya has been exacerbated by the massive upstream abstraction of water from the river.

The decline in water level has also affected fish production, which plummeted to nearly 4,300 MT in 2016 up from 10,000 MT in 2015.The drop in fish catches negatively impacted on fish trade and income to fish dealers. The adverse effects on income directly led to food insecurity among the fisher folk who depended on fishing to get cash for buying other key food items like maize and grains.

Noteworthy impact is the loss of Outstanding Universal Value (OUV) status of Lake Turkana due to the negative ecological effects on the Lake and its ecosystem. The implications of red listing include economic loss to the tourism industry and loss of livelihoods to the local community. Internationally, it gives Kenya a bad image for failing to institute good environmental governance.

CHAPTER FOUR

COMPLIANCE WITH THE INTERNATIONAL LAWS IN THE USE OF RIVER OMO

4.1 Introduction

Utilization of River Omo by Ethiopia and Kenya and the relevant international conventions on shared water resources are discussed herein. The chapter highlights the relevant international treaties that guide use of shared natural resources and evaluates compliance to these conventions by Ethiopia and Kenya. It also discusses efforts to address the negative ecological impacts arising from unsustainable use of River Omo. Finally, the chapter proffers recommendations for sustainable use of River Omo and provides conclusion.

4.2 The Existing International Laws and Conventions

The international laws and conventions on shared natural resources provide regulatory frameworks for cooperation and coordination of riparian states in the utilization of the transboundary resources fo mutual benefits of the riparian countries.[71] The relevant treaties include the UN Watercourses Convention, the 1991 Espoo Convention and the UN treaty on the Protection and Use of Transboundary Watercourses and International Lakes.

4.2.1 The Watercourses Convention (UNWCC)

The United Nations General Assembly (UNGA) approved the UN Watercourses Convention (UNWCC) in 1997. It is a principal international legal framework that sets guidelines and principles for collaboration among watercourse nations on judicious use and conservation of watercourses. It also provides policy guidelines which watercourse States can adopt and

[71] Brels, S. *et al*. Transboundary water resources management: the role of international watercourse agreements in implementation of the CBD. (2008). CBD Technical Series no. 40. Secretariat of the Convention on Biological Diversity, Montreal, Canada.

implement for prudent exploitation of transboundary water resources.[72] The UNWCC outlines commitments of riparian countries in the exploitation of transboundary resources.

A country becomes a contracting party to a treaty or a convention by signing, approving and consenting to the convention or treaty. A treaty is a written international agreement signed between countries and administered by international law.[73] Two countries may sign a bilateral treaty on various aspects of their national interests or many nations may sign a multilateral treaty for furtherance of their national interests. A State gives approval to be bound by a treaty when its representative appends signature, exchanges instruments of the accord and ratification where the negotiating countries agree that ratification is needed.[74] The most suitable and applicable treaty for management and use of shared water resources including River Omo, is the UNWCC. This convention strengthens other conventions on environment and promotes global goals including the sustainable Development Goals (SDGs).[75]

Despite having been approved by over 100 countries in 1997, Kenya and Ethiopia have neither signed nor ratified the UNWCC as at June 2020. This has raised the questions of whether Ethiopia and Kenya are bound by the UNWCC in the use of River Omo. Information obtained from the Ministries of Water, Sanitation and Irrigation and Foreign Affairs, NEMA and National Museums of Kenya, indicated that Ethiopia did not comply with the provisions of the UNWCC in the use of River Omo. Kenya and Ethiopia require an accord for cooperation in sustainable utilization of River Omo and Lake Turkana watershed. However, the reluctance by Ethiopia and Kenya to ratify the UNWCC is a setback to trans-frontier resource use and management between

[72] The UN Watercourses Convention 1997
[73] The Vienna Convention of 1969 on the Laws of Treaties
[74] Vienna Convention on the Law of Treaties signed at Vienna 23 May 1969
[75] WWF. The Status of the World's International Watercourses and their Governance. (2009).

the two countries. The Ethiopia and Kenya still have the option of signing a bilateral agreement on development, exploitation and conservation River Omo, Lake Turkana watershed and other shared natural resources.

4.2.2 The 1991 Espoo Convention

The convention was developed by UN Economic Commission and approved in 1991 in Espoo city, Finland. Several protocols on this convention have been signed including the rules on Strategic Environmental Assessment (SEA) which was approved in 2003.[76] The Espoo Convention aims at curbing, alleviating and regulating negative trans-frontier ecological impacts of projects in riparian countries. It requires that watercourse countries conduct joint assessments of potential adverse ecological impacts of projects prior to their commencements. The treaty demands that riparian countries share EIA reports and allow for public participation especially those affected by the project.[77] Implementation of this convention has faced challenges especially on ensuring public participation in a cross-border context and the feasibilities of implementing this convention.[78]

In the planning and implementation of Gibe III Dam and the KSDP, both of which involve massive use of River Omo, the Ethiopian government did not involve Kenya at all stages of development of these projects as recommended by the convention. Information provided by the key informants of the Ministry of Foreign Affairs, Water and Sanitation Ministry, NEMA and other government agencies, revealed that Ethiopia used its sovereign and territorial right to utilize River Omo as one of its resources hence did not see the need of involving nor sharing

[76] Wiek S. & Bonvoisin N. Transboundary impact assessment: frameworks, experiences and challenges, Impact Assessment and Project Appraisal. (2008). 26:4, (2008234-238, DOI: 10.3152/146155108X366004
[77] The 1991 Espoo Convention
[78] Wiek S. & Bonvoisin N. Transboundary impact assessment: frameworks, experiences and challenges, Impact Assessment and Project Appraisal. (2008). 26:4, (2008234-238, DOI: 10.3152/146155108X366004

information with Kenya on the two projects, notwithstanding their imminent cross-border effects. The two countries did not undertake a joint assessment of potential adverse ecological impacts nor developed measures to alleviate the negative impacts. Furthermore, Ethiopia and Kenya were yet to sign and ratify the Espoo Convention as at May 2020.

Despite River Omo being a shared resource, Ethiopia and Kenya have not established a Joint Cross-Border Utilization, Management and Conservation Plan. The findings of this study showed that Ethiopia has been reluctant to Kenya's proposal on formation of a joint management and conservation plan. Kenya was not formally brought on board in the building of Gibe III Hydroelectric project. On a separate but related matter, Ethiopia and Kenya entered into a bilateral agreement on export of electricity power to Kenya through a transmission line which is expected to run from Ethiopia to Kenya, and to Tanzania through Isinya, This study revealed that the electricity export project was the only venture in which Ethiopia and Kenya were undertaking a joint ecological impacts assessment of the electricity wayleave.

4.2.3 UN Water Convention

The treaty aims to protect and promote prudent use of transboundary rivers and lakes. It became effective in 1996 after its adoption in 1992. Parties to this treaty are expected to prevent, regulate and alleviate trans-frontier impacts and to promote equity in access to transboundary water resources.[79] Countries within the watershed of the transboundary water resource are also required to collaborate in signing agreements and forming joint management and utilization plans for the shared water resources.

Ethiopia and Kenya had neither signed nor ratified the UN Water Convention as at the time of

[79] UNECE. Water Convention

this survey.[80] However, under customary International Law, countries are required not to cause any ecological harm to riparian countries while utilizing a shared resource. This rule has been recognized by the ICJ as customary international law, hence it binds all countries and states can be held responsible for its breach[81].

4.3 Utilization of River Omo in Ethiopia and Kenya

River Omo is an important watercourse that accounts for nearly 90% of inflow to Lake Turkana. The river forms a delta as it enters the lake and thereby creating critical fish habitats. Three dams for generating electricity had been built by Ethiopia on River Omo. Gibe III is the third biggest hydro-electric power plant in the region and has a capacity of nearly 1870 MW.[82] Moreover, Ethiopia has earmarked constructions of two more dams on River Omo.

Figure 4.3.3: The Gibe III dam constructed on River Omo. *(Source: Avery, 2017*)

Moreover, the Ethiopian government had been implementing a massive irrigation project using uncontrolled flood irrigation method to irrigate 175,000 ha of Kuraz Sugar Development plantation using water released from the dam. The Sugar Plantation project was set to expand to

[80] UNECE Water Convention
[81] Nurhida Y. et al. The Influence of International Law upon ASEAN Approaches in Addressing Transboundary Haze Pollution in Southeast Asia (2015)
[82] Avery, S. T. Fears over Ethiopian dam's costly impact on environment, people. (2017).

300,000 ha.[83] The uncontrolled flooding irrigation is an unsustainable use of water given that water from River Omo is permanently taken away and much of the abstracted water evaporates due to the prevailing hot and dry climatic conditions experienced in the region.

4.4 Compliance with International Laws and Conventions on Use of River Omo

All the Key Informants expressed their disappointments with the absolute noncompliance with the relevant international laws in the use of River Omo by the Ethiopian government. The Gibe III dam project began without an EIA report as required by the Espoo Convention. Ethiopia violated the relevant international conventions on shared resources and its national environmental law. Ethiopian EIA report on the Gibe III project was only approved two years into the project. Moreover, the EIA report was short of scientific study and analysis.[84]

This study further established that Ethiopia and Kenya were not Parties to the three relevant UN water conventions that guide watercourse states in utilization and management of shared resources. The two countries had neither signed and nor ratified the Water Conventions as at May 2020. In the use of River Omo, Ethiopia violated the UNWCC, the 1991 Espoo Convention and the Water Convention when it built the dam on River Omo. Several international environmental organizations such as UNEP and International Rivers, raised concerns about the projected negative ecological impacts of the dam given that an EIA was not undertaken prior to the implementing the project. Despite Ethiopia's sovereignty and territorial rights, it needed to cooperate with Kenya in the utilization and management of River Omo in the spirit of neighborliness and regional cooperation. Riparian countries need to uphold cooperation and

[83] Benedikt Kamski The Kuraz Sugar Development Project (KSDP) in Ethiopia: between 'sweet visions' and mounting challenges (2016), Journal of Eastern African Studies, 10:3, 568-580, DOI: 10.1080/17531055.2016.1267602

[84] Alison, M. J. Ethiopia's Dam Showing Hunger and Conflict, *International Rivers* (2011)

prudent use of shared resources. Lack of a supervisory international authority to enforce the international laws was noted as a challenge in observance of the international laws and related conventions.

Majority of the key informants esteemed the relevant water conventions. However, some respondents noted that international laws and conventions were not legally binding and that was a weakness. A country may use its sovereignty and territorial powers to exploit a transboundary resource without involving other watercourse states.

The survey revealed that formal communication between Ethiopia and Kenya concerning the use of River Omo did not take place. Ministry of Water, Sanitation and Irrigation only came to learn about the construction of Gibe III when 'Friends of Lake Turkana', an NGO, led the Turkana community in a demonstration against the building of Gibe III dam. The NGO petitioned the Parliament to intervene and stop the construction until a joint ecological assessment was done. In response to the public protests, the Government of Kenya constituted a team comprising of fourteen government officials. The team travelled to Ethiopia on a fact finding mission. The Kenyan delegation visited the Gibe III construction site and thereafter recommended for an establishment of a technical working Committee. The purpose of the committee was to address the concerns that had been raised by the stakeholders in Kenya. The committee was to be made up of representatives of Ethiopia and Kenya. As at the time of conducting this survey, a Joint Committee of Expert (JTEP) had been formed but no tangible progress had been made.

The results of this survey further corroborated the concerns of the community that a joint EIA was not done before commencement of project. The Ministry of Water, Sanitation and Irrigation expressed their apprehensions about the future of Lake Turkana following the unsustainable use

of River Omo in Ethiopia. The situation was exacerbated by the fact that the river which accounts for over 90% of the lake's inflow had been subjected to a massive permanent extraction for flood irrigation under the KSDP.

4.5 Efforts to Resolve the Adverse Environmental Consequences of the Gibe III Dam

The Foreign Affairs Ministry is the custodian of all treaties signed by Kenya on various national interests such as sustainable utilization of watercourses and other shared resources. The Ministry has been coordinating a national inter-agency committee that was established in 2018 to address the challenges facing Lake Turkana. The Ministry has been participating in the Joint Ethiopia-Kenya Technical Expert Committee (JTEP).

The World Heritage Centre (WHC) formally expressed its concerns about the building of the Gibe III by sending an official note to Ethiopia in 2010. The WHC's concerns were about the predicted impacts the projects on the outstanding universal value of Lake Turkana National parks. This study revealed that Ethiopia responded to the concerns by WHC but did not provide any EIA report on the dam.[85] The WHC then urged Ethiopia and Kenya to invite a WHC-IUCN joint assessment mission to evaluate the effects of Gibe III dam. However, only Kenya responded to WHC's request and invited a joint WHC-IUCN mission to Kenya in March 2012. The joint mission visited Lake Turkana and concluded that the dam and the associated projects on River Omo were very much likely to affect the Outstanding Universal Value of Lake Turkana. Consequently, the mission considered red listing of Lake Turkana National Parks.[86]

The intervention of the UNESCO WHC in the conflicts in 2011 was triggered by the findings of a study conducted by the African Development Bank on the potential negative impact of the dam

[85] WHC. WHC and IUCN Mission Report on Lake Turkana. (2012)
[86] Ibid

on River Omo and on Lake Turkana. The UNESCO WHC decision 35 COM &B.3 called all multilateral development agencies to the Gibe III project to halt all funding until the issues raised from the study were reviewed. UNESCO WHC then recommended that Ethiopia and Kenya needed to undertake a joint Strategic Environment Assessment (SEA) to determine the sum effects of developments projects in Ethiopia on Lake Turkana and to proffer corrective measures. However, in 2013, UNESCO WHC in its decision 37 COM 7B.4 noted that Ethiopia had not yet invited the joint WHC-IUCN monitoring mission.

The survey further discovered that, UNESCO WHC welcomed bilateral discussions between Ethiopia and Kenya In 2014. The UNESCO WHC also noted that Ethiopia had initiated large scale irrigation projects besides filling the dam prior to undertaking a joint Strategic Environment Assessment. In 2015, the UNESCO WHC welcomed the plans by Kenya and Ethiopia to establish Joint Expert Panel (JTEP) to monitor natural resource management within the Lake Turkana basin. It was further recommended that a Joint Ministerial Commission to spearhead monitoring of resource use and management in Lake Turkana basin. The UNESCO urged Ethiopia to undertake Environmental Impacts Assessment (EIA) on the Kuraz Sugar Scheme and submit its reports as part of SEA. However in 2016, UNESCO WHC noted in decision 39 COM 7B.80 that both Ethiopia and Kenya had not provided any response. The committee then urged both countries to do an international bidding for SEA and scoping study. The two countries did not agree on how the advert would be funded. Kenya preferred UNEP funding while Ethiopia preferred state funding. According to the Kenyan team, this was a delaying tactic by Ethiopia to evade the decision by UNESCO WHC for both countries to conduct a joint SEA. This could explain why as at the time of this survey in February, 2020, the SEA had not been conducted and the Ethiopian Embassy in Nairobi declined to participate in this

survey.

4.6 Proposed Ways for Utilization and Conservation of River Omo.

Ethiopia and Kenya need to institute a bilateral arrangement that will ensure long term utilization and conservation of the River Omo. The two countries further needed to establish a joint technical team comprising of all relevant sectors to monitor sustainable use of resources within Lake Turkana Basin. In the event that one party fails to collaborate, the heads of state summit should provide leadership on the matter of River Omo and its uses in both countries. The current inter-ministerial committee on the Omo delta under the auspices of Ministry of Interior lacks the mandate to authoritatively address the conflicts since Ethiopia is not participating.

4.7 Conclusion

River Omo is an important transboundary water resource to Kenya and Ethiopia. Ethiopia depends on the river for production of hydro-electric power (HEP) for her energy needs. Ethiopia has already put up three HEP plants, the Gilgel Gibe I (184 MW), Gilgel Gibe (420 MW) and Gibe III (1,870 MW), and was planning for two more dams on the same river. The water released form Gibe III dam is also used to irrigate 175,000 – 300,000 ha of the Kuraz Sugar Plantation project. The lower Omo pastoral and farming communities totally depend on the river.

In Kenya, River Omo is a vital inflow to Lake Turkana injecting over 90% of freshwater. The lake is also a World Heritage site and an important tourists' attraction in the region. It supports both commercial and artisanal fisheries and Turkana pastoral communities. The Lake supports the national parks namely, Central Island, Southern Island and Sibiloi. It also serves as a critical stop-off for migratory fowls. The El-Molo fishing community at Loiyangalani in Marsabit County wholly depends on the lake as the sole source of food and nutrition security.

Ethiopia did not undertake a joint environmental impacts Assessment prior to commencement of the upstream Projecst as provided for by the 1991 Espoo Convention. Additionally, Ethiopia did not involve Kenya as a watercourse state in the utilization of River Omo as guided by the United Nations Watercourses Convention. Kenya and Ethiopia have not designed a joint utilization, management and conservation plan for River Omo and Lake Turkana Basin.

CHAPTER FIVE

SUMMARY, RECOMMENDATIONS AND CONCLUSION

5.1 Summary

Diminishing water resources, unsustainable anthropogenic activities and weak natural resource management systems are the key determinants of conflicts in River Omo Delta. Ethiopia did not comply with the international laws in the preparation and implementation of Gibe III dam and the irrigation projects. Consequently, the River Omo dependent projects have caused serious adverse socio-economic and ecological impacts on Lake Turkana and riparian communities. There is an urgent need for Ethiopia and Kenya to undertake a joint Strategic Environmental Assessment (SEA). A SEA would allow for a participatory evaluation of probable socio-economic and ecological effects of the projects and design measures for mitigating the negative effects.

5.2 Recommendations

The following possible solutions to the conflicts are proffered:

5.2.1 Conflicts Management.

In order to address the persistent resource related conflicts in River Omo delta, there is need to develop Todonyang border area of Turkana County. The National Government and Turkana County Government need to develop robust cross-border peace initiatives enhance border security and train the local community and stakeholders on conflicts resolutions.

The Omo delta lags behind in terms of socio-economic development. As such, both the National and County governments need to provide basic services such as potable water supply and develop essential infrastructures including access roads, modern communication facilities,

markets, fish preservation and processing facilities, build and equip learning facilities. Currently, the Turkana community who reside at Todonyang depends on markets in Ethiopia. The local community reported that on several occasions, the Daasanach attacked and killed Turkana men and women while using market facilities across the border in Ethiopia.

There is need to establish strong early warning system (EWS) to monitor conflicts and ensure sustainable peace through regular cross-border information sharing. Commitment of Ethiopian authorities is vital for sustainable peace to be realized in this region. Building capacity of the border communities and sensitization on sustainable utilization, management and conservation of shared resources and observance respective national laws governing utilization of natural resources are recommended. Kenya and Ethiopia need to repair and/or install the damaged the border beacons. This would control cross-border grazing and clashing of Turkana and Daasanach herders. It was observed during the survey that most of the border beacons had been demolished. Violent clashes between Turkana and Daasanach herders had been experienced whenever Daasanach herders cross with their livestock into Kenya. The two countries need to initiate and support cross-border peace programs.

5.3.2 Mitigation of Adverse Social, Economic and Environmental Impacts.

This requires urgent response by Kenya and Ethiopia, International Non-Governmental Organizations (INGOs) and civil societies. Kenya and Ethiopia need to undertake a joint Strategic Environmental Assessment (SEA) of the Gibe III and KSDP ventures so as to design mitigations measures. The SEA is crucial because Environmental Impacts Assessments (EIAs) were never conducted prior to commencement of both projects. A SEA has been recommended because it can be applied at all steps and levels of decision-making. This will enable Kenya and Ethiopia to assess the current environmental effects and develop mitigation measures and

integrate findings into the process of policy development. UNESCO WHC had already initiated a process of dialogue between Kenya and Ethiopia and had facilitated the formation of a Joint Experts Panel (JTEP) that comprised of experts from Kenya and Ethiopia. Kenya and Ethiopia need to fast track the process by a genuine show of commitment.

5.3.3 Utilization and Management of Transboundary Natural Resources

River Omo is an important shared water resource between Kenya and Ethiopia. Currently Ethiopia is using the river in disregard of the internationally set standards. Kenya should purposely initiate a bilateral process that should ultimately lead to an endorsement of a bilateral accord for an inclusive utilization, management and conservation of River Omo and Lake Turkana basins. While the JTEP had been established, it is imperative for Kenya and Ethiopia to form a Lake Turkana and Omo Basin Commission. Lake Turkana-Omo Basin Commission is recommended because obligations of such a commission would include joint planning, coordinated development, management of all basin resources, promotion of upstream conservation of water and soil resources, joint research and information sharing and mobilization of regional and international financial resources needed to implement cooperative programs.

5.3.4 Strengthening Capacity for Bilateral and Multilateral Negotiations

The government Ministries, Departments and Agencies (MDAs) involved in negotiations of deals on behalf of the Nation, need to internally discuss, consult widely and develop a common position before endorsing any agreement on trade and utilization of shared resources. In a case where a government official has been given the instrument of full power to sign any agreement on behalf of Kenya, internal consultations needs to be done prior to endorsement of any agreement. This recommendation aims to address disjointed deals like the case in which the Ministry of Energy signed the Power import deal in 2006 with Ethiopian Electricity Company

without consultations with the Ministry of Water and Irrigation and Foreign Affairs. This contract has been used by Ethiopia to imply that Kenya was adequately consulted in the construction of Gibe III. As such, Kenya needs to strengthen her bilateral negotiation skills for signing favourable bilateral agreements that promotes her national interests.

5.3.5 Principle of Reciprocity

In case Ethiopia completely decline to discuss the matter of sustainable use and management of River Omo, Kenya can still apply soft power to pressurize Ethiopia to come to a negotiation table. One way through which Kenya can use soft power in application of principle of reciprocity is to renege on the deal to provide electricity wayleave to Ethiopia. Ethiopia plans to export power to through Kenya to Southern Africa. The other options available for Kenya are to seek intervention of IGAD and African Union (AU). Furthermore, Kenya can file a petition at the International Court of Justice. This recommendation is vital because the probability of Lake Turkana drying or splitting into two smaller lakes, as discussed elsewhere in this report, is high. Lake Chad which had faced similar threats but the riparian countries did not take concrete actions is currently facing imminent extinction.[87] The likelihoods of Lake Turkana shrinking into two small lakes have been postulated by several scientists[88], hence the need for Kenya to take a drastic measure to arrest the situation.

5.2 Conclusion

The communities living in River Omo delta have been experiencing resource based conflicts ever since water resources started to decline. Lake Turkana has been shrinking due to unsustainable utilization of River Omo. As the water levels decline, the delta has been expanding

[87] François Misser. Kinshasa Vetoes Water Transfer Project to Replenish Lake Chad. *South world publication in June 2018*.

[88] Avery, S. T. The Impact of Hydropower and Irrigation Development on the world's largest desert lake. (2013).

past the international border into Kenya. The Daasanach community has occupied the wetland formed by the retreating lake and has displaced the Turkana fishermen from the fishing grounds. The Turkana community has resisted the attempts by the Daasanach to displace them from the delta. Violent conflicts between the two communities have led to loss of lives from both communities. Diminishing water resources, unsustainable anthropogenic activities and weak natural resource management systems are the key determinants of conflicts in the Omo Delta.

The damming of River Omo for generation of hydro-electric power and the massive irrigation has had negative social, economic and ecological impacts. The ecological effects include severe drop in water levels in the critical fish habitats, the national parks and the Ferguson Gulf. The enlargement of the delta into Kenya has been exacerbated by the massive upstream abstraction of water from the river. The decline in water level has also impacted on fish production, which plummeted to nearly 4,300 Mt in 2016 from 10,000 Mt in 2015.The drop in fish catches had significant economic impacts on fish trade and income to fish dealers who solely depend on the fish business. The negative effects on income directly led to food insecurity, since most fishermen depend on fishing to buy other key food items like maize and grains.

Remarkable impact is the red listing of the National Parks of Lake Turkana. The WHC inscribed the Lake Turkana National Parks as a WH site with the matching exceptional value (OUV) status in 1997. However, due to the negative ecological impacts on the Lake and its ecosystem, WHC red listed Lake Turkana in June 2018. The implications of red listing include economic loss to the tourism industry and loss of livelihoods to the local community. Internationally, it gives Kenya a bad image in failing to institute good environmental governance. River Omo is an important transboundary water resource to Kenya and Ethiopia. Ethiopia depends on the river for generation of hydro-electric power (HEP) for her energy needs. Ethiopia has already put up three

HEP plants, the 184 MW Gilgel Gibe I, 420 MW Gilgel Gibe and the 1,870 MW Gibe III and is planning for two more dams on the same river. The water released form Gibe III dam is also used to irrigate 175,000 – 300,000 ha of the KSDP. The pastoral and farming communities residing at the downstream Omo totally depend on the river.

In Kenya, River Omo is a vital inflow to Lake Turkana supplying over 90% of freshwater. The lake is also a World Heritage site and an important tourists' attraction in the region. It supports both commercial and artisanal fisheries and Turkana pastoral communities. The Lake support Central Island, Southern Island and Sibiloi National Parks, and also serves as a critical stopover for migratory birds. Turkana County tourism circuit depends of the lake and the national parks as the regional tourists' attraction sites. The El-Molo fishing community at Loiyangalani in Marsabit County wholly depends on the lake for fundamental necessities of life.

Ethiopia did not undertake a joint environmental impacts Assessment prior to commencement of Gibe III and the KSDP projects, an action that violated the Espoo convention. Moreover, Ethiopia did not share information with Kenya on the use of River Omo as per the guidelines of the UN Water Convention and both countries have not designed a joint utilization, management and conservation plan for River Omo and Lake Turkana Basin.

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APPENDICES

Appendix I: **Survey Form**

SECTION A

Questions for Focus Group Discussion

1. Now, I want you to share your experiences about life in the River Omo delta?

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2. What kind of Conflicts have you ever experienced in the River Omo?

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3. What do you think are the causes of the conflicts?

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4. How long has the conflicts persisted?

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5. How has the conflict affected you?

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6. Have there been attempts to resolve the conflicts?

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7. If you were to recommend ways of resolving the conflicts, what would you recommend?

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SECTION B

Key Informants Interview

1. Please tell me about the River Omo and its uses both in Ethiopia and Kenya?

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2. What are your views on Gibe III Hydroelectric Project on the River Omo?

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3. How did Kenya participate in the Gibe III Dam Project?

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4. Did Ethiopia and Kenya comply with the international laws in use of the River Omo?

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5. What are the social, economic and Ecological impacts of damming River Omo?

Social……

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Economic……

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Ecological……

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6. Kindly give recommendations for sustainable utilization and management of transboundary resources?

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SECTION C

Compliance with International Laws on Use of Transboundary Water Resources

Key Informants Interview

1. The River Omo is a transboundary water resource shared Kenya and Ethiopia. Besides, River Omo accounts for 90% of inflow to Lake Turkana. How do the two countries utilize and manage River Omo?

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2. Ethiopia has constructed three dams including Gibe III dam on River Omo. Did Ethiopia undertake a Joint Environmental Impacts Assessment (EIA) prior to commencement of the Gibe III dam?

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3. What are the environmental impacts of Gibe III dam on Lake Turkana

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4. In your opinion, do you think Ethiopia complied with the relevant international Environmental laws in the constructions of the Gibe III dam?

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5. Kindly what do you recommend for sustainable utilization, management and conservation of River Omo and Lake Turkana?

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Key Informants Interview – (MFA and Ministry of Water, Sanitation and Irrigation)

1. Kindly list the **key roles of Ministry of Foreign Affairs** in sustainable Management of Shared natural resources?

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2. River Omo, which is a shared resource between Kenya and Ethiopia, is the main inflow to Lake Turkana, accounting for over 90% of the fresh water inflow. Please could you tell me the conflicts that have arisen from the use of the river by the Ethiopian Government?

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3. The Gibe III Hydroelectric Project is one of Ethiopia's major dam constructed on the River Omo. Are there any social, economic and ecological impacts of the Gibe III Dam on river Omo and the water level in Lake Turkana?

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4. The following are conventions that guide countries that have shared resources across their international boundaries:
   a) United Nations Convention on the Protection and Use of Transboundary Watercourses and International Lakes (The Water Convention)
   b) 1991 Espoo Convention (Convention on Environmental Impact Assessment in Transboundary Context Project).
   c) United Nations Watercourses Convention

   Does Ethiopia observe these conventions in the Use of River Omo?

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5. The River Omo is a transboundary water resource and the main recharge to Lake Turkana. Does Kenya and Ethiopia have a joint management and conservation plan for River Omo, Lake Turkana and its basin? **If Yes, Which one? If No, Why?**

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6. If you were to advise on sustainable utilization and management of River Omo as a transboundary resource, what would you advise?

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Key Informants Interview – Ethiopian Embassy

1. The Omo River is a shared water resource between Kenya Ethiopia and Kenya and accounts for 90% of Lake Turkana's inflow. Please tell me about the uses Omo River in Ethiopia and Kenya?

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2. Please could you tell me about conflicts arising from the use of Omo River:
    a) Between Ethiopia and Kenya

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    b) Between the Daasanach and Turkana Communities

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3. The Gibe III Hydroelectric Project is one of Ethiopia's major dam constructed on the Omo River. Since the river is a shared water resource, how did Ethiopia involve Kenya in the Gibe III Hydroelectric Project?

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4. The Kuraz Sugar Development Project (KSDP) is one of Ethiopia's large scale irrigation scheme in the lower catchment of the Omo River that is also dependent on the waters of Omo River for its flood irrigation. What are the impacts of the irrigation on the volume of water flowing downstream into Lake Turkana?

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5. Did Ethiopia and Kenya conduct a joint Environmental and Social Impacts Assessment (ESIA) of the Gibe III Hydroelectric Project and the KSDP before their commencement? If No, Why?

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6. In early 1970s, some part of Lake Turkana and the Omo Delta were found within Ethiopia's boundary. Currently the Entire Lake is in Kenya and the delta has expanded several kilometers into Kenya. What has caused the expansion of the delta and retreating of the lake?

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7. The following are international laws that guide countries (Watercourse States) that have shared resources across their international boundaries:
   d) United Nations Convention on the Protection and Use of Transboundary Watercourses and International Lakes (The Water Convention)
   e) 1991 Espoo Convention (Convention on Environmental Impact Assessment in Transboundary Context Project).
   f) United Nations Watercourses Convention

   What are your views on compliance with these conventions concerning the use of River Omo by the Ethiopian Government?

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8. The Omo River is a transboundary water resource and the main inflow to Lake Turkana. Does Kenya and Ethiopia have a joint management and conservation plan for Omo River, Lake Turkana and its basin? If Yes, which one; If No, why?

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9. Please advise on the best approach to sustainable utilization and management of River Omo as a transboundary resource?

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THANK YOU VERY MUCH!