

KARADENİZ TECHNICAL UNIVERSITY * INSTITUTE OF SOCIAL SCIENCES

DEPARTMENT OF INTERNATIONAL RELATIONS

PhD IN INTERNATIONAL RELATIONS

**HYDROPOLITICS OF RIVER NILE: REGIONAL AND
INTERNATIONAL IMPLICATIONS**

PhD DISSERTATION

Mohammed HASHIRU

MAY-2022

TRABZON

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APPROVAL

Upon the submission of the dissertation, **Mohammed HASHIRU** has defended the study "**Hydropolitics of River Nile: Regional and International Implications**" in partial fulfilment of the requirements for the degree of Doctorate of International Relations at Karadeniz Technical University, and the study has been found fully adequate in scope and quality as a thesis by **unanimous/ majority** vote on **12.05.2022**.

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ACKNOWLEDGMENTS

The Nile politics has for a long period of time been one of International Relations' nexus with both regional and international ramifications since the era of colonization. The colonial legacies of the Nile region, coupled with other regional and international factors, have contributed to the continual instability threats and failed consensus on water sharing that could haunt the fragile democracy of the region. In this light, this dissertation looks into the politics of the Nile through the lens of its regional and international implications as it provides key researched information that could guide policy making in the region.

My very profound gratitude goes to my able and hardworking supervisor, Professor Özgür TÜFEKÇİ, who has encouraged the expansion and enriching of this work which began four years ago as a research paper. I can not forget the whole academic members of the International Relations Department who have shaped my thoughts and guided me with their valuable and in-depth knowledge of myriads of courses in International Relations and Politics. I'm also indebted to the competent jury whose guidance and counselling have helped to shape this research.

May, 2022

Mohammed HASHIRU

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ÖZET

Bu tezin temel amacı Mısır, sınıf ve Sudan Nil üzerindeki hidropolitikleri araştırmayı araştırmaktır. Bu tez, Nil boyunca oluşumu ve trend olan siyasi olayları takip etmektedir. Genel olarak hidropolitika ve özel olarak Nil'in hidropolitikası ile ilgili çalışmalar ve literatürü bir araya getirir. Hidrohegemonya çerçevesinde Mısır, Nil Nehri üzerindeki tarihi ve sömürge haklarını korumaya kararlı olarak algılanır. Bunun nedeni, akışına önemsiz bir katkısı olmasına rağmen, Nil üzerindeki hegemonyasına her zaman yardım etmesidir. Bu tez, şiddetli bir çatışma olasılığını tahmin etmek için hidrohegemonya çerçevesinin ötesine geçer. Bu, çekişmenin başlangıcından son zamanlara kadar toplanan ve Nil bölgesindeki ana olaya damgasını vuran oldukça fazla çatışma ve anlaşmazlığı gösteren bir zaman çizelgesi verileriyle desteklenmektedir. Bölgesel olarak, bu tez Mısır, Etiyopya ve Sudan'ın Nil bölgesindeki politikalarına bakmaktadır. Uluslararası alanda ABD, İngiltere ve Çin'in bölgedeki politikalarına bakmaktadır.

Bu araştırma, Mısır'ın azalan gücünü ve Etiyopya'nın özellikle 2011'de Mısır'ın iç siyasetiyle mücadele etmeye başladığı ve Etiyopya'nın bölgedeki son çatışma merkezi olan iddialı Büyük Rönesans Barajı'nı inşa etmek için avantaj elde ettiği 2011 yılından bu yana gelişen gücünü vurgulamıştır. Aynı zamanda, elektrik arzına sahip olma umutları nedeniyle başlangıçta Etiyopya devletinin yanında yer alan, ancak daha sonra Mısır'ın yanında hızlı bir şekilde yeniden ayarlanan Sudan'ın sallanan pozisyonunu da ortaya çıkardı; geleneksel müttefiki. Yine bu araştırma, Çin'in son zamanlarda Nil bölgeleri gibi bölgelerde Afrika ekonomik ilişkilerindeki etkisini ortaya koymuştur. Bu eserden, Çin'in ekonomik politikalarının, Asvan Barajı gibi bir projenin inşasını içeren ABD-Komünist mücadelesinden daha etkili hale geldiği anlaşılmaktadır. Bu çalışma aynı zamanda Afrika Birliği'nin Afrika çatışmalarını çözmedeki zayıflığını da ortaya koymuştur. Bu çalışma, yalnızca konuyla ilgili araştırmacılara iyi bir okuma işlevi görmez, projeksiyonları Nil Havzası'nın politika yapıcılarına politika yapma konusunda yardımcı olabilir.

Anahtar Kelimeler: Mısır, Sudan, Etiyopya, Nil, Hidropolitika

ABSTRACT

This dissertation's main objective is to look into the hydropolitical contention among Egypt, Ethiopia and Sudan on the River Nile. This dissertation traces the genesis and the trending political occurrence along the Nile. It brings together related works and literature on the subject matter of hydropolitics in general and the hydropolitics of the Nile specifically. Though largely within the framework of hydrohegemony, with Egypt maintaining its historical and colonial rights on the Nile River that has always aided the hegemony it wields over the Nile despite its insignificant contribution to the flow of the Nile, this dissertation goes beyond the hydrohegemony framework to predict a possibility of a violent conflict. This is supported by a timeline data collected from the beginning of the contention till recent times, which has demonstrated quite a lot of conflict and disagreement that have marked the major occurrence in the Nile region. Regionally, this dissertation looks into the politics of Egypt, Ethiopia and Sudan in the Nile region. Internationally, it looks into the politics of the USA, Britain and China in the region.

This research has highlighted the waning power of Egypt and the developing power of Ethiopia, especially since 2011 when Egypt started to struggle with its internal politics whilst Ethiopia took the advantage to build its ambitious Great Renaissance Dam, which has been the recent centre of conflict in the region. It has also revealed the swinging position of Sudan, which had initially partially sided with the Ethiopian state for its prospects of having an electricity supply but later made a quick readjustment to side with Egypt, which has been its traditional ally. Again, this research has exposed the influence of China in recent times on African economic relations in regions like the Nile regions. It can be understood in this work that China's recent economic policies are becoming more influential than the USA – Communism struggle, which involved the building of projects like the Aswan High Dam. The reconciliation attempts made by the African Union and the USA, among others, make future cooperation doubtful. This work does not serve as a good read-only to researchers on the subject matter; its projections can also help policy makers of the Nile Basin in making policies.

Keywords: Egypt, Sudan, Ethiopia, Nile, Hydropolitics

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LIST OF ABBREVIATIONS

WP	: Water for Peace
WW	: Water for War
ENCOP	: Environment and Conflicts Project
SADC	: Southern African Development Community
WWDR	: The UN World Water Development Report
DoP	: Declaration of Principles
TRNC	: The Turkish Republic of Northern Cyprus
IR	: International Relations
FHH	: Framework of Hydro-Hegemony
AHD	: Aswan High Dam
WWAP	: World Water Assessment Programme
BBC	: British Broadcasting Cooperation
PCIJ	: Permanent Court of International Justice
UNECE	: United Nations Economic Commission for Europe
UNDP	: United Nations Development Programme
CFA	: Cooperative Framework Agreement
NBI	: Nile Basin Initiative
NISRG	: National Independent Scientific Research Group

USDT : United States Department of the Treasury

UN-ESCWA : United Nations Economic and Social Commission for Western Asia

EALA : East African Legislative Assembly

ADB : Asian Development Bank

IWMI : International Water Management Institute

JTC : Joint Technical Committee

GAP : The South-eastern Anatolia Project

SCCA : Strategic Cooperation Council Agreement

FOA : Food and Agriculture Organization

MWRI : Ministry of Water Resources and Irrigation

EAC : East African Community

GERD : Great Renaissance Dam

ELF : Eritrean Liberation Front

NWA : Nile Water Agreement

NIF : National Islamic Front

NCP : National Congress Party

SPLM : Sudan People's Liberation Movement

NDA : National Democratic Alliance

IMF : International Monetary Fund

TPLF : Tigrayan People's Liberation Front

AU	: African Union
IGAD	: Intergovernmental Authority on Development
OPDO	: Oromo People's Democratic Organization
EPRDF	: Ethiopian People's Revolutionary Democratic Front
USBR	: United States Bureau of Reclamation
UNSC	: United Nations Security Council
ADB	: African Development Bank
IBRD	: International Bank for Reconstruction and Development
EIA	: Energy Information Administration
DIU	: Dams Implementation Unit
ENTRO	: Eastern Nile Technical Regional Office
IPoE	: International Panel of Experts
GDP	: Gross Domestic Product
BCM	: Basin Characterization Model
NRBSAP	: Nile River Basin Strategic Action Program
Nile-COM	: The Nile Council of Ministers
Nile-TAC	: Nile Technical Advisory Committee
ENCOM	: Eastern Nile Council of Ministers
NELSAP	: Nile Equatorial Lakes Subsidiary Action Program
NELCOM	: The Nile Equatorial Lakes Council of Ministers

INTRODUCTION

It is often said that water is life. Geographically, water forms about 70% of the total earth surface. Scientists have also revealed that the body of an adult human consists of up to 60% of water. To express the importance of water, the Greek philosopher, Thales, once said that everything is water. Though Thales could not prove his claim with any philosophical instrument, he is understood to mean that water is a very basic need. Even religious instruments have emphasised water's essence and critical relevance to earth and life. The relevance of water goes beyond research, as every human need water to sustain life and avoid dehydration. Lack of water is considered an existential threat as life without it is impossible.

As a given significance, it remains an increasingly important emerging issue in twenty-first century international affairs and political discourse. This is because water resources are the crucial powerhouse in all economies. While river systems often serve as natural boundaries, rivers and lakes are often shared by distinct nations - the Nile, for instance, travels through almost a dozen nations. Considering how inclined mankind is to conflict, it's not astonishing that hydro-political spats have been springing up in many parts of the world. There will be no international tranquillity if accessibility to water becomes difficult. As a result, sustaining this super-duper water management equilibrium might be another of the great problems of the next several years. Water supplies are running out in the twenty-first century, climate change is rising sea levels and shifting boundaries, accelerating growth in population is putting pressure on global resources, and worldwide hyper-nationalism is putting political ties and diplomacy to the test. Nevertheless, between 2000 and 2050, demand for water is predicted to increase by 55%. It's been dubbed the next oil for the twenty-first century in because of its importance as a worldwide resource.

The main concern of the UN previously had been the security issues related to pollution, shortage or scarcity. As much as that aspect of security is paramount, the danger lurking in water-related wars is increasingly becoming alarming. In the same brief, water wars are alarming because water pollution and scarcity can be related to a larger extent, a conflict between nations within which such waters flow. Freshwater disputes have existed from ancient times as a result of a wide range of strained relations and/or hostility that have seldom assumed the form of conventional war fought only for water supplies. Freshwater, on the other hand, has long been a source of (re)tension as well as a role in wars that begin for other causes. Water was utilized as a weapon in several circumstances because of its capacity to cause serious harm to oppose communities and

troops via deprivation or degradation of water resources. Water tensions occur for a variety of causes, such as territory disputes, resource competition, and strategic benefit. The Tigris-Euphrates water conflict between Turkey, Syria and Iraq, the transboundary water disputes between Iran and Afghanistan, the Mekong River basin, as well as the Nile River conflicts are among the few water conflicts in the world today.

Water is an important and ultimately precious resource, and sharing it is hardly simple. Management of water resources has historically been a challenging task in the Nile's case. River Nile is one of Africa's most complicated transboundary river basins, with a population of roughly 430 million people scattered across 11 states which are Burundi, the Democratic Republic of Congo (DRC), Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, South Sudan, Tanzania, and Uganda). Unfortunately, there is currently no consensus on how its waters should be divided. Several agreements have been made, but just a few have proven to be useful tools for collaboration. Despite this, water politics in the Nile have been relatively low-key for a long time, with no big events altering the status quo. Increasing river strains, on the other hand, may be poised to alter that.

Nearly all of Egypt's water supply originates in other countries, but historically, Egypt has been able to maintain control of its water security. Ethiopia's Grand Ethiopian Renaissance Dam project, Egypt argues, threatens Egypt's current water supply. The dam will create a huge reservoir behind the largest dam on the African continent once the project is completed. Ethiopia, with the building of the dam, aims to support the development of the country's agriculture, as well as provide electricity to a large portion of Ethiopia's population for the first time. The dam is projected to produce over a triple amount of electricity supplied by the Hoover Dam yearly. However, it appears that whatever Ethiopia gains from the Nile, Egypt loses. Nearly all of Egypt's population lives along the Nile and is entirely dependent on it. This dependence has been the status quo for millennia. The rising tensions among Ethiopia, Egypt and Sudan coupled with the stakes which inform the possible magnitude of the conflict of other interested parties like Turkey, Saudi Arabia, and Qatar with broader regional geopolitics calls for investigations into the new phenomenon of hydropolitics of Nile in the wake of the Great Ethiopian Renaissance Dam (GERD).

This thesis's objective is to revisit the history of hydropolitics of the Nile, look at the Nile conflict and cooperation vis-à-vis several agreements, look into the pros and cons of the construction of the GERD, as well as the regional and international ramifications of the conflict. This thesis shall give answers to questions like; will the ceaseless rising tensions among Egypt, Sudan and Ethiopia vis-à-vis the waning Egyptian hegemony and the rising Ethiopian hegemony

could culminate in violent conflict? What are the consequences of the Ethiopian dam on the relationship of neighbouring/riparian states? Does the tension in the region have a spillover effect on the political relations of other concerned states? Is cooperation still viable in the wake of states' rejection of agreements?. And to facilitate a researched result, this study shall use a comparative and descriptive study approach of reviewing related literature on the subject matter. First will be an extensive investigation of archival and academic materials. The second will be an application of theoretical approaches to the Nile conflict. The last will be speculation and projection of possible future occurrences based on the trends of events since the subject matter is an ongoing phenomenon. A deliberate attempt to visit and review the works of writers like Cascao, Tedvt, Waterbury, Makonnen and Zeitoun and Warner, who have written extensively on the subject matter, shall be made. This study will also select its literature carefully as many writers have been subjective and partial in putting forward their arguments to either skew towards or sympathize with either Egypt or Ethiopia. Though largely qualitative, where necessary quantitative analysis will be resorted to. This includes statistical analysis of all the historical occurrences with their related dates and occasions that mark them. This will facilitate and support the projection of war tendencies when tensions and disagreements reign over the agreement and binding legal regime, as will be illustrated in bar and pie charts.

The first chapter will look into the concept of hydropolitics and its related literature. It will also delve into International Relations' theoretical framework that has theorized the current hydropolitical dispensation. The hydropolitical literature will be further divided into two broad kinds of literature of "water for war" (WW) and "water for peace" (WP). In this light, it shall be argued that both proponents of war and proponents of cooperation and peace along hydropolitics draw their arguments from related incidence and theoretical assumptions and projections. As the WW proponents identify connections between conflict and water, the WP proponents draw the relations between transboundary waterbodies and cooperation. It's worth noting that Homer-Dixon and others studied numerous shared river basins and came to a conclusion that "river water is the renewable resource most likely to trigger interstate resource conflict" (Homer-Dixon, 1994: 19). These projections are based on the Malthusian paradigm, which stresses the deterministic link between physical water shortage, population growth, climate change, and new threats in explaining why water wars are inescapable.

On the other hand, the WP proponents believe that while transboundary water resources have clearly improved interstate interactions, such contacts have resulted in far more consensus than conflict, according to this group. While expansion, scarcity, and competing pressures have all the potential to produce conflict, the desire to collaborate and engage in water discussion has

always triumphed. As a limitation to the literature on hydropolitics, Arsel and Spoor think that both WW and WP theses are deterministic methods with their own set of constraints (Zeitoun & Warner, 2006). It will also be discussed in this chapter a few IR theoretical frameworks from which the framework of Hydrohegemony (FHH) (Zeitoun & Warner, 2006) is selected to describe the hegemonic position of Egypt in the Nile Basin. Power, water control and hegemony shall be discussed through the lens of FHH.

The second chapter shall connect with the first in discussing the main issue of hydropolitics in general and the legal instrument vis a vis the United Nations Convention on water courses. This chapter will bring together several transboundary phenomena in the Asian, African continent and Middle Eastern regions. It will then zero the hydropolitics discourse to the main thesis topic, which is the Nile nexus. In this subsection, the Nile is discussed, bringing together the Eastern Nile and the Great Equatorial Lakes. Then, the three main states under discussion, which are the Egyptian, Sudanese and Ethiopian states, will be discussed in the light of their relationship with the Nile, where it shall be revealed that while the Ethiopian state contributes nothing to the discharge of the Nile receives and benefits much more than Ethiopia that bestows the Blue Nile source. This discussion will further go through the relationship with the nations under discussion, where the historical tense relations between Ethiopia and Egypt, which have a bearing on their recent rhetoric regarding the great renaissance dam GERD, will be brought to light. This will include the swinging relations between Egypt and Sudan as well as Ethiopia and Sudan. This study further looks into the waning power of Egypt as a regional power and the rising power of Ethiopia in the region, and why it has been a tussle between the two most notable states in the horn of Africa in recent times. Notwithstanding that, the study further looks into the internal struggle of the Egyptian state, which includes the decade-ago uprising and how it paved the way for the commencement of the GERD at the blindside of Egypt, the struggle of the Ethiopian state that is gradually affecting its Nile confrontations, and the cessation of the South Sudanese and the ousting the de facto Sudanese president, Omar Al Bashir which has changed the Sudanese Nile politics, from siding with Ethiopia for GERD benefits to realigning with its traditional ally, Egypt.

The third and concluding chapter, under the broad heading, Power Politics, The Nile Conflict and Resolutions, will start with the external power politics of the Nile, giving the historical background of the British and the American colonial power politics under the guise of controlling the Soviet Union influence in the region and the most modern intervention of the Chinese states that is massively investing in dams which are gradually affecting the Egyptian Nile's hegemony. This chapter will, under the subsection of dams and politics, further enumerate the dams and barrages on the Nile and how their means of financing have affected the political discourse along the

Nile region. This discussion will be narrowed to the issue of GERD and the reactions that followed its announcement. Under GERD, the International Panel of Experts (IPoE) and the declaration of principles (DoP) following Egyptian and Sudanese disagreement concerning the biggest dam project in Africa will be discussed. This then leads us to the discussion of all the historical agreements, treaties, pacts, and letters of concordance done for sharing the Nile in general. These are divided between the colonial and precolonial rounds of the discussion.

In this light, the most notable 1929 and 1959 colonial rounds, which are the basis of Egypt's hegemony and the current NBI of 1999, which appears to be a stumbling block of the Egyptian hegemony, will be highlighted. The Cooperative Framework Agreement (CFA) will also be discussed. This will be followed by an in-depth discussion of the Egyptian hegemony. The two initial schools of war and peace shall be examined in light of the previous and ongoing cooperation attempts on the Nile. The discussion of cooperation amidst numerous disagreements taking the centre of the stage of Nile discourse shall be projected to gradually pave the way for the violent breeding conflict to erupt amidst a world expectation of cooperation. This is because of original Egypt's position of considering the Nile as an existential threat alongside its struggle to maintain its waning hegemony and hamper the rising hegemony of the Ethiopian state. This shall be concluded by the timeline categorised data to showcase occasions like agreement, disagreement, tension and conflict that have characterised the Nile basin from time immemorial to date. Accordingly, the data at hand will demonstrate that, though the agreement frequency is high, tensions and disagreement taking centre stage in discourse demonstrate that the tendency of war is more likely and may erupt in the course of time.

In this light, the first preceding chapter looks into the water for war and water for peace arguments in hydropolitics to pave the way for consequent discussions that will help in understanding the Nile river politics and framework within which it is studied.

CHAPTER ONE

1. TOWARDS HYDROPOLITICS AND THEORY

International Relations scholars have long been interested in issues regarding the interstate conflict. Environmental studies proliferated, and the focus on high politics began changing in the aftermath of the Cold War (Plessis, 2000: 9). Since then, many transboundary watersystems-related literature began to emerge. This chapter reviews hydropolitics and water-related literature, which has long been categorized under *water for peace* (WP) and *water for war* (WW). It also looks into the body of international relations theories in its quest to find a theory and give justification for its selection as the appropriate theoretical framework (for this thesis) that best explains the ceaseless hydropolitical tension ensuing among Egypt, Sudan, and Ethiopia.

1.1. Literature Review

There has not been a shortage of literature that discusses water as a potential conflict factor. The main theme which cuts across all the water theses is the belief based on a projection that there could be an imminent water crisis across the globe. The overdependence on water necessitated by the excessive need for it and, to some extent, human activities that expose the water bodies to myriads of toxic substances are some reasons the water crisis is anticipated to be the centre of future conflict in the world, particularly in Africa and the Middle East. In this literature review, two schools of thought which are the water for war (WW) and water for peace (WP), shall be looked at through the lens of general hydropolitics and the Nile specifically. Even though the theoretical framework (as will be seen in consequent pages) this thesis seeks to employ to explain the behaviour of the main actors in the Nile conflict is not in projecting a possible peace or war, this thesis (as will be explained by data in subsequent pages) goes beyond the Hydrohegemony framework to project a possible war when hegemony fails to serve its purpose. It is against this background that this literature review explores the WP and WW schools.

1.1.1. Water for War

Issues of water wars and consequent research into them were reignited by several speeches like that of Anwar Sadat in 1979 and Boutros Boutros-Ghali in 1988. The water-induced and

projected wars find themselves in the larger environmental conflict thesis. Water conflict has been at the heart of several types of research about the environment prone to conflict. Between 1980 and 1990, Thomas Homer-Dixon focuses on the relationship between conflict and ecological stresses in mostly third-world states. Homer-Dixon has hence dedicated a website, www.homerdixon.com, where he discusses resources-related conflicts.

A group-based contribution to WW literature was made by the Toronto Group, headed by Homer-Dixon (1991) together with his team and Swiss Federal Institute of Technology Environmental and Conflict Project (ENCOP) scholars. This group took it upon themselves to investigate resource conflict and scarcity. In his *On the Threshold: Environmental Changes as Causes of Acute Conflict* (1991), Homer-Dixon, after hypothesizing the connection between acute conflict and environmental change, went ahead to propose that such conflicts are more prone to happen in poor states, especially in Africa. Gunther Baechler's (1998) "Why Environmental Transformation Causes Violence: A Synthesis published in Environmental change security project" is closely related to Homer-Dixon's work. Drawing from ENCOP's typology Baechler finds that future conflicts can be averted only when resource management and peaceful problem-solving are implemented successfully. Although the two mentioned articles have given much priority to water-prone conflicts, especially the Nile conflict, which is at the heart of this thesis, they emphasise the possibility of war when cooperation fails.

Closely related to the above is an article, *Water Wars: Hydropotential or Hydrohype?*, published in *Revolve* in April 2011. The authors, Aaron T. Wolf and W. Todd Jarvis maintain that conflict over water can be described at best as a "wicked" planning problem that can be an indicator of larger problems. Contrary to what is hypothesized, this article ignores the water war mantra but does not totally rule out its possibility. Taking inspiration from water war critics, Swastika Pradhan, in his *Water War Thesis: A myth or a reality* (2017), sees water conflict as an avenue for cooperation instead of war. Arguing for his position, he asserts that with the exception of the Lagas and Umma conflicts, other states that were in water disputes did not go to war. He concludes, therefore, that water wars are unlikely to happen. I argue that this necessitates another research to show how crucial the water conflict is, especially in the Nile River case.

Furthermore, there are myriads of groups and camps in the debate surrounding resource conflict. Several relevant active debates happen among scholars regarding the relationship between conflict and natural resources. Bayramov (2018: 73) maintains that the literature on the subject matter can be classified into three separate groups. These include those that maintain the position that natural resources can cause 'intrastate conflicts' (Ross, 2006; Fearon, 2005; Collier & Hoeffler, 2004). Others that maintain that natural resources lead to 'inter-state conflicts' are Moyo,

2012, Borgerson, 2009, Kleveman, 2004, Klare, 2001, among others. Lastly, the researchers that stress intrastate and unequal interstate involvement in conflicts are Colgan, 2014; De Soysa, 2007 etc. 'Blood Oil' or 'Great Powers' adherents are names often referred to as the second group (Fettweis, 2011). More of this classification and groups will be discussed later in the thesis.

Not so distinct from the above, Ohlsson (2000) distinguishes between conflicts which are first-order, are caused by natural resource scarcity, and conflicts which are second-order, they are caused by adaptation policies used by communities to subdue scarcity of natural resources, like wars that arise when dam-building projects cause the displacement of large numbers of people. Ohlsson goes on to say that water shortage might be caused by demand, supply, or structural inequities between diverse water user clusters. Scarcity caused by the higher demand for water resources arises from the increasing water demands of a growing population with justifiable requests for better living conditions. Scarcity caused by supply results from drying of water bodies, dropped tables of water, and polluted groundwater and surface water courses; and structural scarcity occurs when more powerful segments of water users confiscate a larger portion of the scarce resource, resulting in the ecological and economic marginalization of the less powerful.

As a build-up to the previous discussion on his Homer article, up to 5 different kinds of life-threatening conflict connected to environment-related scarcity are identified by Homer-Dixon: (i) conflicts that come from internal environmental degradation directly, (ii) ethnic feuds that come from migration and social schisms caused by environment-related scarcity, (iii) civil conflict triggered by environment-related scarcity, (iv) interstate war due to scarcity, as well as (v) North-South struggles over global mitigation, compensation and adaptation of the environment. Homer-Dixon shows in his study that the 4th category — water battles concerning interstate scarcity are most unlikely to happen (1999).

A deeper review on WW has been done by Nochi Faha (2020) through the use of the panel smooth transition regression method in his recent article analyses internal conflict in 124 states within the 1984–2017 periods and its brink outcome of natural resources. The researcher also classifies the literature on natural resources-conflict nexus into two main groups. The first group says that abundant natural resources, generally non-renewable, increase inequalities, conflict and violence Collier & Hoeffler, 1998; Ross, 2001; De Soysa, 2002; Fearon, 2005; Le Billon, 2007; and Collier et al., 2009. Followed by the second group that says, rather, scarcity and abundant resources lead to conflicts and insecurity. Homer-Dixon and Percival, 1995; Homer-Dixon, 1999; Klare, 2001; Peters, 2004; Humphreys, 2012; and Koubi et al., 2014 form an integral part of this group. De Soysa 2002; Fearon & Laitin 2003; Price-Smith 2015; Stern 2016 however, think that the

first group and second groups' findings are not strong.

However, Wolf states that violence related to water frequently happens on a homegrown instead of a worldwide scale, and conflict severity is usually connected to geographic scale inversely (Wolf, 1999). While international disagreements over water-based issues usually do not result in violent war, they caused strained interstate relations and slowed growth in the Nile, Mekong, Euphrates, Amu Darya, Syr Darya, and Ganges river basins. Though disputes are generally limited to the local level, they can also have an impact on state and regional stability. Wolf et al. (2003) maintain that project *Basins at Risk*'s tool of analysis assists in identifying locations where political and hydrological variables indicate a more likelihood of water conflict (Wolf et al., 2003). The project hypothesizes, relied on a thorough examination of 263 of the world's transnational rivers that potential conflict comes up when the degree of change within the basin surpasses the established volume to soak up the change. Disagreements are more likely when there are abrupt physical changes or a reduction in institutional capacity. Significant projects of development that are not coordinated, which alter flow (like dams) when there is no treaty; water basins that unexpectedly turn internationalized as once happened in post-Soviet Central Asia; as well as overall antagonism between groups are key examples. Strategies like this give a collection of monitoring prospective indicators hot spots that allow us to make inroads in the curve of crisis and pave the way for institutional capacity before a hard-to-resolve war occurs (Carius et al., 2014)

Also, building on the initial literature by Wolf (1999) and Wolf et al., (2003), Carius et al. 2014: 61) identify three main connections between conflict and water. The first is access to sufficient water supplies. According to them, water conflicts are most likely to emerge when there is a dispute over lack of contact to satisfactory quantities and water quality. And when supplies of water are not seriously constrained, water distribution among a variety of benefactors and usages (for example, farmers and urban dwellers alike) is hotly contentious. The quality of water, which is degraded, can endanger human well-being and exacerbate the shortage of water, and also be a basis for possible life-threatening conflict. Lastly, when the supply of water for largely irrigated areas deteriorates in amount or value, migrations may occur, potentially destabilizing the receiving cities or adjacent countries. The second is water, loss of livelihood, and civil strife: The importance of water in sustaining human livelihoods might be linked to the conflict in an indirect way. Agriculture, which has generally been the most important provider of revenue, requires much water. Individuals are frequently obliged to find work in cities or resort to alternate, usually illegal, ways of subsistence if this source of money is no longer available. Water scarcity, unexpected floods and droughts, construction projects (for example, dams), environmental hazards, or loss of livelihood can all lead to conflict between local and new groups, especially when it places extra demand on

well scarce resources. Management of water resources and disputes are the third concern. In other circumstances, it is not really a shortage of water which causes tension but instead an ineffective means of administering and managing the resource. Inadequate water institutions, insufficient administrative skills, an absence of accountability, confusing domains, conflicting responsibilities, scattered power frameworks, and an absence of critical setup are all reasons why water management fails.

On the issue of the unavoidability of WW, in her discussion of water wars literature in novels, Hannah Boast (2020) delves deeper into the subject of water wars. Freshwater conflicts can appear unavoidable, especially in dry regions, when changes in climate and contaminants put a strain on supplies. The fact that water is a basic human physical necessity appears to increase the possibility of water wars; our bodies can only go for a few days without it. Furthermore, several key supplies of fresh water, such as the Nile, Tigris-Euphrates and Jordan River Basins, straddle country borders, posing a conflict risk. Hence when World Bank Vice President Ismail Serageldin notably stated that “several of the conflicts of this generation are only concerning oil, yet battles of the future generation would be about water,” the concept of “water wars” gained traction in the 1990s (Selby, 2003: 49). Serageldin warning came amid a broader concern about resource disputes, as Investigative journalist Robert Kaplan’s infamous 1994 Atlantic editorial, ‘The Coming Anarchy,’ underlined (Kaplan, 1994).

It is obvious that WW predictions sound intuitively realistic. Geopolitics, on the other hand, is not uncomplicated. These forecasts are often based on the Malthusian notion that a shortage of resources will result in war (Selby & Hoffmann, 2012). However, proof of transboundary agreement on waterbodies, particularly the ones listed as a “water wars” threat, like the Nile Basin, is substantial. You risk raising friction by appearing to declare confrontation unavoidable by stressing potential conflict over genuine cooperation. However, the urge to find “water causation” in actual confrontations, such as those in Yemen and Syria, underscores indigenous factors that could be more difficult for urban audiences and authorities to comprehend (Selby & Hoffmann, 2014). The Middle East, followed by North Africa, is regarded as the region most vulnerable to the water crisis. The inclination to attribute dispute in these countries to natural conditions promotes Orientalist preconceptions over their population’s “irrationality,” as though they are unable to transcend nature’s determining power (Selby, 2003: 51).

Again, Cooley contended in his paper *The War for Water* (1984) that fighting over the water was the primary cause of the 1967 Arab-Israeli Conflict, significant components of the Palestinian predicament, and the dispute on the West Bank’s future. Several cease-fire deals have been reached involving rival neighbours and Israel since 1947, but they have all crashed due to the unresolved

water issue. The strategic value of attacking water and networks of water resources as tactical military objectives was demonstrated during World War II (Gleick 1993: 79). This concept of water warfare was popularized in the 1990s by the media and academic studies (Shiva, 2002, Bulloch, 1995, Sherk et al., 1998). It is important to stress that Homer-Dixon and writers like him examined various shared river basins and concluded that “river water is the renewable resource most likely to generate interstate resource war” (Homer-Dixon, 1994: 19). These forecasts are based on a Malthusian paradigm, which emphasizes the deterministic relationship between physical water scarcity and growing population, climate change, and new threats in explaining why water wars are unavoidable.

In general terms, several papers in Africa Dialogue Monograph Series No. 2 (2000) talk about the subject matter. The monograph, though it draws several case studies from SADC and South Africa, it generally discusses the formation of a regional resolution that will take care of hydropolitical conflict. Researchers in this series have written on several topics from a broader African perspective. In one of the articles, *Water Wars: Enduring Myth or Impending Reality?* It is revealed by Anthony Turton that though the likelihood of water wars happening appears sceptical, they cannot just be overlooked.

In the same vein, it has been observed when looking at the new trends of hydropolitics that internal struggles and political conflicts are becoming increasingly important for transboundary negotiations as interstate conflicts become rarer and “new wars” involving non-state actors become more frequent. The civil unrest that erodes national institutions can stymie dialogue and collaboration processes, which are important in water sharing management and a requirement for engagement in global forums (Kibaroglu, 2019). Also, as Mason and Khawlie (2016) demonstrated in the Hasbani basin situation, which is mainly situated in the south of Lebanon, a territory that has strived for years with the existence of Hezbollah insurgents, political unrest and a lack of central power in a state may indeed cast doubt on the accessibility of transboundary water resources in states at the downstream. Similarly, Boko Haram’s presence in Nigeria adds to the uncertainty surrounding the management of Lake Chad, bordered by Cameroon, Chad, Niger, and Nigeria and has already seen local disputes over authority and control over resources amongst the various nations’ populations (Zieba et al., 2017). The advent of a powerful non-state entity with authority over the management of water adds a whole new picture and direction to discussions about transboundary water since non-state actors are not constrained by official contractual terms between states. The Islamic State’s seizure of critical water systems in Syria and Iraq is a prime example. Non-state actors are rarely included in official negotiations by riparian governments in order to deny them any credibility as a state-like player (Mason & Kawlie, 2016; Kibaroglu, 2019)

1.1.2. Water for Peace

The “cooperation” point of view is the polar opposite of the “conflict” thesis. This school acknowledges that while transboundary water resources have undoubtedly enhanced interstate interactions, such interactions have resulted in significantly more consensus than conflict. While growth, scarcity, and competitive pressures all have the capacity to cause confrontations, the motivation to collaborate and interact in water dialogue has continually emerged victorious.

More to the WP literature, UNESCO has pursued several policies to address environmental resource scarcity, especially water. According to this outfit’s latest report published in 2018, global water demand is expected to surge by nearly one-third by 2050 due to several factors, including intense environmental degradation. Gilbert Houngbo, the new Chair of UN-Water, for that matter, spearheads the “Nature for Water” campaign triggered on 22nd March 2018. The UN World Water Development Report (WWDR) from 2003 has given prominence to water-related issues. He emphasizes that, despite these significant obstacles, we should also acknowledge the possibility of cooperation about transboundary water and encourage all stakeholders to dedicate everything to ensuring water security as a way of ensuring long-term global security and peace. Egypt, Ethiopia, and Sudan’s authority signing a Declaration of Principles (DP) and engaging in other formal and informal discourses remains a critical confidence-building step.

Adding to the literature on hydropolitics in the early 2000s, Peter J. Ashton did several works, which include *South African Water Conflicts: are they Preventable?* (2000), *Avoiding Conflicts over Africa’s Water Resources* (2002), *Water Demand Management and Social Adaptive Capacity: A South African Perspective* (2002), *The Challenges of Water Resource Management in Africa* (2002) and *Water and Security in Sub-Saharan Africa: Emerging Concepts and their Implications for Effective Water Resources Management in the Southern Africa Region* (2009). Though written in myriads of topics, the main research problem and the point of focus for Ashton have always been security issues and hydropolitics. In his 2009 article, for instance, Ashton discusses how Sub-Saharan African states have sought to share common water resources with their neighbours through what is referred to as the hydropolitical complex. He cites the South African Hydropolitical Complex, a prominent water-sharing agreement among states which has now become a crucial international relations feature of the South African Development Community (SADC) region. Though very extensive, in his *Disputes and Conflicts over Water in Africa* (2007), drawing from several water conflicts, including solved and ongoing ones, the focus has not been on the reality of these projected conflicts. Instead, the author looks at how cooperation can lead to a peaceful resolution of water-prone conflicts.

It is important to add that since the end of the 1990s, as the knowledge of hydropolitics has grown, alarmist claims about water wars have declined in academic publications. Only in Sumerian times have there been examples of water warfare, according to Wolf's research (1998), delegitimizing the claims of water wars in this way. Inter-sector, inter-community, and inter-household water conflicts are more widespread (Allouche, 2011: 5). Since then, academic study on collaboration over shared water resources has progressed, examining the factors that permit such cooperation.

In the same light, Allan (2002) explains why there have been no water wars in the Middle East by demonstrating that virtual water commerce has been and continues to be an efficient approach to deal with water shortage, particularly in dry and semi-dry regions like the Middle East. According to Wolf (1995), technological improvements help to alleviate water scarcity by boosting supply, such as through desalination facilities, wastewater reclamation schemes, and inter-basin transfers. Turton demonstrates that benefit sharing and transaction mechanisms between water and non-water questions are strategically important for promoting and explaining cooperation over shared water resources (Turton, 2008). Furthermore, Lowi (1995) contends that the broader political environment explains why cooperative tactics are adopted rather than dispute resolution. According to Lowi (1995), water is frequently a "low politics" problem in the context of two governments' broader bilateral relations.

Different theories cast doubt on the feasibility of cooperation among riparian states in transboundary basins. In the 1980s and 1990s, defeatist estimates of water scarcity stimulated policy experts' worries of water wars, and as a result, several authorities sought to ensure their nations' had an uninterrupted supply of water at all costs (Philips et al. 2006). Even worse, investigators and the mainstream press have made dire predictions about impending water wars (For instance, the 28th February 2006 publication of *The Independent* as mentioned in Zeitoun & Mirumachi, 2008). The debate at the beginning of the twenty-first century, however, shifted away from water disputes and went toward a more participatory relationship, toward the construct of profit for all (Philips et al. 2006). It's largely owing to Aaron Wolf and his colleagues at the State University of Oregon discovering that hydropolitical conflicts were pretty uncommon throughout civilization in the past, premised on an examination of 1,831 water incidents (Wolf, 1998). Around the world, over four hundred transboundary water treaties are presently operational (Oregon State University, 2009). Numerous authors employ this data to demonstrate that cooperation over transboundary waterways is far more common than war. Some of these writers are Yoffe et al. (2003), Wolf (1997) and Zentner (2012). Additionally, it became known that states that collaborate in other areas frequently work collaboratively on water management, while states with weak

general ties have a higher tendency to be unwilling to cooperate on water management (Yoffe et al., 2003). The term “hydrosolidarity” is coined and described as a complete upriver and downriver corporation of controlling, associate consultation, designs, and intelligent agents competent in linking river system stress to transitions throughout institutional and/or political borders and among diverse land users, users of water, and other interested parties. (Gerlak et al., 2011).

Also, institutions that have interest, like some upstream states, might well recognize the value of partnership, which can result in win-win situations (Philipps et al., 2006). It is interpreted in terms of benefit-sharing, which holds that partitioning the gains of rivers (such as hydroelectricity) seems to be more politically viable and thus will be more likely than partitioning the transnational riches as a whole (Zeitoun & Mirumachi, 2008). Per some theory and research, including neo-functionalism, collaboration in low-level or scientific strategy domains like water allocation could spread or even induce collaboration in higher-level policy domains as a result of remuneration (Philipps et al., 2006). For instance, in the South of Africa, high regional reliance had also fuelled collaboration far above water (Philipps et al., 2006). Regrettably, tense ties among riparian states, particularly those in the Middle East, might still result in a standstill in transboundary water collaboration.

The most frequently referenced factors of conflict involving water, like geographical closeness, type of political authority, climatic condition, river basin strain, drainage systems and infrastructural developments, and reliance on water resources for the purposes of agriculture or power generation, were not confirmed by collected data (Yoffe et al., 2003). Instead, quick or severe alteration in a basin’s physiological or methodological principles – big reservoirs and/or globalization – as well as the lack of institutional mechanisms like global water agreements appeared to be the most criterion of transboundary basin conflict. A high population density (greater than 100 people per square kilometre), a relatively low GDP (less than 765 dollars per individual), generally hostile ties, powerful and influential minority groups that may result in globalisation, recommended huge reservoirs and perhaps other river infrastructural initiatives, and constraints or an absence of water agreements all end up contributing to contentious hydropolitical ties (Yoffe et al., 2003).

The last element demonstrates the critical role of legal frameworks and regimes in avoiding water disputes because they serve as a tool for minimizing or handling international unpredictability and represent a nation’s capacity to recognize and manage constraints on hydrological processes (Yoffe et al., 2003). Similar results have been arrived at by researchers; meanwhile, they emphasize the relevance of organizational potential within a basin: As the speed of transformation in a river system surpasses the organizational capability to soak up the said

transformation, the possibility and severity of disagreement rise (Wolf et al., 2003).

It is important also to mention that Allan (2002) explains why there have been no water wars by demonstrating that virtual water commerce has been and continues to be an efficient approach to deal with the scarcity of water, particularly in waterless as well as semi-waterless areas like the Middle East. According to Wolf (1995), technological improvements help to alleviate water scarcity by boosting supply, such as through desalination facilities, wastewater reclamation schemes, and inter-basin transfers. Turton demonstrates that benefit sharing and balance mechanisms between hydro and non-hydro matters are strategically important for promoting and explaining cooperation over shared water resources (Turton, 2008).

On the issue of non-state actors and hydropolitics can contribute to cooperation, it is maintained that the existence of armed non-state actors can serve as a springboard for cross-border cooperation as nations join forces to limit non-state actors' control of common riches of water (Kibaroglu, 2019). Mutual reliance is another approach to water resource cooperation, whether between governments or on a smaller scale. The island of Cyprus is a case in point. Due to inconsistencies in water governance both on sides of the divide and a political refusal to cooperate economically, the island's water problems have been exacerbated by the political crisis between the Republic of Cyprus and the Turkish Republic of Northern Cyprus (TRNC). But even so, as stressed by Nachmani, a functional partitioned water supply system connects Nicosia, Republic of Cyprus, and Famagusta, Turkish Republic of Northern Cyprus. The system predates the island's political division, which resulted in the water supply being on the TRNC area of the border and the purifying facility being in the area of RC (Nachmani, 2000).

1.1.3. The Subject of Hydropolitics

Water is clearly complex, and one would expect hydropolitics to reflect that complexity. However, one of the issues we're encountering is a lack of precise definitions of ideas. Elhance (1997: 218), for instance, provides just one of the understandings of hydropolitics, defining it as the systematic examination of war between states and collaboration over resources of international water. When this description is broken down, it then seems evident that hydropolitics is about dispute and collaboration, with nations becoming key actors and occurring in transnational river systems shared by states. Furthermore, as evidenced by related work cited above, this government emphasis on dispute its prevention in partitioned international global water systems is not the sole source of hydropolitical concern. If that's the case, the explanation is clearly insufficient or neither correct nor sufficient. Meissner's 1999 work made a similar attempt to describe hydropolitics. According to him, hydropolitics is "the systematic study of the interaction between governments,

non-state entities, and a range of other participants, including persons within and outside the state, concerns the authoritative allocation and/or use of international and national water resources.” (89)

When this definition is broken down, it becomes clear that hydropolitics is about the following: The communication among states and non-state actors is the subject of that study. Persons and other actors from inside and outside the country are included. It's all about authority water allocation and consumption. The source of the water in question might be both international and national, signifying sovereignty over it.

The most famous example of early hydropolitics literature is Wittfogel's (1963) *Oriental Despotism*, which aimed to categorize different nations based on their approaches to water management. Where significant amounts of water had to be managed in order to expand agricultural enterprises in dry and semi-dry regions, Wittfogel's primary hypothesis is that the state evolved to wield control of water governance and labour repression and then headed toward complete, autocratic rule. China typified this 'Asian' hydraulic civilisation. Worster (1985) later distinguished three ways of water management in agricultural communities: local basic sustenance format (in which leadership over water is retained by the surrounding society), agrarian government format (in which an emerging nation is able to design and administer a system of water), and capitalist government format (in which a nation is able to design and administer a system of water). Worster described the hydrostate community of West America West as “a repressive, rigid, and social hierarchy dominated by money- and knowledge-based power elite” (Worster, 1985: 7).

A handful of studies that examined the role of drainage systems in modernisation stimulated fresh perspectives on hydropolitics, straddling the line between earlier work on hydraulic societies and subsequent developments. They move away from prior work's determinism and begin to explore fresh issues regarding the interaction between freshwater, community, authority, and infrastructures. One of them is Swyngedouw's (1999) research of hydropolitics and technology in the modernisation process of Spain, as well as Kaika's (2006) research in Athens on water management technology as a critical axis for modernisation, which spawned the development of hydrosocial methodologies. These researchers mean a heap of literature on the hydrosocial sequence as well as hydrosocial interactions when they say hydrosocial approaches. These overlapping notions deal with the interplay of water and power, albeit with distinct emphasis. The most recent research (*The Hydrosocial Cycle: Defining and Mobilizing a Relational-Dialectical Approach to Water* (Linton and Budds, 2013) has elucidated the consequences of hydropolitics for territory and scale in greater detail.

Wagerich and Warner (2010: 11) present a comprehensive explanation of mapping actors at multiple scales that obviously demonstrates the relevance of addressing diverse players situated at different gages. As a result, hydropolitics actors are primarily found on three balances: global, state, and localised. It further divides the types of actors by identifying three main divisions: public, civil society, and private. Governmental or intergovernmental actors are referred to as “public sector actors” in this context. Profit-driven organizations operating on various scales are referred to as private sector actors. Civil society actors are non-governmental organizations (NGOs) and non-profits that function in the decision-making procedure in a plethora of regulatory sectors as community-based entities. According to Warner, there are also lateral, linear, and diagonal exchanges between those actors.

Figure 1. The scales of International, National and Local actors of water

Sectors		Civil Society	Public	Private
SCALES	International	International non-governmental organizations e.g. IUCN	International Organisations e.g. EU, NATO, UN	Multinational Companies
	National	National non-governmental organizations	The State	Nationwide Business
	Local	Local non-governmental organizations	Province Municipality	Local SME

Source: Wagerich & Warner, 2010: 11

Within the context of an inter-state hydropolitics layer, Warner and Wagerich’s above table accurately shows scalar dynamics relying on players’ varied roots in the relationships between state and society. Transnational hydropolitics, on the other hand, is significantly more complicated than the hydropolitics of interstate, as will be argued later, due to the diversity of organizations involved in the decision-making process. As a result, mapping actors on Warner and Wagerich’s distinct scales does not quite adequately capture tracking players inside a stratum of multinational water politics.

1.1.4. Limits of Hydropolitics Literature

To promote cooperation instead of war, effective discourse can be used to settle transboundary water body disputes. Bréthaut et al. (2021) maintain that several hydropolitical investigations have used the concept of discourse, but it is rarely defined explicitly. The most recent study on discursive hydropolitics reflects this lack of clarity. When assessing the national discourses' legitimacy around Tigris–Euphrates, Amu Darya, and Nile river transboundary hydro-relations, for example, Allouche (2020) positioned dialogue on par with customs as well as concepts, albeit deprived of articulating his definition of the concept. Saklani et al. (2020) did not specify the word “water discourse” in their research of the Ganges–the Brahmaputra–Meghna rivers basin's securitization of water dialogue. Other researchers have provided hazy descriptions of their understanding of discourse. Hussein et al. (2020) used a broad definition of discourses in defining the techniques utilised by state intellectuals to rationalize and justify huge-scale hydraulic facilities in the Tigris-Euphrates and basins of the Nile, making reference to crucial discussion assessment as a technique concentrating on the manner dialect is crafted and then utilised to design social rules and actions (2020: 4). Williams is among the few modern researchers who provide a full description of their perspective (2020a, 2020b). In his investigation of the function of discussion and debate in international water interactions in the river basin of Mekong, Williams agreed with Hajer's (1995) definition of discussion as an outfit or team of “concepts, conceptions, and classifications that are created, replicated and altered within a given package of procedures” (Williams, 2021: 727).

Though Bréthaut et al. (2021) stress that discourses are the ‘sieve’ we use to study how the process of making meaning flows, rather than the independent or dependent variable in our research. In other words, their investigation begins with a look at the various discourses used to depict the hydropolitical certainty of the basin at any specified time and finishes with a look at the way those discussions influence strategies and practice. Though an attempt to contribute to the hydropolitics discourse, this recent Bréthaut et al. only seek to look into the limitation of discourse, not the entire hydropolitics literature.

An examination of the connection between water shortage and war must take into account all three factors of conflict rather than focusing on just one. Most studies, on the other hand, overlook these inextricable linkages in the production of contests. Hydropolitics disputes are also further prone to arise in locations where organisations are weak, and water scarcity is a problem. Regimes are potential mechanisms for reducing or preventing the rise of water shortage and thus evading war through tackling water-related problems, establishing the use of water, administration, and supply parameters, and promoting collaboration in transboundary water systems through the creation of

protocols and agreements. Regimes are often overlooked as significant determinants in influencing the occurrence of conflict in studies on the connection between scarcity of water and war (Mahlekeng, 2019).

Also, the supremacy of both realism which is conflict based and Malthusian methods to policies of natural resources in many works are challenged by critical hydropolitics. The literature on conflict and cooperation's major research strategy aims to uncover a statistically important association between interstate conflict and shared-water bodies. This method is generally one-way, examining the existence of a common water body that could cause dispute between states. The premise that shared rivers or water scarcity automatically leads to conflict, as Gizelis and Wooden argue, is flawed. The disadvantages of this "automatism" include that it ignores the function of institutions, adaptability options, and politics (Gizelis & Wooden, 2010). Both "water wars" and "water for peace", according to Arsel and Spoor, are deterministic approaches with their own set of restrictions (Zeitoun & Warner, 2006). Some scholars claim that conflict and cooperation-based approaches are skewed because they focus on a changing character of hydropolitics, whilst others emphasize the coexistence of cooperation and conflict in water-related issues (Jägerskog, 2015). "Shared control" of transboundary rivers is on the cooperative end of the spectrum, while "contested control" of transboundary rivers is on the competitive end (Zeitoun & Cascao, 2010).

1.2. International Relations Theory and Water

The water debate traces its current path through both the 4th debate and the theoretical setting 'after the 4th debate's theoretical environment. The metaphor of swimming upstream or swimming downstream (Swatuk, & Vale 2000) locates the discussion in the area of the 4th debate due to its emphasis on contrasting perspectives. Executed correctly, progress in opposing ways down the rationalism/reflectivism line, whether with or against the prevalent stream, is often probable to lead to a deadlock in which the argument is 'quelled' by the "growing ennui" of intense incommensurability. As a consequence, the "upstream swimmer" will most likely succumb to the dominating flow or (least probable) may be driven right beneath contraflow disruption. As an alternative, a non-zero-sum model is given, advancing the dialogue to the domain of 'after the 4th debate.' The metaphors 'mainstream' and 'tributary' are employed to represent the dominating and peripheral narratives, respectively, in conformity with the river image. Regardless of their relative strengths or paths taken, both cross the hazy terrain of the theory of IR in order to refill a shared issue-field marked by the scarcity of water. Furthermore, planning is done for the

construction of a 'conduit' that connects the principal and branch streams and may pave the way for a centre way as a result of the conciliation.

Water is as old as life itself, aside from being a component of it. Humankind has always been acutely aware of the importance of water throughout history. Water has occasionally become the central focus of IR in a world obsessed with typical "high-politics" security threats. On the other hand, the advent of the collapse of the Soviet Union provoked a radical shift by prompting the re-emergence of "water talk" as a separate and debated subject of pragmatic and academic interest.

The water flow aspect aptly reflects how it is being addressed as a shared "issue-field" at the levels of professional problem-solving, sloganeering, and scholarly dialogue. Additionally, because the implications of water (particularly water scarcity) are hard to confine to a single operational realm, the conversation has expanded to include economy, growth, the surroundings, defence, and civil rights. Water complexities (and the intricacies of water) have thus become an intrinsic aspect of current politics of the world, based on the widespread perception of water as a worldwide shared and common interest, as well as the interconnectedness and interaction of global players.

Given the importance of water systems as a precious resource around the world and in Africa, it's not a surprise that there has been a slew of water-related conferences, publications, research initiatives, and even research institutions during the last decade. Apart from applied hydrological studies and initiatives, the contributions of the social and political discipline, particularly the subject of IR, have also been made. Local contributions (within the African continent) comprise the ones made by (Hudson, 1996), (Solomon, 1996), (Van Wyk, 1998), (Meissner, 1999), and (Turton, 1999), who were inspired by foreign scholars such as Glieck, 1993; Ohlsson, 1995; Homer-Dixon, 1994; Okidi, 1997; Percival, 1997; Percival & Homer-Dixon, 1998; Allan, 1999; and Fleming, 1999 among other mentioned in the above literature review section. Security of the environment, resources, water, water shortage, water war and cooperation are all addressed in these studies, as well as policy management of these challenges.

Apart from elucidating concepts and adhering (invariably) to specific assumptions of theories about freshwater resources as a concern of the environment, development, or security problem, the preceding does not really consciously reflect a different sort of IR theory. Additionally, they do not really expressly place the water debate in a certain theoretical mode, nor do they set out to build a concept of hydropolitics within any specific IR's construct or theoretical framework. With the exception of Turton (1999), who approaches the last mentioned in a largely

positivist environment, the most significant exception is Swatuk and Vale's (2000) critique of current water discourse, which exemplifies a post-positivist, reflectivists manner of theorising (Plessis, 2000: 9).

However, due to a number of reasons, it provides little insight into theory as a whole. On the one hand, most non-political players and stakeholders are unacquainted with the fundamental features of IR theory. As a result, they frequently incorporate concepts from non-political intellectual domains (an essential, multidisciplinary convention that should not be disregarded). They are not really scholars or theorists of international relations, after all. On the other hand, some researchers and analysts in the field are unacquainted with global theory or prefer to treat topics in an overarching theoretical or purposely non-theoretical manner. As a result, they make no claim to a particular theoretical viewpoint and are frequently unsuccessful in generating assessments that exhibit distinctive aspects of IR. The ones that present a conceptual foundation – openly or indirectly – frequently do that with little regard for their conceptual perspectives or, to quote Boucher (1998: 6), justify their concept in terms of its strategic significance, in line with the subject matter's profoundly practical nature. And besides, water appears to be a matter of urgent or practical importance rather than an IR theory.

To begin, it is frequently asserted that the social sciences' goal is to simply systematize and formalize understanding of the universe (Ringmar, 1997: 284). According to a positivist perspective, conceptualisations are valid to the degree that they properly represent observed evidence. Because the meaning of facts is a (meta)theoretical rather than a factual matter, the theory gets epistemological and ontological weight. As a result, the adage "nothing is more practical than a sound theory" takes on newfound significance (Neufeld, 1994: 12). Second, because domains of research involving widely accepted themes are formed politically, the constraints imposed by particular theoretical frameworks focusing on this discipline must be evaluated carefully (Cox & Sjolander, 1994: 4-5).

On the surface, it appears as though the water narrative is following an unpredictable route through the theory of IR, as well as (dis)embarkation stations and navigational beacons. A closer look shows that the theoretical discourse could be mapped by observing the effect of theory on the water discussion, giving insight into the evolution of IR theory, contextualizing water discourse theory in relation to competing IR theories, and concluding with comments on upcoming prospects and challenges. As a result, this narrative serves dual functions. Conversely, it explains the conceptual terrain of IR, which includes a subfield devoted to water diplomacy.

1.2.1. Towards the Nile Hydropolitical Theory

This section looks into a couple of theories of International Relations and how the Nile conflict has been theorised in them accordingly. This is to pave the way for the theorization of the Nile conflict's regional and international implications within the framework of Hydrohegemony.

1.2.1.1. The Realist Perspective

Because realism remains the widely established theory in today's IR, it is recognised as a worldview (Halliday, 1994; Nye, 1993). Whereas realism is described in this study as a single theoretical position, it actually encompasses a number of conflicting ideas that oppose key aspects (Meissner, 2004; Walt, 1997). Furthermore, realism is discussed in the next section not to disprove it as a legitimate conceptual framework in this study but rather to demonstrate how it complements norm evolution and hydropolitics.

Statism, self-help, and survival are among the shared assumptions of Realist theories (Meissner, 2004: 25). To begin, a nation is considered as a principal player and unit dimension, and because it is unitary and rational, Realist studies concentrate on interstate interactions (Du Plessis, 2000; Dunne, 1997b). According to Viotti & Kauppi (1999: 6), non-state entities are secondary since governments' state representatives are the only institutions capable of enacting and enforcing laws. As a result, realist analyses are unduly state-centric, failing to consider normative issues and non-state actors (Lynn-Jones, 1999).

Second, realist theorists believe that sovereignty comes first. In addition, civil society should be constituted before it works (Meissner, 2004). As a result, there is a flow of power in one direction, from the state to civil societies. Given the spiky complexities of transboundary river management, it is difficult for transboundary and regional management of water resource study, especially. The overall contradiction between compartmentalization of governments claiming rights of sovereignty over resources in their area. The indivisible/uninterrupted continuum of water, as previously established, complicates the realm of hydropolitics. Furthermore, because realism separates the local from the international sphere complicates an examination of global norm evolution as it moves from the international to regional, national and sub-national.

Realists also argue that nations employ an authority to advance a country's interests (that are seen as constant and stable factors) and achieve objectives (Brown, 1997: 34). As Finnemore (1996: 27) argues, this work does not conclude that norms matter whilst interests do not, or that norms are far more relevant than interests. The point is that norms influence interests that,

by their very essence, are socially produced. Furthermore, whereas Realist assumptions about state following interests are uncontested, entrepreneurs of norms and several non-state players employ organizational channels so that they can persuade important state and mass leaders to accept new norms.

Finally, realism posits that the global structure is essentially anarchical; hence countries seek to maximize their authority so that they can maintain internal security (Lynn-Jones, 1999: 55). As a result, every state has an obligation to defend its political, physical and cultural identities against a potential threat from any country (Dougherty & Pfaltzgraff, 1990; Morgenthau, 1974: 4). Because realism is largely state-centred in approaching IR, its theoretical framework is sorely limited to understanding the processes of global norm evolution in water politics.

Dinar points out that riparian position has a role in determining a state's relative power in its dealings with co-riparians, observing that "the weakest party, militarily and economically, may be in possession of the source or encompass the bulk of the river in its territory." The ability to influence the flow of water by damming or diversion originates from the distinct advantage that topography affords an upstream state. Turkey, which maintains a hegemonic position in connection to the Tigris and Euphrates Rivers, and China in the Mekong River system, are examples of Dinar's assertion of geographical dominance. However, it is believed that, in the case of realism and the Nile nexus, while geographical location can benefit a state's level of power, it is capabilities, not riparian position, that allow states to gain relative influence within a basin. This is evident in the situations of Egypt and Israel, which, from the lowest and mid-stream vantage points, respectively, maintain a strong position in relation to their co-riparians. As a result, for the purposes of this study, a state's relative power position will be determined primarily by its material and immaterial capacities in relation to its co-riparians.

1.2.1.2. The Liberal-pluralist Perspective

In International Relations, conventional liberal pluralism is a theoretical umbrella phrase that can be distinguished from and contrasted with realism (Stone, 1994). Liberal Internationalism, Neo-Liberal Internationalism, Regime Theory, Idealism, Liberal Institutionalism, Neo-Idealism, Functionalism, and Neo-Functionalism are examples of the handful of theories featured in liberal pluralism. As a result, it is most appropriately referred to as a paradigm rather than a cohesive theoretical approach (Dunne, 1997; Viotti & Kauppi, 1999). In general, the perspective of liberal pluralism of global politics is based on the values and concepts of the below-described liberalism.

To begin with, liberal pluralism's viewpoint holds that nations are neither the sole nor IR's

most significant players. Non-state players like individuals and interest groups, on the other hand, can exercise varying degrees of autonomy (Meissner, 2004; Stone, 1994). Viotti & Kauppi (1999: 199) mention that non-state players are increasingly influential in influencing governments' decisions on national interests. Second, it is argued in liberal pluralism that actors are part of an exceedingly intricate, inter-reliant, and interrelated scheme (Heywood, 1997). Third, in order to accommodate a variety of non-state actors, liberal pluralism prioritizes independence over sovereignty as a stable norm (Meissner, 2004). Fourth, states contend as porous actors rather than unitary and solid (Heywood, 1997). In terms of types of governance, constituencies, and other characteristics, each state is unique, and these qualities might shift through time (Meissner, 2004; Stone, 1994). Citizens, interest groups, local governments, and federal departments make up states, and they are all in constant competition with each other (Meissner, 2004). When countries appear as unitary players in this sense, neither variety nor analysis of transnational and subnational players with the ability to impact the state will be there (Viotti & Kauppi, 1999: 200). Fifth, liberal-pluralism hold the view that because the domains are interrelated, both foreign and domestic politics in analysis or reality will be impossible to be isolated (Meissner, 2004). Finally, they believe that international cooperation is the normal result of the existing international system's liberal nature (Stone, 1994).

Because it recognizes the state's diversity, more than realism, liberal pluralism provides a more effective account when it comes to the impact of worldwide ecological multilateralism and sovereignty of state on regional management of water resources. However, while assigning agency to nonstate players broadens the scope of international water politics (through arguing that institutions may influence the behaviour of the state), limited viewpoints of liberal-pluralism effort to connect non-state players to the development of interest and identity (Smith, 1997). Furthermore, liberal pluralism regards international institutions as forces of benevolence while, in reality, they can behave as pursuing rational self-interest that is in conflict with the ones seeking harmony or cooperation. On the other hand, they may be empty, pompous institutions founded solely for lip devotion to the problem of the environment that is viewed as world moral citizens adhering to the norms collection of transnational cooperation, without ambition to improve internal policies. Realism maintains that liberal justification can be based on realism and that sheer military and economic might continue to outweigh socio-cultural power concepts and others.

1.2.1.3. Game theory Perspective

In their article *International Markets for Water and Potential for Regional Cooperation: Economic and Political Perspectives in the Western Middle East*, Dinar and Wolf (1994) combine three major aspects of water issues - political, economic, and technical - to find a practical remedy

of the water scarcity issues. To determine the predicted benefits of international water transfers and their rationale in the Middle East, the authors use water markets, optimization tools, and game theory. Unlike previous models, it uses water markets to address worldwide water allocation (including non-riparian demanders) (WM). Dinar and Wolf point to the potential for technological advancements in the use of water in various industries, particularly agriculture, which is the largest water user. The goal of technical improvements is not only to raise production in the industry but also to save water so that surplus amounts can be transferred to other sectors and even non-riparian international consumers. Game Theory is used to analyse conflicts by examining the many actions and strategies that each conflict actor can employ and, as a result, looking for possible outcomes and solutions to the conflict (Madani et al., 2011). Every game has participants, actions (also known as strategies), payoffs for each action, and an information set, or the amount of knowledge a player knows (Rasmusen, 2007). Every player has preferences for specific behaviours that are based on social and political ideals as well as economic ones (Madani et al., 2011).

As a result, a “situation” can be viewed as a game. Cooperative and non-cooperative game theories are the two categories of game theories. Players in a cooperative game can resolve the disagreement by making legally-binding pledges. These games are centred on the concept of fairness. The game is not about figuring out how to get a specific result; it’s about getting that result. The opposite is a non-cooperative game. Due to their conflicting preferences for alternative activities, the game’s players are unable to make binding promises. The players in this type of game are attempting to increase their personal use while disregarding the feelings of the other players (Rasmusen, 2007). According to this theory, first and foremost, the decision-makers must be identified. These are the people who are taking part in the game. Then there are the possible possibilities or acts and states that are doable. Following that, the permissible state transitions are defined. The final stage in the modelling phase is to determine each player’s preferences. The stable individual points can then be found, and the equilibrium points built. The sensitivity assessments are then applied to the game. Other elements can be changed by modifying specific game parameters, resulting in potentially different equilibria points (Hipel et al., 1993). The Upstream countries, Ethiopia, Sudan, and Egypt are recognized players in this regard (Madani et al., 2011). Madani (2011) uses game theory to explain the Nile nexus and concludes that Egypt will react in five of the six equilibria. As a result, Egypt’s preferences have the most influence on the outcome. Other countries are afraid that Egypt may react against them. Ethiopia, Sudan, and the upstream countries all prefer to do nothing to prevent Egypt from retaliating against them, as seen by their preferences. It does not appear that it will be easily handled from a Game Theory standpoint. The countries of the Nile Basin, on the other hand, are collaborating with a worldwide community to assist resolve the problem (Madani et al., 2011).

1.2.1.4. Framework of Hydro-Hegemony (FHH)

Framework of Hydro-Hegemony (FHH) evolves as a unique paradigm theory for studying transboundary water relations in the study of hydropolitical relations. Zeitoun and Warner have observed the way cooperation among riparian states covers looming water conflict existence, and also the asymmetry of power among riparian states and the hegemony it generates are the primary factors of riparians' extent of authority over resources that are shared (Zeitoun & Warner, 2006: 436). The construction of the current analytical framework has been made possible thanks to FHH. As opposed to the other three theoretical frameworks, FHH as further explained below, gives a better explanation of the thesis topic.

1.2.1.4.1. IR and Hegemony

Once the idea of hegemony has been defined, we can look at how it may be used in international relations. The term "hegemony" used in this research alludes to the Gramscian concept of consent and coercion was initially conceptualized and executed at the National level (relating to "interior" hegemony in the Italian period of Fascist Italy). There are two primary perspectives to hegemony in IR theory: a conventional realist viewpoint and a critical neo-Gramscian one. According to Bieler and Morton (2004: 87), "traditional IR theory restricts hegemony to a particular measure of domination depending on nations' military and economic strengths." This concept of hegemony – which may be related to the first dimension of power, which is hard power, since it relates to dominating by force – is at the heart of Robert Keohane's hegemonic stability theory (HST) (1984). HST is founded on two key tenets: i) "In global affairs, the order is often established by a solitary dominant power." Because democracies are components of global order, this indicates that the development of global regimes is generally dependent on hegemony"; ii) "Order preservation necessitates continuing hegemony" (Keohane, 1984: 31). As a result, partnership, order, and stability could be attained via the pursuits of hegemonic power, that "should wield sufficient military power to defend the global political-economic system that it pervades from encroachment by adversarial threats" (Keohane, 1984: 39).

In contrast to this viewpoint, Robert Cox's neo-Gramscian viewpoint on hegemony enhances the realm of hegemony, returning to Gramscian theorisations, and describes it as a manifestation of broadly-based approval backed by physical assets and structures. Dominance by a strong entity may be a required but not necessary requirement of hegemony, according to Gramsci (Cox, 1981: 139). Hegemony, according to Cox, is centred on three areas of activity: 1) the social forces generated by the manufacturing process; 2) the forms of state; and 3) world orders (Cox, 1981: 137-8).

Furthermore, Cox recognized three types of potentials that interact within each field of activity: material capabilities/power (as industries and weaponry), ideas (intersubjective meanings and aggregate visions of social order maintained by distinct sections of persons), and institutions (a certain combination of material power and ideas that in upholding stability). These three factors interact in a reciprocal connection to form a traditional framework.

World hegemony, according to the global order, “is a social system, a structure of an economy, and political structures; and it cannot be just one of these things, but must be all three” (Cox, 1983: 172). As a result, when hegemony is analyzed on a global scale, it appears as a complex of universal norms and institutions that generate standards of behaviour for governments and the many forces functioning within the public sphere. The hegemon is the foremost among equals, such as the United States in the UN General Assembly vs Canada. Both nations have a single vote and are officially on equal status, but the United States’ vote has more value with respect to authority than Canada’s (Zeitoun & Allan, 2008).

This is the key distinction between hegemony and other types of control, such as imperialism or plain domination: hegemony may manage inter-state relationships without the intervention of a superior entity, whereas imperialism is reliant on an official rule and military force (Keohane, 1991). The hegemonised must see the current condition as legitimate and proper for a hegemonic system to continue. When agreement disappears, and order begins to be questioned, as in the instance of the Arab nations in 2011, hegemony is no longer present, and authority can be overthrown (Keucheyan, 2012). Making a contribution to this neo-Gramscian standpoint, Belgian political theorist Chantal Mouffe (2008) defined hegemony and a hegemonic order as anything fixed via axial focuses, “which discursively fix the meaning of institutions and social practices and articulate the “common sense” through which a given conception of reality is established (Mouffe, 2008).

Whether the concept of hegemony is addressed from a realist or a neo-Gramscian viewpoint, it is evident in both situations how this notion is inextricably linked to that of power. The primary distinction is that the former method emphasizes hard power, whereas the latter emphasizes a mixture of hard (coercion) and soft (consent) power. Consideration of hegemony just as a type of dominance based on material capacities is fairly reductive. On the question of consent, numerous philosophers have concurred over the previous five centuries on one point: raw strength alone is insufficient to retain domination.

1.2.1.4.2. Power in FHH

The asymmetry with which power is dispersed and wielded has always governed the underlying nature of power and our perception of it. Power has never been distributed equitably among people, corporations, or states. This asymmetry can also be seen in the act of competing for shared or transboundary water resources, as each competitor's respective strengths and limitations are shown (Zeitoun & Warner, 2006). FHH is used by Zeitoun and Warner to identify the asymmetric power distribution that exists in rivalry over resources that are scarce or shared. Zeitoun & Warner used the 2005 notion of the power of Daoudy's and Turton's as both *puissance* which is prospective power influence, and *pouvoir*, which is realized power influence to frame the asymmetry of power within the FHH. According to them, the physical ability to blow up an atomic bomb is *puissance*, whereas the authority to halt the bomb from being detonated is *pouvoir* (Zeitoun & Warner, 2006: 442). Power is viewed as containing three separate albeit complimentary aspects when *pouvoir* is situated within the broader formulation of Steven Lukes' (2005): material, negotiating and ideational (Zeitoun & Allan 2008). It appeared in the 1962 paper of Bachrat and Baratz that power has myriad aspects. Lukes (2005) claims that each face is more profound and veiled than the last.

Zeitoun and Allan (2008) record the interaction among these eyes of authority when they highlight how players in positions of authority can keep or even enhance their quality of life by (1) dispatching resource authority in an aggressive fashion; (2) utilizing authority over the negotiating procedure to guarantee progress where orthodox and traditional for negotiating opportunity exist; and (3) co-opting those with less authority into having faith that their misfortunes are plausible, and not writ large. For our purposes, the main advantage of this multifaceted approach to power could create a more thorough and nuanced means of analyzing the imbalance that generally appears through international hydropolitics. The technique could assist in understanding where authority influences what we know, what is prioritized, and who wins, as well as raise human understanding of the hidden and covert mechanisms that frequently underlie these results (Zeitoun & Allan, 2008: 9). FHH explains how powerful factions could maintain hegemonic leadership for ages, centuries, or perhaps generation by successfully grasping and executing various types of authority.

1.2.1.4.3. Hegemony in FHH

Hegemony, being a fundamentally contentious theme, is roughly utilized and frequently misused phrase in society and widespread press. According to Zeitoun and Warner (2006: 437), this is an "often useful epithet by which major powers' behaviour has been criticized."

Hegemony, heavily influenced by scholarships of both Gramsci and Neo-Gramsci as used in the hydro hegemony framework, is opposed to the realist and liberal schools (Waltz, 1979; Keohane, 1984). The concept of Hegemony remains helpful in that it allows for the interaction and investigation of unequal international powers (Zeitoun & Allan, 2008: 9). Gramsci (1971) explains hegemony as a relationship of consent through political and ideological control instead of dominance by power and coercion. In an attempt to distinguish between the two ideas, the Framework of Hydro Hegemony posits that it is possible for hegemony to be characterized as leadership propped by power, whereas dominance is seen as leadership propped by coercion (Zeitoun & Warner, 2006: 438). The difference between dominance and leadership is crucial to the framework of Hydro Hegemony because hegemony must not be seen solely as the result of intimidation or force but instead as a result of the accord. Legitimacy is explained by Rush (1992) in this context as the degree to which political and social norms are recognized, particularly the ones relating to the power exercised over some groups or individuals by other people. Additionally, rather than simply bullying, powerful governments can accomplish triumph in a strategy of hegemony through fostering unity via attraction and fear balance (Zeitoun & Allan, 2008). Similarly, Gramsci (1971) expounded on the complimentary power mixture as well as consensus required for hegemony by employing the half man, half beast mythological centaur of Machiavelli in explaining how the upper class may efficiently control the lower class so that revolution would be averted. That is to say, because hegemonic power, to ensure effectivity, should justify the non-hegemon, it will constantly take two or perhaps more to tango.

By integrating the concepts of power and hegemony with an insight into the occurrence of silent conflict along transboundary river basins, Zeitoun & Warner (2006) appropriately developed the idea of hydro-hegemony. Even at the most fundamental level, hydro-hegemony is basically hegemony exerted inside the river basin. Moreover, Warner (2008) emphasizes that river basins represent a unique field of international relations in which ties among basin nations are almost always strained as a result of their competing hydraulic objectives for the transboundary river. When these tensions, which appear as rivalry, are combined with current power imbalances, they provide the prerequisites for hydrohegemony. Asymmetric power, according to FHH, is a determining element in the result of the struggle for and the amount of influence that is realized over water resources that are shared (Cascao, 2009: 75). It is important to add that hydro-hegemony is criticized for being state centred and neglecting riparians in basins that are non-hegemonic where water resources are asymmetrically controlled.

According to FHH, hydro-hegemony is attained via control of water resource measures like resource acquisition, containment and integration. Its plans are carried out via a variety of

strategies (for instance, pressure of coercion, pacts, knowledge building, and so on) made possible through exploiting current power imbalances (Zeitoun & Warner, 2006: 435). FHH classifies containment, grab of resources and integration as the primary outcomes of strategies sought by hydro-hegemony through classifying all under Lustick's compliance-producing processes of rising effectiveness (Coercive – Utilitarian – Normative – Ideological/hegemonic). Furthermore, Zeitoun and Warner present a number of techniques for hydro-hegemony to use in implementing these water management techniques. We could gain a decent understanding of the way hydro-hegemony attains the necessary asymmetric dominance on transboundary resources by building on and discussing these techniques and strategies in the Eastern Nile basin framework of hydropolitics.

1.2.1.4.4. Water Control in FHH

The goal of measures used in taking over resources is to ensure domain authority over water resources via the development of hydrological works that alter movement or condition. Through the establishment of “realities of the situation,” riparian states permit physical water management while also producing fresh hydropolitical complexities inside a basin (Zeitoun & Warner, 2006). Through this method, Riparians could attain entry and authority over water supplies, thereby changing resource allocation in their favour (Homer-Dixon 2001). Egypt's building of the Aswan High Dam in the Eastern Nile Valley is an example of the way regimes could seek resource-capturing techniques by building massive hydrological infrastructures (Waterbury, 2002). Even though this technique is commonly linked with unilateral action, it is important to highlight that it can be integrated with other techniques (containment or integration) and mechanisms (pacts, agreements, incentive schemes, and so on) to maintain authority.

Containment strategies aim to keep riparian contenders at a disadvantage by confronting them in bilateral moves or multilateral measures to ensure continued concession (Zeitoun & Warner, 2006). Hydro-hegemony could also choose to enter into favourable contractual arrangements with their riparian counterparts to limit their leeway thereupon (Fischhendler, 2008). Legal contracts and agreements have been critical in Egyptian Nile containment attempts. Sudan and Egypt signed the 1959 Agreement for the Full Utilization of the Nile Resources, which practically allotted them more than 80% of Nile waters (as will be described later in this thesis). The 1959 Agreement is the historical cornerstone of Egypt's policy of containment, and the policies it set to remain the backbone of Egypt's Nile posture today. Meanwhile, integration strategies do not rest on the involvement of hydro-hegemony with its riparian opponents but rather on the provision of inducement targeted at promoting adherence which is achieved by shared understanding (Zeitoun & Warner, 2006). According to Zeitoun (2011), Mirumachi, and Warner, this conformity is achieved by the integrative application of ‘soft’ power.

Military force techniques are used when riparian governments organize and utilize their armed forces to confront other neighbouring states in hydropolitical disputes; however, they are unusual in water competition. Certainly, as demonstrated by Dinar (2009), using physical aggression in hydropolitical feud is not only uncommon but inefficient. A riparian intervenes in the internal affairs of a competitor, either by proxy or undercover, so that it debilitates its socio-political, economic, army, and hydrological system. In this situation, a proxy could be the opposing group or resistance group that receives outside support. Egypt has often supported Somali secessionism and Eritrean irredentists so that an upstream state like Ethiopia is destabilized, utilizing the Eastern Nile as a staging ground on multiple occasions (Zeitoun & Warner, 2006). The most commonly used approach is coercion- pressure. It relates directly to the threat of putting a riparian under political, military, diplomatic, or economic pressure to guarantee acquiescence. Through invoking military intervention, financial sanction, and even political marginalization, hydro hegemons could push lesser riparians off opposing policies (Cascao, 2009: 81). Egypt has already used military aggression to deter Ethiopia from pursuing its Nile hydrological aspirations in the past (Bruneau & Toope, 2002). Egyptian governments, beginning with Sadat to Sisi, have employed coercive and pressure measures to achieve Ethiopian and Sudanese compliance. As will be discussed in this thesis, these strategies continue to prevail in Egypt's foreign policy with its neighbours.

Utilitarian techniques are diametrically opposed to tactics of coercion, with hydro-hegemons rather providing an inducement to neighbouring riparian states in order to achieve cooperation. Such approaches are frequently used in conjunction with water management tactics or resource capture. Egypt has signed a slew of commercial accords with Ethiopia, despite their well-publicized tensions over the latter's GERD development. It is also worth noting that by providing these incentives and gaining acceptance, hydro-hegemons may easily get problematic hydraulic project facilities through (Cascao, 2009). In its negotiations with Sudan over the 1959 Agreement, Egypt, for example, used utilitarian approaches such as incentivization. Acceptance of the construction of Sudan's Roseires Dam, compensation for the construction of the AHD, higher water allocation, and sharing of fresh and recovered waters were among the incentives.

Normative methods seek to institutionalize riparian interactions through treaties, preserving the potential to give support towards the accomplishment of all hydro-hegemons' control of water policies. Treaties might become bilateral or multilateral in nature, they may address a wide range of hydrological concerns, yet they must not be viewed as entirely beneficial or helpful. Indeed, a good number of researchers (Fischhendler 2008, Zeitoun & Mirumachi, 2008) have maintained that

these accords have the prospect of masking the concerned actors' underlying goals as well as driving processes with a hydro-hegemonic agenda, hence prolonging uneven water allocation and use. The signing of the Nile River Agreement in 1959 by Sudan and Egypt is a lasting illustration of how normative techniques have contributed to the retention of asymmetric authority in the Eastern Nile. The above explanation of the FHH, with a few examples in the ongoing struggle along the Nile basin, is considered in this thesis as the main reason why the FHH is the most fitting framework for the Nile nexus.

Figure 2. The four pillars of power in Egypt



Source: Zeitoun & Cascao, 2010

1.2.1.4.5. Counter-hegemony

Counter-hegemony, meanwhile, refers to initiatives to undermine dominant cultural rhetoric. This means that it is a challenge and/or resistance to the current state of things and its validity in effect. If a counter-hegemony develops strong sufficiently, it can engulf and overtake the historical bloc in which it was founded. It tries to limit the number of individuals who embrace its perspective on the hegemonic sequence via persuasive communication or propaganda; in a war of movement, counterhegemonic inclinations that have risen immensely sufficiently topple the existing hegemony, forcibly or cooperatively, and create themselves as a latest iconic block. Therefore, counter-hegemony resists dominant influence while developing a dominant alternative path. This is what upstream riparian nations like Ethiopia are doing to threaten Egypt's historic Nile River freshwater monopoly. Furthermore, Ethiopia might boost its negotiating leverage with Egypt by daring to mobilize its domestic and global financial resources to develop unilateral initiatives that may compromise Egypt's water supplies. This boost in Ethiopia's relative strength explains how it was able to push Egypt to participate in negotiations. As a result, for the first time in the Nile basin's hydropolitical history, Ethiopia tried to bring together almost all of the Nile riparian countries to vote in favour of a draft document, the Cooperative Framework Agreement, that fully supports the precepts of equal and fair use of, successfully alienating Egypt's assertion of historic

rights over the Nile available water (Cascao 2008).

However, this thesis is not considering the counter-hegemony of Ethiopia as strong enough to overturn the hegemony of Egypt in the nearest future. Though the counter-hegemony of Ethiopia cannot be dismissed as it is apparent in many current activities and discourse along the Nile, this thesis maintains that the hegemony of Egypt is a force that could turn the political discourse of the Nile into a violent one. As demonstrated in the figure below.

Figure 3. The four pillars of power of Ethiopia



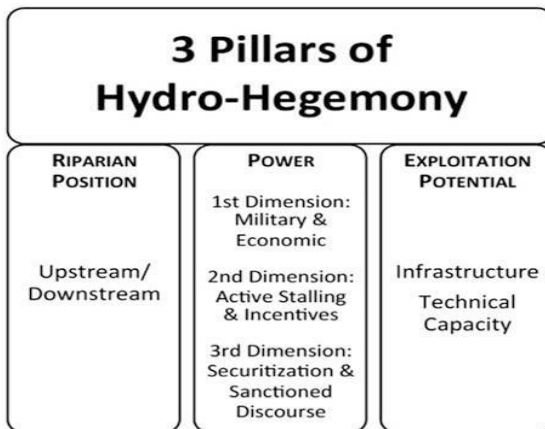
Source: Zeitoun & Cascao, 2010

The two figures indicate that Ethiopia does not have enough power in all aspects except geography to countermeasure Egypt's position.

1.2.1.4.6. Hydro-Hegemony and International Law

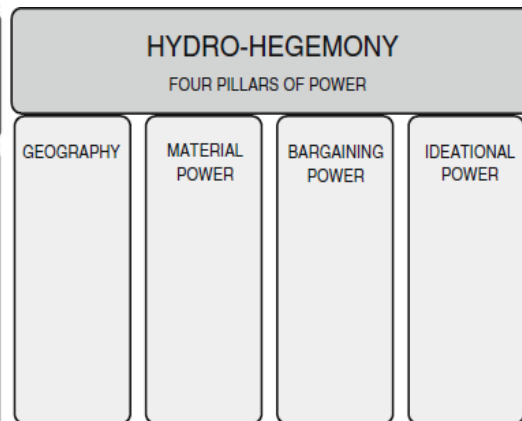
The idea of hydro-hegemony gives a structure for translating the connection between the usage of coercion and water allocation, irrespective of the regulations of global law because the framework of hydro-hegemony demonstrates the State's concealed usage of force to propagate unequal water sharing provisions. As a result, global water law must incorporate these covert hegemonic tactics into its foundations. To make the "carrot" of global law appealing, the "stick" of dominance must first be eliminated since hydro-hegemony lowers the efficacy of global principles of law (Woodhouse & Zeitoun, 2008: 103–119).

Figure 4: Original Pillars of FHH



Source: Zeitoun & Warner, 2006

Figure 5: The Revised Pillars of FHH



Source: Cascão & Zeitoun, 2010: 28

The examination of hydro-hegemony via the lens of global water legislation reveals that global water legislation is a component of relations of power between river jurisdictions because they are viewed as a source of structural and negotiating power. As a result, global water legislation rules tend to boost downstream nations' bargaining power (Daoudy, 2008). Because green water and virtual water, like blue water, are susceptible to hydro-hegemony, global law can be a beneficial instrument in correcting inequities caused by hydro-hegemony, which in turn restricts the purview of current global law.

The international legal system tends to be oblivious to the origins of unbalanced freshwater sharing agreements at the moment, focusing instead on finding a solution to the consequences. Once a sovereign state controls another, international law is essentially undermined, especially when convention law is considered the sole legal way of achieving fair and equitable use of a common water resource. The establishment and implementation of treaty terms for water sharing are undoubtedly influenced by a powerful state's hegemony. It seems that the 'carrot' of international law must first be destroyed in order for the 'stick' of hegemony to be appealing. The efficiency of international legal concepts is plainly harmed by hegemony (Woodhouse and Warner, 2018).

The Framework of Hydro-hegemony has three potential contributions to transboundary water course legislation (Woodhouse and Warner, 2018: 118). To begin with, by identifying the basis of hegemony, the legislation will be capable of observing where it is occurring and what the consequences may be. It would establish a system that would allow the law to 'stop' the roots of unequal and unjust sharing of transboundary water instead of the current strategy of attempting to

‘remedy’ the consequences through legal action. In this domain, there is indeed a substantial body of expert experience and knowledge that should be made available in the legal sphere (Woodhouse & Warner, 2018: 118).

Second, by analyzing and describing State action, a body of understanding that constitutes the unambiguous identification of activities that should be fostered and all those that should be avoided might be accumulated. This understanding of state behaviour could guide both treaty legislation and customary law, which is far more generally applied. Hegemony actually manages to neutralize the legal influence of treaty law for the time being, but it might not be the case for customary law (Woodhouse & Warner, 2018: 118).

Third, in terms of international watercourse law, the Framework of Hydro-hegemony may have a somewhat narrow range of applicability. This notion stems from a basic “three case” model in which properly consenting States “self-execute” treaty obligations and accomplish acceptable and equitable water use, whereas unreasonable States resort to war to gain a share of water. There is a ‘lacuna’ in the law between these two extremes. To date, these “severe cases” have essentially determined the legislation on shared waterways. It may, however, be feasible to establish new and more effective legal duty and remedy regimes, as well as to address the most likely instances in which inequitable water-sharing occurs (Woodhouse & Warner, 2018).

CHAPTER TWO

2. HYDROPOLITICS OF TRANSBOUNDARY RIVER BASINS

2.1. How Water Turns Political

Water resource management is sometimes referred to be a “wicked problem” that defies simple solutions. It’s so because there are unknown dimensions to natural resource science. Furthermore, there are several stakeholders with a variety of values in water resource management, making decision-making complex (Smith & Porter, 2010). International transboundary river basin management is a particularly difficult subject because these rivers are shared by two or more sovereign governments, making the decision-making process even more difficult. Rivers provide much of the water for human use, and there are 276 international transboundary river basins worldwide (De Stefano et al., 2012). Many of the world’s river basins have already been over-exploited as important supplies of fresh water, causing concerns about water scarcity and reduced economic activity (2030 Water Resources Group 2009). Scientists have warned that if concerns about river biodiversity and human livelihoods are not thoroughly understood and addressed with suitable measures, conflict could arise (Vörösmarty et al., 2010: 560).

There are global calls for water cooperation to address this vexing situation. Between 2005 and 2015, the United Nations International Decade for Action “Water for Life” promoted water cooperation as one of the primary issues. The initiative’s multiple policy papers and public awareness initiatives claim that cooperation improves water resource use efficiency, spurs regional cooperation, and provides broader political benefits, not just on water concerns (UN Water, 2013). With growing concern about the effects of climate change in international transboundary river basins, collaboration is being promoted as a key tool for mitigating those effects and achieving development goals (World Bank). With growing concern about the effects of climate change in international transboundary river basins, collaboration is being promoted as a key tool for limiting such effects and achieving development goals (World Bank, 2010). “The inevitable reality that water resources do not respect political boundaries demonstrates the supranational characteristics of water, and makes a compelling case for international collaboration on water management,” according to a state-of-the-art report by UN agencies (WWAP, 2012: 32). International transboundary river basins, according to the authors of these publications and proponents of global appeals, appear to be the epitome of cooperation.

This concentration on international transboundary river basin cooperation, however, can be questioned. The necessity of cooperation appears to hide the ugliness and complication of dealing with these shared waters. The Nile Basin Initiative, an organisation established amongst ten basin governments, is said to have made cooperation on the Nile a *de facto* issue: “nobody in the basin any longer doubts whether cooperation on the Nile is necessary, desirable, or possible.” Rather, the discussion has switched to how to foster and accelerate it’ (Seid et al. 2013: 37). But what does cooperation entail for the states of the basin? What exactly does “Nile cooperation” entail? The relationship between Ethiopia, which is building the Grand Ethiopian Renaissance Dam, and Egypt, which lies downstream, raises some fascinating considerations about collaboration principles. The dam is a chance for Ethiopia’s economic development, signifying the country’s ambition and prowess in the area (Wuilbercq, 2014). The dam poses national security problems for Egypt based on the notion that “if Egypt is the Nile’s gift, then the Nile is a gift to Egypt” (BBC, 2013). Negotiations regarding downstream water supply and environmental impacts have halted in this bilateral partnership (Al Jazeera, 2014). In 2013, the matter erupted, with Egypt’s prime minister citing the pouring of blood over water (George 2013). Unlike the notion that collaboration is unquestionable, the political reality presents a complex situation in which the distinction between whether and how cooperation will occur is not so clear.

Though there are appeals for cooperation in international transboundary river basins, it is important to consider the disparity in the number of these rivers, and the level of institutionalization attained. The 276 international transboundary river basins are shared by 148 sovereign governments, and more than 2.7 billion people rely on their waters (De Stefano et al., 2012: 198). There is no acute militarized confrontation amongst basin states (Yoffe et al., 2003). Rather, between 1820 and 2007, roughly 688 international transboundary river agreements, modification documents, and protocols were signed. Despite a large number of agreements, only about half of the international transboundary river basins have signed agreements. Treaties governing the entire basin region are in the minority in basins with three or more sovereign nations, whereas treaties governing only a portion of the basin area are in the minority (Giordano et al., 2014). Rather than asking how cooperation may be improved, it is vital first to comprehend what happens when there is no overt dispute, but agreements are being signed, even if the scope of cooperation is limited by the number of formal treaties.

Only a partial picture of how water becomes political may be obtained by examining water conflict or collaboration. As the media has done, the aforementioned case between Ethiopia and Egypt cannot be simply and sensationally portrayed as a “water war” (Schwartzstein, 2013). Instead, the project exemplifies how diplomatic confrontation over inflammatory statements coexists with talks over project details in an attempt to sustain and challenge Nile water use and

allocation. Laos, Thailand, Cambodia, and Vietnam have been praised for reaching a water deal based on sustainable development principles and establishing the Mekong River Commission (MRC) in the lower Mekong River basin. However, the agreement's implementation has been contentious, demonstrating how conflict coexists with the MRC mission's cooperative approach. The four states lacked agreement on basin development plans, which was exacerbated by the MRC's institutional limitations and uncertainty among the development agencies that funded it (MRC, 2013: 35–36). This mix of conflict and collaboration, according to a critical analyst, explains how riparian connections are not given and are shaped by a variety of circumstances that form aspirations of basin development and water cooperation.

Moreover, Mehta (2010) argued that “scarcity” could be used to legitimize specific solutions, such as technology innovation and fixes, through discursive framing. These manifestations of scarcity reveal state authority in the form of policies and institutions designed to manage “crisis,” reinforcing Michel Foucault’s concept of governmentality (Mehta, 2010). The consequence of governmentality is that the state gains control of society through discourses about water shortage, but not in an openly top-down manner, but rather through a more widespread approach (Foucault, 1991). Building additional and “better” dams to address water scarcity, on the other hand, may merely worsen the rate of water abstraction beyond ecological limits, resulting in lost livelihoods and other socio-economic difficulties. In fact, scarcity has become such a hegemonic idea that many stakeholders regard it as “nearly universally applicable to the water-related concerns of the twenty-first century” (Sneddon, 2013: 17). Trotter (2003) correctly observes that there are decision-makers who benefit from the “water war” discourse based on such scarcity conceptions because it consolidates their political power and favours their objectives. She went on to say that cooperation expressed as “water peace” may be used to suit one’s own interests, making it a hegemonic idea.

As a result, it becomes clear that water is not a political issue in and of itself. Water is not political by default, and it is not always about conflict, as Warner & Wegerich (2010) pointed out. They stressed that water shortage, oversupply, and deteriorated water quality frequently lead to conflict, resulting in water politics. Those with a vested interest in international transboundary river basin management projects oppose naturalized, universalized, and hegemonized viewpoints of scarcity, abundance, and other problems linked to water resources. According to Minamuchi (2015), the politics of water reflects discourses of water as a threat, opportunity, or even a non-issue, allowing for both conflict and collaboration to coexist within state interactions. The socio-political process that strives to define the answers and means to manage water scarcity, abundance, degradation, and environmental stewardship, rather than the physical state of the river basin, is what causes conflict and collaboration.

2.2. International Water Law doctrines

Despite the fact that there are over 300 significant transboundary river basins, no international legislation governs water sharing among riparian countries (Just & Netanyahu, 1998: 12). As stated in Article 1 paragraph 1 of the UN Charter, the United Nations is responsible for maintaining peace and security on a global scale. The UN and its bodies devised a customary international water law to achieve this goal, with the two most well-known international legal instruments dealing with shared water courses being the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses of 1997 and the Helsinki Rules on the Uses of the Waters of International Rivers and Comments of 1966.

This section of the study looks at the importance of international water law principles in controlling the peace and security of sovereign states that share transboundary water resources. The relationship between international water law concepts and hydro-hegemony will be investigated. There are numerous reasons for including these international water law topics in this section of the study. To begin with, most of these concepts are used extensively throughout this study, giving the reader clues and a better grasp of these international water law-governing ideas. Second, because this thesis is under a hydro-hegemony framework, we shall see how the contending states (especially Ethiopia and Egypt) employ these concepts to assert their water-sharing rights.

International water law is a branch of public international law that addresses the non-navigational utilization of international watercourses. In other words, the term refers to the legal rules that govern the use of shared water resources by two or more countries. The primary goal of international water law is to “... define a state’s entitlement to the advantages of the watercourse (substantive rules) and to create specific conditions for states’ conduct while growing the resource (procedural rules)” (Vinogradov et al., 2003: 12). The basic tenets and concepts of international law, such as sovereign equality of states, non-interference in matters of exclusive national jurisdiction, responsibility for breach of state’s international obligations, and peaceful settlement of international disputes, equally operate and extend to international waters law as an integral part of public international law. The core principles of international water law are: “equitable and reasonable usage” of water resources located on the state’s territory and a correlative responsibility to safeguard similar rights enjoyed by co-basin nations, often known as the principle of inflicting “no harm” to other riparians. International law provides certain criteria for “equitable and reasonable” distributions in the absence of any broad enforcement mechanism or international agreement. An attempt by the Institute of International Law (IDI) (an authoritative professional body of international attorneys) to combine these concepts could not have been realized

since 1911. However, the International Law Association (ILA), a professional non-governmental organization founded in 1873 for the purpose of “study, elucidation, and advancement of international law,” codified these keystone principles in Article IV of the Helsinki Rules on the Uses of the Waters of International Rivers of 1966. The Helsinki Regulations and Draft Articles on the Law of Non-Navigational Uses of International Water Courses, which are not binding but offer a foundation for legal rules, are the most prominent papers connected to transboundary rivers (Just & Netanyahu, 1998: 7). According to the Helsinki Rules, each basin state has a reasonable and equitable share of the beneficial uses of an international drainage basin’s water inside its territory. If the individual states disagree about the scope of their right of use, the dispute shall be resolved on the basis of equity, taking into account the states’ distinct requirements as well as any other relevant facts in each case. Each state may progress with projects or use of a river or hydrology that may have an impact on other states’ ability to use the same waters, provided that those states receive the benefits to which they are entitled under Article III, as well as recompense for any losses or damages incurred (Allan & Mallat, 1995: 42-43).

Similar criteria can be found in the Draft Articles, which were accepted by the International Law Commission in 1994. “... (Article 5) ... (1) Watercourse states must use an international watercourse in an equitable and reasonable manner in their respective areas. An international watercourse, in particular, must be exploited and developed by watercourse states in order to achieve optimal utilization and advantages while maintaining proper protection in the watercourse. (2) Watercourse states must participate in a fair and reasonable way in the use, development, and protection of an international watercourse. As stated in the present provisions, such involvement encompasses both the right to use the watercourse and the obligation to help in its protection and development. (Article 7). Watercourse states must utilize an international watercourse in such a manner that other watercourse states are not harmed significantly” (Allan & Mallat, 1995: 64-65).

However, the guidelines lack any enforcement ability over relevant countries due to the ambiguous definition of “fair and equitable portions.” Although Article V uses multiple additional elements to clarify the stated ‘reasonable and equitable share’ in Article IV, it is also unclear because the proportional weight of each criterion is not explicitly specified (Dinar & Wolf, 1994: 80). This means that each right holder determines his or her chosen factors in terms of personal gain. The following is a list of all the factors in Article V:

“1. The basin’s geography, particularly the extent of the drainage region within each basin State’s territory; 2. The basin’s hydrology, particularly the contribution of water by each basin State; 3. Climate change in the basin; 4. The basin’s history and current use of its waters; 5. Each basin State’s economic and social demands; 6. Each basin State’s population depends on the basin’s

waters; 7. The relative costs of alternative means of meeting each basin State's economic and social needs; 8. The availability of other resources; 9. The avoidance of unnecessary waste in the basin's water use; 10. The practicality of compensating one or more co-basin States as a means of resolving conflicts among uses; and 11. The degree to which a basin State's needs can be met without causing significant harm to a co-basin State."

2.2.1. Principles and Practices

The main principles and foundations of general international law are intended to explain how international water law functions in the global context. Shaw (2003) defines general international law as "a set of universally applicable principles and regulations guiding the conduct and interactions of states". International law guides the actions and omissions of states and international organizations in their day-to-day dealings. Furthermore, the basic goal of international law has been to maintain peace and security by accommodating the interests of current international life. Its mandate also includes "the control of space expeditions, the topic of ocean floor division, and the preservation of human rights, as well as the regulation of the global financial system." (Shaw, 2003: 43). As a result, we can deduce that international law covers the regulation of transboundary rivers' water use state activities.

The gap between international and domestic law resides in their legal subjects: in international law, the subjects are states, whereas, in domestic law, the subjects are persons. Their disparity also extends to the governmental entities through which laws are passed, entertained, and implemented. In the case of international law, no single authority is responsible for enacting, interpreting, and enforcing the laws, whereas domestic law has its own well-organized legislature, judicial, and executive organizations in sovereign states. As a result, identifying the laws of international law when competing for sovereign states' interests conflict is difficult, and this adds to the uncertainty. The existence of international law and its "sources," on the other hand, is undeniable.

The Permanent Court of International Justice (PCIJ), a quasi-judicial body of the United Nations, was created in The Hague in 1921 and was succeeded by the International Court of Justice (ICJ) in 1946. Article 38(1) of the Statute of this UN instrument specifies the source of international law that the court may consider in entertaining issues such as: "(a) International conventions, whether general or specific, establishing rules expressly recognized by the contesting states; (b) international custom, as evidence of a general practice accepted as law; (c) general principles of

law recognized by civilized nations; and (d) subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as secondary means for determining legal rules.” (Malanczuk, 2002: 35).

As a result, the source of international law includes rules that have been created for long and established through interstate contacts and practices. Till recent times, the principles of customary (or unwritten) law were the most commonly used source of international law. The law arose from the behaviours of states, principally where there are no formal or written agreements between them. These forms of state practices become binding customary law; there must be a “demonstrable general and widespread practice that demonstrates that the states regard this rule controlling their particular actions”. The principle of the equitable and reasonable use of water resources in international water law began as standards of customary international law. International customary law is marked by imprecision and is frequently vulnerable to competing interpretations. Because of this absurdity, international customary laws are insufficient to address the increasingly complex and multidimensional instances that are common in today’s state interactions (Vinogradov et al., 2003: 9-10).

Over the last half-century, governments and the international community as a whole have codified and developed customary international norms as a matter of course. Today, international treaties specify state rights and obligations more than international customary law. International treaties include international conventions, agreements, protocols, charters, accords, and statutes that bind state parties (Brownlie, 2003: 11). In terms of clarity, precision, accessibility, and the ability to deal with issues of a highly technical nature, international treaties have several advantages over customary standards. A state is bound by a treaty that expresses its consent, according to international law. Treaties can be bilateral (between two state parties), multilateral (more than two state parties) with limited participation (available for signature by a limited number of nations), or universal (open for signature by all countries) (open for participation by all states). Another thing worth addressing here is the international law precept known as *pacta sunt servanda*, which is found in both international customary law and the UN Charter, and this principle requires all nations to honour the agreements they make. Its moral foundation stems from the tenet that international agreements are legally obligatory and must be carried out in good faith. All issues arising from the implementation, interpretation, or breach of an agreement must be handled peacefully through a variety of dispute resolution methods accessible to governments, both diplomatic (negotiation, mediation, fact-finding and investigation, conciliation, and so on) and legal (adjudication and arbitration) (Vinogradov et al., 2003: 9-11).

Furthermore, where there is a legal void and customary rules and treaties are insufficient to determine the respective rights and responsibilities of nations, basic principles of law could be used as an additional source of international law to determine the respective rights and obligations of states. The genesis of general principles of law is the national practice of the majority of legal systems around the world, and they include universally accepted laws such as the banning of slavery and the principle of good faith. International court and arbitral tribunal decisions, as well as legal theories (the teachings of various nations' "most highly trained publicists"), are used to define the applicable principles of law and are acknowledged as "subsidiary" sources of international law (Malanczuk, 2002: 53).

Under international law, two yardsticks must be met in order to determine whether a state is accountable for a law violation. There must be an action or omission attributable to the state, as well as an identified breach of one of the recognizable international laws mentioned above. Finally, under its other branch of the legal system, international treaties play an important role in regulating state disagreements and interactions sharing transboundary rivers.

In recent times the safety and use of common watercourses have been overseen by several fundamental principles which are entrenched in broader international law, as well as two global legal instruments that establish wider cooperation contexts for transboundary river basins—the UN Watercourses Convention of 1997 and the UNECE Water Convention of 1992—and also the substantial legal philosophy of the International Court of Justice and other global tribunals and courts (Salman, 2009). The vast majority of everyday cross-border water administration, on the other hand, is governed by a massive build of the regional, basin, and bilateral agreements that govern riparian relations at varying stages of detail. Admittedly, the latter serves as the true basis of transboundary hydro cooperation, as the rather general essence of the global water law, combined with the lack of a comprehensive supranational enforcement framework, frequently creates situations in which the solemn principles enshrined in UN conventions provide very little guidance for states to regulate intricate intra-basin relationships (Delli Priscoli and Wolf, 2009).

Scholars appear to agree that present international watercourse law is founded on three key principles, which are reasonable and equitable use, the prevention of severe (transboundary) harm, and advance notification of planned measures. While there is no formal ranking among these principles, some scholars believe that the equitable and reasonable use concept is prominent in the law of international water (McCaffrey, 2015).

In the early periods of extreme doctrine, over the last two centuries, contrasting ideas on state behaviour regarding the allowable brim of sovereign action on shared natural resources brought about today's international rules and laws of water. The initial of such a basic principle is

the so-called “absolute territorial sovereignty” doctrine, sometimes known as the “Harmon” doctrine. It advocates for a state’s complete freedom to utilize the waters of transnational rivers running over its territory, implying that nations are not subject to any global legal duties regarding such water resources (Dinar, 2008). This means that, because the global river is completely public in the state in question, it is free to dispose of the water in its territory in any way it sees proper. As a result, a lower riparian cannot demand that higher basin governments continue to provide a free and uninterrupted flow of water. Historically, upstream regional powers have advocated the absolute sovereignty idea in defence of an unrestricted hand method over their segment of global waters (Allouche, 2005). “Absolute territorial integrity” is the name of the second concept. In contrast to the preceding one, it favours downstream nations by establishing the right to seek the persistence of an international river’s natural flow into their borders. This type of demand is frequently tied to historical appropriations. This theory, like the Harmon-doctrine, has been appropriately criticized for allocating rights without daunting commensurate obligations in favour of one-sided lower basin countries(Allouche, 2005).

Although a few states remain advocating for the two extreme concepts in order to justify their hegemonic use of complex international river systems (for instance, The claim of Turkey over utter territorial sovereignty on the state’s parts of the Euphrates and Tigris waters or the claim of Egypt on momentous sharing), current states practice and general global water law have consistently rejected them (Salman, 2009).

Towards the moderate principle, the “limited territorial sovereignty/integrity” theory, the third initial perception of transboundary water governance, restrains the excesses of the previous principles by arguing that every riparian has an equal right to use an international watercourse. Simultaneously, all governments in the basin have a responsibility to avoid causing considerable harm to their neighbours (Allouche, 2005). The restricted territorial sovereignty/integrity idea has received the most widespread support of all the early concepts because it includes the values of rational usage, no-harm, and cooperation, which are the bedrock of the present global water law.

The concept of a “community of riparian states” must also be mentioned. Global water basins are envisioned as vastly linked and cooperative societies of countries in which the advantages and liabilities of managing a shared resource are not divided along a crude downstream-upstream divide. Instead, basin countries are anticipated to work together over a variety of water regulation concerns in order to maximize the river’s collective welfare (Allouche, 2005). The Permanent Court of International Justice gave the concept a primary authoritative sanction in 1929. Notwithstanding its uncompromising approach, the theory acquired further backing from the

International Court of Justice in 1997 in the Gabckovo-Nagymaros case, where the ICJ recognize the “community of interest” concept’s validity for all usages of global rivers. Other scholars suggest that the EU’s basic water policy, the Water Framework Directive, reflects this “community ethos” of riparian nations (Moellenkamp, 2007).

As previously stated, three principles underpin the international water law of today: reasonable and equitable use of shared watercourses, avoidance of major harm (the “no-harm” criterion), and earlier disclosure and discussion of premeditated transboundary actions. The UN Watercourses Convention is the clearest legal manifestation of these ideas.

The legal principle of water talked about above, of course, is not existing independently but rather as a fragment of the body of public international law. As a result, the fundamental principles of co-riparian interactions must be applied in tandem with a set of core rules controlling interstate behaviour under the United Nations Charter. The principle of good neighbourliness, the commitment to promote peace and security, the duty to collaborate, the requirement to resolve disputes by peaceful methods, and the notion of the “rule of law” are only a few examples (Wouters 2013). Furthermore, peremptory international law standards, such as those dealing with human rights protection, humanitarian emergencies, and self-determination, apply to the administration of shared basins (Bruhács, 2011). Lastly, some fundamental environmental law ideas, such as the precautionary principle, the polluter pays principle, and the sustainability principle, are complemented by international water law.

2.2.2. Legal Instrument

International water treaties may be traced back to 2500 BC, when the two Sumerian city-states of Lagash and Umma negotiated an agreement to settle a water dispute along the Tigris River. More than 3,600 treaties have been drafted since then. The vast majority of these treaties and accords dealt with navigation and boundary delineation. However, in the recent century, the emphasis on negotiation and agreement has switched to the use, development, protection, and management of water resources (UNDP, 2006).

The international community’s acknowledgement of the relevance of bilateral, regional, and multilateral legal frameworks has enabled the signing of a number of treaties, protocols, and conventions on the use, development, and protection of transboundary watercourses and related ecosystems (Heyns, 2002: 6-16). The 1976 Rhine Convention on the Prevention of Chemical Pollution and the Rhine Convention on the Protection of the Rhine against Chloride Pollution, the 2010 CFA in the Nile Basin, the 1960 Indus Water Treaty, the 1991 Pakistan Water Apportionment

Accord, the 1995 Mekong River Basin Cooperation Agreement, and the 1995 Protocol on Shared Watercourse Systems in the Southern African Development Community Region are just a few examples.

2.2.2.1. In Search of a Legal Regime for the Nile

The Nile's water utilization regime serves as a useful instance of both success and failure in efforts to manage a shared watercourse effectively (Dellapenna, 2006: 296). No other treaty system for a comparable-sized international watercourse, arguably, stands in such striking contradiction to international water law principles as that for the Nile (Makonnen, 2010: 431). There has never been a Nile treaty that includes all Nile riparian states to date, as mentioned previously. The Nile's legal framework is primarily comprised of two treaties: the 1929 Sharing of Letters Between His Majesty's Government in the United Kingdom and the Government of Egypt Regarding using River Nile's Water for Irrigation Purposes; (League of Nations Treaty Series 1929- 1930: 44), and the Agreement Between the Republic of Sudan of 1959 and the United Arab Republic for the Complete Use of the Nile Waters. Egypt and Sudan embraced these treaties, while the other nine riparian governments opposed them (Egypt and Sudan believe they have "acquired and historical rights" in Arabic, *huquq mukassaba wa- tirihiyya* to given Nile water shares based on current use and confirmed in Nile water treaties. The upstream states disagree with this assessment and are asking that a new basin-wide accord be reached (Mahfuz, 2009).

The attitudes of the riparian states have been profoundly informed by advances in global water law, particularly the passage of the UN Watercourses Convention (Kaska, 2006: 92). These innovations have both hampered and facilitated inter-state collaboration. On the other extreme, the open and partially contradictory ideas and concepts of international water law have historically led to the hardening of the Nile riparian states' competitive postures. For a long time, the ambiguity of its two seemingly contradictory main principles—equitable and fair usage and the no-harm rule—actually made it possible for states to build their stances on one-sided justifications. Recent changes in international water law, on the other hand, appear to be fuelling a new cooperative spirit in relations amongst Nile riparian states after helping to reframe their interests. Hydropolitics in the Nile Basin, which had previously been defined by unilateral acts, have thus experienced significant change since the 1990s. Now, Nile riparian states are attempting to collaborate across the whole Nile Basin on the basis of a new, more balanced usage regime that is more closely consistent with international water law. They established the Nile Basin Initiative (NBI) in 1999, ushering in a new chapter in their relationship, which some observers have interpreted as a shift from competition to cooperation. Despite the fact that the NBI was only constituted as a temporary agency without a

founding treaty, it was a significant step forward for the Nile riparian states. That was the first time that all Nile riparian governments had shown a readiness to collaborate (Brunnee & Toope, 2007). For the first time, they underlined the notion of fair Nile utilization in their joint vision for the NBI (Nile Shared Vision, 2019).

More to this achievement, the riparian states have begun to construct a Nile framework agreement. This occurred at the same time that the United Nations General Assembly passed the UN Watercourses Convention in 1997. According to Egyptian critics, the passage of the UN Watercourses Convention was a key driving force behind the Nile riparian states beginning fruitful conversations with one another (Abd al-Al, 2010: 102). The efforts of those governments resulted in the approval in 2010 of the Agreement on the Nile River Basin Cooperative Framework (Cooperative Framework Agreement, CFA), which was signed by 5 of the 11 riparian states at the initial stages, and six other states in later stages. In 2013, Ethiopia signed the CFA as the first state, accompanied by Tanzania and Rwanda (NBI), whilst Sudan and Egypt declined to join. The riparian states so far have been unable to come to a consensus because of disagreements surrounding the current Nile agreements and safeguarding the present usage and the projected implementation of a mandatory notice mechanism for strategic events.

Despite these continued grounds of dispute, the CFA drafting process signifies the initial collective effort by the Nile riparian countries to reach an agreement managing the Nile's use. The agreement aims to create a completely fresh outline for the sharing and use of Nile water. Several articles in the Agreements are nearly exact derived from the UN Watercourses Convention, particularly the ones dealing with key global water law concepts such as impartial and fair use and the no-harm criterion. These Nile riparian states, however, denounced and rejected the UN Watercourses Convention when it was enacted in 1997, and none of them has ratified or signed it as of yet. Nonetheless, it has had a substantial impact on the writing of the Nile accord (Mahfuz, 2009: 327–339)

The political landscape along the Nile has evolved dramatically since the CFA was available for signature in May 2010. Egypt's Hosni Mubarak, whose position opposed the treaty, was ousted and retired in February 2011 as a result of unrest during the Arab Spring (Mangu, 2011). Shortly after, Ethiopia began building the GERD on their part of the Nile, around forty km from the Sudanese boundary. Later, in July of the same year, South Sudan broke apart from the Sudanese state, which made it yet another Nile riparian nation.

South Sudan's independence has ushered in fresh dynamics, as this advances questions about how water will be divided among the new South Sudanese state and Sudanese state and

Egypt, also if the Nile water agreements earlier signed by Sudan will continue to apply to South Sudan on the other. Paul Mayom Akech, Minister of Water Resources of South Sudan Resources, renounced any responsibilities under the 1959 Nile Waters Accord in 2013 said that their nation had been planning to ink the CFA (Amos, 2013).

South Sudan was apparently signalling its intent to support the upstream riparian countries on the Nile issue. The building of Ethiopia's Renaissance Dam sparked major political problems with Egypt and Sudan. The three states agreed in 2011 to form an international panel of experts to investigate the dam's effects on the Blue Nile's downstream flow, and the group's conclusion was released in 2013 (Salman, 2013). Whereas Egypt found the findings of the report on the dam's predicted consequences unsatisfactory and requested more research, Ethiopia continued to build. Egypt has spoken of a "Nile water crisis" as a result of these changes, describing it as one of the country's most significant concerns. Egypt accused Ethiopia of failing to uphold its contractual responsibilities, which date back to a 1902 treaty (Wehling, 2020: 9).

Since taking office in 2014, President Abdel Fattah el-Sisi has pursued a strategy of conciliation with the rest of the riparian countries, emphasizing the necessity of tight collaboration founded on common trust, particularly with the Ethiopian state treaty (Wehling, 2020: 10). He began talks with Ethiopia, which gave birth to agreements between Sudan, Egypt, and Ethiopia in March 2015 that established broad values for the building and operation of the Renaissance Dam (Asharq Al-Awsat, 2015). In a significant departure from prior Nile water accords, the agreement is founded on the principles of collaboration, impartial and judicious use, and the no-harm norm, which is all taken directly from the CFA (Wehling, 2020). Unlike Egypt's earlier demands, this treaty did not contain any measures ensuring complete protection of current usages and rights.

An impact assessment for the Renaissance Dam was commissioned due to the trilateral agreement of 2015. After the announcement of the evaluation report, the three states quickly assembled for a sequence of discussions but then again were not able to reach an agreement on the findings of the report, and Egypt called the talks a failure in 2017 (Al-Monitor, 2017). The three states founded the National Independent Scientific Research Group (NISRG) in 2018 to bring together scientists from their nations. Although the NISRG process did not result in concluding any agreements among them, its procedural findings served as the foundation for later discussions over the dam's first filling and long-term operations (Elbahi, 2021). These three countries resumed negotiations in November 2019 with the help of the US and the World Bank to obtain an agreement on the conditions for the filling and functioning of the GERD that does not still address the usage and governance of the Nile generally. In the meantime, works on the disputed dam, which was

supposed to be finished by 2017, have been pushed back to 2022. With observers like the United States government, the World Bank, and the European Union, the African Union launched and held fresh discussions between Egypt, Ethiopia and Sudan, beginning in June 2020 (USDT, 2020). Even still, at the time this thesis was being written, no agreement had been reached (Spring, 2022). The principal contentious issues among the riparians are (1) the span of the agreement, i.e., whether that's a provisional or long-lasting agreement; (2) the relationship between the GERD accord and future water infrastructure projects in Ethiopia; (3) the connection between the GERD accord and a reliable water distribution accord among the Nile Basin riparians; and (4) the techniques for resolving future conflicts (Elbahi, 2021).

Notwithstanding its stalemate, the negotiations between Egypt, Sudan, and Ethiopia give reason to believe that negotiations on the CFA will resume between all Nile riparian states. The present problem for Nile riparian governments is to come up with a long-term legislative and institutional framework for the Nile's exploitation and management that they can all agree on. There is, in fact, broad agreement among them on this subject. They might then turn the guiding principle of equitable and reasonable consumption into a fair distribution of water uses and shared management decisions using such a framework (Dellapenna, 2006).

2.2.3. Water Courses convention of the UN

Since 2014, governments have had access to two multilateral agreements that offer essential frameworks for transboundary water cooperation: the UN Watercourses Convention of 1997 and the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (UNECE Water Convention). Although the two instruments basically cover the same topics, they use slightly different techniques (McCaffrey, 2016).

The United Nations Watercourses Convention came after twenty years of study and systematisation by the International Law Commission of the United Nations. The scheme that led to the Convention began in the 1970s and ended in 1997 with the UN General Assembly's acceptance of the Convention texts. The Convention has been widely regarded as an authentic definition of international law principles relating to non-navigational uses of international watercourses (McCaffrey, 2015), and it was immediately endorsed by the International Court of Justice in the aforementioned *Gabckovo Nagymaros* case. Despite the lengthy preparatory period, it took another 17 years to collect enough ratifications to trigger the treaty's entry into effect. The Convention's *fil conducteur* is the "combination of the principles of equitable and reasonable use, on the one hand, and prevention of major harm, on the other" (McCaffrey, 2015).

The Convention's codification of the principle of equitable and reasonable usage entails a wide variety of requirements (Art. 5.). To begin with, transboundary rivers must be used and developed "with a view to achieving optimal and sustainable utilization and benefits therefrom," while also taking into account the interests of neighbouring riparian countries. Second, the idea incorporates both the freedom of states to use the common river and their need to work together to conserve it. The Convention also lays forth the essential considerations that must be made when considering whether a specific use is equitable and reasonable (Art. 6.1.). Significantly, no conventional hierarchy exists among contending water users; nonetheless, in the event of a dispute, special attention must be made to "requirements of vital human needs" (Art. 10.).

The so-called "no-harm" rule, which originated from the Roman law maxim of *sic utero tuo ut alicui non laedes*, is the other major concept of international water law entrenched in the Convention. It means that governments that use their part of the global watercourse must take all reasonable precautions to avoid inflicting major harm to other riparian states. If such harm is nonetheless caused, all necessary steps must be taken to prevent or alleviate it (Art. 7.). The "no harm" policy is not a one-way street. It entails basin states' ongoing, long-term, proactive, and anticipatory participation to avoid not just large-scale and obvious catastrophes but as well the "accumulation of minor and isolated changes in water quality and quantity" that could have unanticipated negative consequences (Tanzi & Kolliopoulos, 2015). (Clearly, such a forward-thinking reading increases the bar for due diligence far beyond the Trail Smelter Arbitration's original formulation, which only required the evasion of "injuries [...] to the territory of another [...]" when the incident is of significant repercussions and the injury is founded by substantial evidence," (Rieu-Clarke et al., 2012).

The Convention also outlines states' responsibilities to cooperate on strategic measures that may have a considerable detrimental bearing on other riparian countries, as well as procedures such as prior notification and consultation (Art. 11-19). Actually, the Convention tackles this responsibility in the same way as the others, dedicating more provisions to it than any further problem in the whole text (McCaffrey, 2015).

Aside from the aforementioned fundamental principles, the Convention establishes basic standards for preventing and controlling pollution as well as the guard of marine and riverine ecosystems (Art. 20–23). Lastly, the Convention establishes specific processes for resolving disputes. Transboundary water issues must be settled serenely jointly or with the engagement of a third party, such as through good offices, mediation, or conciliation, among other methods. The option for any party to initiate the necessary process of a fact-finding committee with

comprehensive fact-finding powers is a unique element of the Convention. While the procedure's decision is not legally binding, the commission's operation is a significant step toward mandating third-party conflict resolution (Tanzi and Contartese, 2015). Regardless of whether or not these extrajudicial methods are used, the parties can always take their disagreement to the International Court of Justice or an arbitral tribunal (Art. 33., Annex). However, the fact that the Convention makes a sharp separation between the internal domain of water management and the transboundary component, this, confronts the everyday watermanagement experience (Conca, 2006).

2.3. Transboundary Hydropolitics

Rivers that exceed global boundaries are called "international rivers" by some scholars, while others refer to them as "transboundary rivers" by others. Neither concepts without problems (for a debate, see Sadoff and Grey (2002)). To others, the term "international" is misleading because it indicates that the waters fit in no one country, but in fact, only the basin governments have rights to the water. Several river conduits form global boundaries without passing through them; therefore, some may be perplexed by the term "transboundary rivers." Rivers that span intra-state boundaries, as well as global borders, are referred to as transboundary.

To make matters even more muddled, these phrases have political overtones, meaning that some governments may choose one over the other if it serves their interests. A boundary waterbody is distinguished from a transboundary waterbody that crosses the border by Turkey, which is an upstream riparian in the Tigris/Euphrates basin. This distinction is useful because it allows the Turkish state to claim ownership over the Euphrates/Tigris waterway within its boundaries. The Iraqi, a downstream riparian state in this basin, opposes the usage of the phrase "transboundary river" and demands that it be removed from legal texts wherever it appears. Syria, which is in the middle of both the Euphrates and the Tigris rivers, claims that the former is an international river whereas the latter is not (though the Orontes hits Turkey and Lebanon too). This ambiguous stance is explained by Syria's refusal to recognize Turkish control of Alexandria, where the Orontes water meets the Mediterranean Sea (Yetim, 2002).

Wolf et al. (1999), which provides an apprising of the 1978 UN Register of Transnational Rivers, is the finest basis of statistics on global river basins. A river basin is described as "the area that contributes hydrologically (including both surface and groundwater) to a first order stream, which is defined by its exit to the ocean, a terminal (closed) lake, or an inland sea." If "any perennial tributary crosses the political boundaries of two or more nations," the basin is considered international. According to this definition, the world's 261 international river basins cover 45.3% of the planet's land surface (excluding Antarctica). Only two countries share around two-thirds of all

transnational river basins. River basins that are used by many nations like the Danube (17), Congo (11), Niger (11), Nile (10), Rhine (9), Zambezi (9), Amazon (8), and Lake Chad (8), are so special.

It's worth noting that a transboundary river can exist within an international river basin. An example is the greatest way to demonstrate this. The Kyrgyz Republic, Tajikistan, Afghanistan, Uzbekistan, Turkmenistan, and Kazakhstan are the six countries that share the Aral Sea basin. The Amu Darya (used by Afghanistan, Tajikistan, Uzbekistan, and Turkmenistan) and the Syr Darya (shared by Afghanistan, Tajikistan, Uzbekistan, and Turkmenistan) are the two primary transboundary rivers that feed the Aral Sea (The Kyrgyz Republic, Tajikistan, Uzbekistan and Kazakhstan). In addition, the Aral Sea basin contains a number of minor transboundary rivers, such as the Chui and Talas rivers, which are shared by the Kyrgyz Republic and Kazakhstan.

Numerous instances of the shared freshwater resource being converted into different forms of commodities exist. Centuries earlier, organized states were built in alluvial river basins like the Mekong, the Euphrates, Indus the Nile, basins, where robust mechanisms for regulating irrigation, navigation, and flood and drought hazards were developed (Sadoff & Grey, 2002: 391–392). In such countries, regulating common waters as a public benefit by a highly centralized state placed a high value on hydraulic authority over waterways, a circumstance Wittfogel (1957) refers to as “hydraulic monopoly.” Furthermore, pastoral groups that rely on rainfall or groundwater provide a historical example of managing freshwater as a club good. Also, pastoral groups that rely on rainfall or groundwater provide a historical example of managing freshwater as a club good. Nevertheless, treating common waters as a private good is sometimes represented in corporations gaining concessions to sell freshwater, which is regulated and priced using market procedures. Whatever shape the shared water resources take, the process necessitates supreme jurisdiction, which can be represented by a governmental authority, a sequestered mediator, or a users' group, and that can only be obtained at the domestic level, not globally.

The unifying aspect of international politics that diverse IR schools of thought have recognized is that independent countries relate with one another in an “anarchic” manner (Reu-Smit, 2005: 190). This demonstrates the lack of an overall authority as well as the absence of stable classified structures akin to those formed at the state and sub-state levels. Because shared water resources are distributed by groupings of sovereign states, the lack of such a regulatory organization adds a new dimension to the difficulty of administering the common in the global river basin. It is demonstrated by the absence of global water courts of law or international water establishments with utmost authority over transboundary water problems (Wolf, 2007: 318). Global water law even offers broad principles and norms rather than specific conflict-resolution procedures and methods (Biswas, 1999: 429), bringing transboundary water interactions under international

anarchy. As a result, the three major schools of thought in IR have taken opposing viewpoints on the implications of such a setup. According to Waltz (1979/2010: 114, 146), the characteristic of international anarchy drives governments to prioritize the exercise of force in gaining relative benefits, resulting in conflicts in a world of finite resources. In water politics, this broad term has been taken by neo-realists, establishing the thesis of “water wars,” particularly in areas where fresh water is rare and desperately required (Gleick, 1993; Starr, 1991).

Institutionalists, on the other hand, emphasize “interdependence” amongst countries and aim to portray it as a driver for cooperation based on shared interests (Nye and Keohane 1972). Furthermore, they claim that global collaboration is possible under anarchy over give-and-take instead of hierarchical interactions, emphasizing the significance of international institutions in supporting state cooperation (Krasner 1983; Keohane, 1984/2005; Axelrod & Keohane, 1985). Scholars in the institutionalist branch of hydropolitics demonstrate how global collaboration over water occurs and takes diverse forms, such as signing water treaties, forming river basin organizations, and conducting joint hydrologic projects through empirical investigation (Delli Priscoli, Wolf, 2009). Several case studies have also demonstrated how water institutions can collaborate on sharing information among riparian states, implementing monitoring schemes, proposing cooperative projects that benefit all parties, and ensuring that the good faith of one riparian on a particular issue will be reciprocated in the future by others (Mostert, 2003; Schmeier, 2013).

In transboundary river basins, shared water resources produce an asymmetric kind of interdependence among riparian governments. It is because of the hydrologic character of transnational rivers that flow through political boundaries, where the watercourse determines the countries that are in the upper or lower basin. Asymmetric implications of each action of riparian states on other states characterize such a setup, which is not always the situation in other joint water bodies like global seas, lakes, and boundary rivers (Ovodenko, 2014). The unequal interdependence, formed by nature, offers upstream governments immense influence gained from their geographic location (Zeitoun & Warner, 2006). Misunderstanding frequently comes up among downstream and upstream states over projects crafted upper the river, particularly large-scale dams and irrigation schemes, either because the upstream state adopts such projects without considering the negative influences formed lower the river or because the downstream state attempts to halt them in any way possible to avoid any possible perils (Scheumann et al., 2014).

The disputed conceptions of extreme rights of water claimed by each side further complicate this upstream-downstream combination. In most situations, the upstream riparian insists on an absolute right of “national sovereignty” to use the waters running through its territory,

whereas the downstream riparian insists on an absolute right of “riverain integrity” to obtain its ancient and attained share of waters without decrease or adjustment (Wolf, 1999: 5-8). These debates regarding “hydrography versus chronology of use” (Delli Priscoli & Wolf 2009: 70) in upstream–extreme downstream water rights have shaped the core principles of “reasonable and equitable use,” “prior notification,” and “causing no significant harm” in international water law. These methods take into account both sides’ rights while also defining the bounds for those absolute concepts by requiring each party to respect the demands and rights of the other (Wolf, 1999: 5). Grounded on this; the downstream countries are advised to use of the watercourse in an impartial manner with other riparian countries while the upstream state, on the other hand, should cause no harm to others and should notify them in earlier in case of any planned or conceived projects. Due to the open and variable interpretations of what constitutes “equitable” sharing and “appreciable” harm, such rules are deemed “broad” and “vague” (Biswas, 1999: 429).

2.3.1. Hydropolitics in Africa

Management of water in African transboundary rivers is a complicated conundrum, including topographical and political variables, national and regional agendas, and often warring factions centred on an unevenly distributed and volatile resource. External partners, who tend to follow a universally agreed normative framework and model for transboundary basin management, are often unaware of the political complexities of transboundary basin management. These best-practice techniques are not well suited to the regional context and frequently fail to inspire transboundary cooperation in practice. Comparative studies of transboundary water management frequently focus on the formal characteristics and “fundamental functions” of basin management as a means of balancing these competing interests. They concentrate on the predominance of specialized water legislation and other formal institutions, as well as international decision-making systems, sometimes confusing institutional form with function. At the same time, African transboundary water governance performance issues are well-documented (Winqvist, 2015; OIEau et al., 2014), and considerably less emphasis has been placed on ‘why’ some of these issues are so hard to overcome.

The number of shared river basins in Sub-Saharan Africa is astounding. The African continent is an abode to 63 of 261 international river basins of the world. There are several interesting incipient methods for water management and shared water resource management here, as well as crisis-prone hotspots. As a result, Sub-Saharan Africa is particularly well positioned to help as a model for identifying both lessons learned and gaps in the execution of transboundary water governance – and drawing approvals from both failures and successes. The frequently noticeably

uneven distribution of water resources in Africa's basins is a characteristic of the continent's hydrogeographic circumstances. Besides water-rich areas, that is, those with abundant precipitation that contributes significantly to the volume of available water resources, there are also low-precipitation regions that contribute fairly little to the overall volume of available water resources and rely on high-precipitation regions for a significant portion of their water. The Nile's upstream riparians are located in high-precipitation zones, whereas Egypt, the downstream riparian, is located in an arid region and is a classic example of this constellation. Because the Nile nexus is the subject matter of this thesis, this section will be given the least attention.

The position on the Zambezi and other southern African river basins is similar. The riparians to the north (Angola, Zambia, the Democratic Republic of Congo, and Mozambique) have rich water resources, whilst the riparians to the south (particularly South Africa (RSA), Botswana, and Namibia) do not. These latter countries rely heavily on water resources produced outside of their boundaries. While the RSA, for example, uses 80% of all water resources used in the SADC region, it only provides 8% to the region's water supplies. A constellation like this inevitably has the potential for conflict.

2.3.1.1. The Zambezi Hydropolitics

The Zambezi River is 3,000 km long. Its basin covers about 1.4 million km². This makes it the continent's fourth-largest river system. The Zambezi has the most riparian countries in Sub-Saharan Africa, with eight – Angola, Botswana, Malawi, Mozambique, Namibia, Tanzania, Zambia, and Zimbabwe. Zambia has the greatest share of the river basin (41%), followed by Angola (18%), Zimbabwe (16%), Mozambique (12%), Malawi (12%), Tanzania (2%), Botswana (1.5%), and Namibia (1.5%). The average annual discharge on the Zambezi is 94,000 million m³. The Luene and Lungoe-Bungo in Angola, the Chobe in Botswana, the Shire in Malawi, the Luinana in Namibia, the Kabompo, Kafue, and Luangwa in Zambia, and the Manyame, Sanyata, and Gwayi in Zimbabwe are its most prominent tributaries. The basin receives between 600 and 1,200 mm of precipitation per year; whereas Angola and Zambia are riparians with significant precipitation levels, Mozambique and Zimbabwe are fairly desert. Malawi and Tanzania are not directly riparian countries on the Zambezi; they are connected to the river via Lake Malawi and the Shire River. Over 40 million people live in the Zambezi River Basin; the majority of them live in Malawi (31%), Zimbabwe (29%), and Zambia (29%). Households, irrigated farmland, mining, power generation, and – to a lesser extent – industry all use the Zambezi's water supplies; the river is also used for fishing and shipping.

The most visible water projects in the basin are several huge dams built to generate electricity, the largest of which are the Kariba Dam (Zambia and Zimbabwe) and the Cahora Bassa Dam (Mozambique), followed by dams on the Victoria Falls, the Kafue River (Kafue Gorge), and the Lunsefwa River (the Mita Dam). In the basin, there are a total of 12 bigger dams (above 15m in height). These waters are being used to irrigate 200,000 to 250,000 hectares of agricultural land (Shela, 2000: 69; Heyns, 2003: 28).

Pressure on water supplies is likely to increase in the future, given the region's relatively rapid population growth (on average, about 3% per year) and the ambitious construction initiatives already ongoing. Angola, the upstream riparian, may be interested in making more use of the Zambezi's resources in the future now that the protracted civil conflict that has prevented any major water-related actions for years has concluded. Botswana and Namibia, which are both upstream riparians, are both water-scarce countries. Namibia aims to expand a sugar-cane irrigation project in the Caprivi Strip, while Botswana plans to use the Zambezi's waters to supply Gaborone, the country's capital (Heyns, 2003: 28). Zimbabwe, which is also a water-scarce country, proposes to use water from the Zambezi to fulfil the city of Bulawayo's water demands (Bulawayo Water Division Project/Matabeleland Zambezi Water Project). 5 Malawi, a country whose territory is almost entirely within the basin, may suffer increased water scarcity in the future due to its population density. Malawi is planning a 40,000-hectare irrigation project on the Shire (Heyns, 2003: 28). Finally, the RSA, which is not a Zambezi riparian, has become involved by expressing interest in supplying water from the Zambezi to the Gauteng region via an IBT system.

Currently, the water supply in the Zambezi Basin far surpasses demand levels (save during recurring droughts that take on the characteristics of natural disasters). As a result, there are now no severe disputes over the Zambezi's waters. It should be highlighted, however, that Angola and Zambia are the only riparian countries that will have enough water in the future. All other riparians are currently or will soon be faced with water scarcity. Given the current state of affairs, future disputes between riparians over water use and allocation are unavoidable. Transboundary water management would thus be the ideal way to meet the demands and boost the welfare of all riparians in terms of both crisis prevention and sustainable development.

2.3.1.2. The Orange-Senqu Hydropolitics

The Orange-Senqu case is one of the transboundary cases in Africa. The Orange River is approximately 2,300 km long. Lesotho (source), the RSA, and Namibia are its immediate riparians (estuary). Botswana also shares the Orange River Basin, which spans about one million km². The RSA owns 60% of the basin, followed by Namibia (25%), Botswana (12%), and Lesotho

(12%). The river's headwaters in Lesotho's northeastern highlands receive a lot of rain (an annual average of 2,000 mm), but the rest of the basin's climate is mostly desert (annual average precipitation of 44 mm). The average annual runoff of Orange (MAR) is 11,000 million m³, with the RSA accounting for 55%, Lesotho for 41%, Namibia for 4%, and Botswana for a minor proportion (Heyns, 2003; Heyns, 2004). The Senqu in Lesotho, the Vaal in South Africa, and the Fish in Namibia are the river's major tributaries.

It is also possible that water from Lesotho could be used to supply Botswana's capital, Gaborone, in the future, giving Botswana a strategic interest in the Orange River Basin, despite the fact that no water flows into the Orange from Botswana and the country makes no use of the Orange at the moment.

The Orange River separates the Republic of South Africa from Namibia. The exact path of the boundary between the two states is causing some issues. The boundary was established in 1890 based on the high water level along the river's northern banks, which meant Namibia had no direct access to the waters of the river. Before independence, Namibia was told that the border would be moved to the middle of the river; however, this promise was not kept, and there have been border disputes ever since. Despite the fact that this situation has tarnished South Africa's reputation in terms of water management, it does not appear to pose a threat to the two nations' relations (Turton et al., 2004: 99–100).

2.3.1.3. The Limpopo Hydropolitics

Limpopo is over 1,800 km long. Botswana, Mozambique, the Republic of South Africa, and Zimbabwe are riparian countries. The RSA controls the majority of the basin's 415,000 km² area (44% as compared with 31% for Mozambique, 20% for Botswana, and 15% for Zimbabwe). The Crocodile River, the upper stream of the Limpopo, marks the border between the RSA and Botswana and then between the RSA and Zimbabwe. The MAR for Limpopo is 7,330 million m³. The riparian countries provide the following percentages to this volume: RSA 66%, Zimbabwe 16%, Mozambique 12%, and Botswana 6%. The basin's average annual precipitation is less than 500 mm.

Water resources in Limpopo are heavily used to serve metropolitan areas, industry, and irrigated farmland. The Limpopo, along with the Orange, is the most important river in southern Africa in terms of economics. Its basin is inhabited by 14 million people, the bulk of whom live in the RSA (43% in metropolitan areas). As a result, the Limpopo Basin is Africa's most heavily populated and urbanized river basin. In the basin, there are 44 dams with a total storage capacity of

more than 12 million m³ (Heyns, 2003, 14). The majority of these dams (28) are on Limpopo tributaries in the RSA. The Loskop Dam on the Olifants River is the largest of these (348 million m³). This reservoir provides water to the RSA's northwestern province of Mpumalanga, as well as power-generation facilities in Gauteng. Limpopo receives four ITBs and has two ITBs of its own (Turton et al., 2004: 263). Together, the RSA and Zimbabwe are close to completely harnessing Limpopo's water resources.

The RSA's economy is significantly reliant on water resources from Limpopo, particularly in the country's industrial heartland, Gauteng. Irrigation is used on over 200,000 acres of agricultural land in the RSA. The Limpopo gets extra water from neighbouring river basins via ITBs (Orange, Inkomati, and Maputo). Botswana has started up the Letsibogo Dam on the Motloutse River, a tributary of the Limpopo River, with the goal of using a north-south carrier to increase water supplies to Gaborone. The Limpopo River provides water to eastern Botswana, which is highly inhabited. The downstream riparian, Mozambique, is concerned about additional water shortages, particularly for a large-scale irrigation project in the country's south and the Massingir Dam on the Olifants, a Limpopo tributary (Heyns, 2002: 15). Furthermore, industrial and mining activities on the river's upper course have a negative impact on the river's water quality. In other words, it is not only the quantity of water at peril but also the quality of the water. Mozambique's concerns are not unfounded, given that all upstream riparians have plans to make greater use of these water resources (Pereira, 2000). A coordinated approach to regulating the full river basin is therefore required to avoid future disputes.

2.3.1.4. Lake Victoria Hydropolitics

Lake Victoria has a surface area of around 69,000 km² and a basin area of approximately 193,000 km². As a result, it is the world's second-biggest lake and Africa's largest. It has a volume of 2,760 km³ with a 3,450-km shoreline (1,750 km in Tanzania, 1,150 km in Uganda, and 550 km in Kenya). It has an average depth of 40 m and a maximum depth of 80 m. From north to south, the lake is 412 km long and 355 km broad. The lake is 1,135 m above sea level. The location receives a fair amount of precipitation (1,015 mm per year). Precipitation provides 85% of the water, while tributaries provide 15%. (including the Kagera, Nzoia, Sio, and Yala rivers). The rate of evaporation equals 85% of the water that flows out of the lake. The Kagera, which originates in Burundi, is the main tributary. The Ripon Falls or Owen Falls, in Uganda, are where the waters of Lake Victoria overflow into the Nile. The rate of evaporation equals 85% of the water that flows out of the lake. The Kagera, which originates in Burundi, is the main tributary. The Ripon Falls or Owen Falls, in Uganda, are where the waters of Lake Victoria overflow into the Nile (Cascao, 2009).

The lake is shared by three riparian countries: Kenya (6% of its surface), Tanzania (49%), and Uganda (45%). Burundi and Rwanda (7% and 11 %, respectively, compared to 44% for Tanzania, 22% for Kenya, and 16% for Uganda) share the basin. A total of 35 million people live in the basin, accounting for nearly one-third of the population of the three riparians (EALA Study, 2005).

The lake and its resources are utilized to provide water to families, industry, and agriculture, as well as for fishing, transportation, the acquisition of building materials, the generation of electricity, and the disposal of domestic, agricultural, and industrial trash. The lake basin is fertile, thickly populated, and intensely farmed (to produce coffee, tea, cotton, sugar cane, etc.). Fishing and fish processing provide a living for 3 million people in its riparian countries. The average yearly catch is between 400 and 500,000 tons, with Tanzania accounting for 40%, Kenya for 35%, and Uganda for 25% of the total. The region is characterized by rapid population growth and widespread rural-to-urban migration. Kenya, being the riparian with the smallest share of the lake, is particularly reliant on it: Lake Victoria provides about half of the country's water resources. Kenyans make up a large portion of the basin's population (WFP, 2017)

Conflicts arise mostly between export-oriented and traditional fisheries in this area. There is also a full-fledged confrontation between Kenyan fishermen and Ugandan officials, who frequently stop and detain Kenyan fishing vessels for allegedly fishing in Ugandan territorial waters. One international conflict has already resulted as a result of this (EALA Study, 2005). The security of fishing and transportation industries on the lake is also threatened by widespread piracy. Tanzania is now constructing a 179-km pipeline to provide water from Lake Victoria to the country's parched northwest, and Kenya has devised similar plans as part of its Kenyan National Water Master Plan (FAO et al., 2017; WFP, 2017). Such projects have ramifications all the way down to Egypt, where the lower-course Nile riparian is reliant on Lake Victoria as a source of the Nile. Victoria is an important basin for this study since it is one of the main sources of the Nile at the heart of this thesis.

2.3.1.5. Lake Chad Hydropolitics

The basin of Lake Chad covers approximately 2.39 million km². The surface of the lake is highly changeable, changing with the seasons and macroclimatic phenomena (droughts). The lake's significant shrinking since the mid-1960s is one of its defining characteristics, owing to climate change on the one hand and man-made environmental degradation on the other (over exploitation of the lake's resources, overgrazing, deforestation, non-sustainable irrigated

agriculture). The lake had a surface area of 25,000 km² in the 1960s, but it now has a surface area of 2,500 km². It has even decreased to 2,000 km² in extreme circumstances. The lake is extremely shallow (average depth of 1.5 m, maximum depth of 12 m). The Chari (Shari) (950 km long), its tributary, the Logone, and the Komadougou-Yobe river system are its most important tributaries (as well as the El Beid and the Yedseram). 90% of the lake's inflows come from the Chari and Logone rivers. Natural reasons and damming of the lake's tributaries have significantly limited the amount of water flowing into it in recent years (Dami et al., 2011).

The basin's yearly average precipitation is quite unevenly distributed. The southwest receives 1,600 mm per year on average, whereas the north receives less than 155 mm per year. The evaporation rate is extremely high, reaching 2,300 mm per year. Chad (45.5%), Niger (28%), the Central African Republic (CAR) (9%), Nigeria (7%), Algeria (4 %), Sudan (4%), Cameroon (2%), and Libya are the nations that share the Lake Chad Basin (0.5%). The Lake Chad Basin encompasses more than half of Chad and Niger's area. Chad, Niger, Nigeria, and Cameroon are the lake's direct riparians. The CAR and Cameroon contribute three-quarters of the lake's water, despite the fact that they do not share the lake (CAR) or only a small portion of it (Cameroon). In addition, there is a disparity between the rainy south, which supplies the lake, and the parched north. The vast flooding zones of Lake Chad are a common feature (Sategui Deressia in Chad, Yaeres in Cameroon, and Hedejia-Nguru in Nigeria (LCBC, 2000).

Shrinkage of the lake's surface, constant decline in the quantity of water in its tributaries, a decline of the groundwater table, soil erosion, loss of plant and animal species, pollution and toxicity from agricultural chemicals, sedimentation, salinization, overfishing, and invasive plants are all examples of environmental deterioration of the lake and its basin (Dami et al., 2011).

The Lake Chad Basin is host to 22 million people, with a strong rate of population growth (2.4–2.6%). Over 150,000 fishermen rely on the lake for their livelihood. The typical annual capture is 60–70,000 tons, down from 130–140,000 tons in the 1970s. The lake's waters and groundwater are vital to both (nomadic) pastoralists and sedentary farmers. When the lake's waters recede for seasonal reasons, farmers take advantage of the fertile lake soil. Irrigated agriculture is currently practised on 115,000 acres of land in the basin. Nigeria has the most land (83,000 ha), followed by Chad (14,000 ha) and Cameroon (7,000 ha) (13,000 ha). The basin's potential is projected to be 1.16 million acres, which would require utilizing roughly 80% of the volume of the lake's current tributaries. Since the early 1980s, water use for irrigated agriculture has increased fourfold. Larger irrigation projects are often thought to be ineffective. 20 Because of the lake's shrinkage, several larger-scale irrigation projects, such as Nigeria's South Chad Irrigation Project

and Chad's Mambi Polder Project, have already been abandoned or put on hold indefinitely. The largest project now in the works is an IBT system that will use water from the Congo River Basin to stop the lake from shrinking. The proposal is to transport 900 m³/s of water from the Congo Basin's Oubangui River to Lake Chad via a pipeline and a 2,400-km-long navigable canal. There are also plans to build a dam on the Oubangui near Palambo (CAR) to generate energy. The Republic of Congo (Brazzaville) has previously signed a no-objection declaration for this project, which aims to develop irrigated agriculture to an area of 5–7 million ha. The countries involved have set aside \$1 million for the initiative and plan to seek additional funding from donors for a total of \$5 million for feasibility studies. The Lake Chad Basin Commission made a decision on these studies in January 2002, and they will examine the project's social, economic, and environmental impacts (FOA, 2009).

Changes in the environment in the lake region have sparked a slew of confrontations at many levels, some of which have devolved into violence. There have been heated clashes between nomadic pastoralists and settled farmers along streams over dam projects, as well as between upstream and downstream communities along tributaries. These tribes are vying for land (for grazing) and water in the region's increasingly scarce natural resources. Some have formed well-armed militias to fight each other. However, there are several non-states, traditional dispute-resolution processes in place for peasants and cattle breeders to address disagreements over grazing and transit rights, access to water, and other issues (ICID, 2006).

There have also been confrontations between the riparian states of the lake at times. In the late 1970s, for example, there were conflicts between Nigeria and Chad along their 85-kilometre-long border, which runs around Lake Chad, and in April 1983, more than 100 people were killed in combat between the two countries' military forces. Only in 1986 did the battle come to an end. The Lake Chad Basin Commission took part in the mediation attempts as well (FOA, 2009).

Also, there was a highly significant, ongoing border war between Nigeria and Cameroon, which resulted in violence between the two countries' military forces in 1993. The fighting spanned the whole 1,600-km border between the two countries, as well as the Bakassie Peninsula to the south. The Lake Chad Basin is also involved in the conflict, as the lake's shrinking has blurred the course of the borders: local groups, formerly Nigerian citizens, followed the receding waters and established villages on Cameroonian territory; the Nigerian administration stepped in to fill the void, prompting official Cameroonian protests. The two parties have been attempting to resolve the issue for several years with international help, and a special Cameroon-Nigeria Mixed Commission was established for that reason. Furthermore, there have been major disputes between diverse user parties in the region's countries, upstream-downstream disputes along tributaries, and arguments

over (proposed) dams (e.g., on the Mape River in Cameroon) – particularly in Nigeria, between the country's multiple federal states (Dami et al., 2011).

2.3.1.6. The Southern African Hydropolitical Complex (SAHPC)

Inga Jacobs (2010) mentions that pivotal basins, impacted basins, pivotal states, and impacted states are the four major components of the HPC. *The Pivotal States* are those that have a high economic growth rate while also being heavily reliant on shared river basins for crucial water supplies (Turton, 2003a: 79). The pivotal States have the ability to project their power beyond their borders because of their higher level of economic development (Turton and Ashton, 2008: 315). South Africa, Namibia, Botswana, and, to a limited extent, Zimbabwe are key members of the SAHPC. These four states are likewise experiencing water scarcity and are rapidly approaching the boundaries of their easily available water supplies. Because economic growth is linked to state dominance within a system (Buzan, 1991: 187-190), increasing water scarcity offers the threat of lower economic growth potential in the near future. As a result, water is elevated from a low-level political concern to a high-level political issue, as mentioned in the earlier discussion. River basins that are strategically significant to any of the four key states are referred to as *Pivotal Basins*. Basin closure is also a possibility for pivotal basins. As a result, basin closure is a distinguishing feature of the SAHPC, and it may lead to inferences of higher conflict risk. When a shared river system reaches closure, rivalry for water escalates, which becomes a high-politics problem when imminent water shortage is viewed to be a danger to a state's economic development, according to Jacobs. The Orange-Senqu, Incomati, and Limpopo River basins are all crucial basins within the SAHPC, and their coriparian status connects all four pivotal states. All three were "Basins at Risk," which is significant. *Impacted States* are riparian states that rely heavily on water from international river basins that are shared with a Pivotal State since their industrial development is based on it. The impacted States, on the other hand, are unable to reach an agreement on what they regard to be a fair water allocation. Angola, Lesotho, Malawi, Mozambique, Swaziland, Tanzania, and Zambia are all classed as Impacted States by the SAHPC. *Impacted Basins* are those on which the economic development of a Pivotal State, which is also a co-riparian, is dependent. Furthermore, in Impacted Basins, Impacted States have less discretion to utilize their water resources in a way that is regarded as fair and equitable. The Cunene, Maputo, Okavango, Pungué, Save-Runde, and Zambezi basins are all affected in southern Africa (Jacobs, 2010).

The components of any HPC can be used to make two crucial inferences (Turton, 2005a: 15). To begin with, Turton (2005a) claims that all river basins are not similar in terms of physical characteristics such as endogenous water, boundary-demarcating, and so on (Gleditsch et al., 2005).

Second, not all riparian states are created equal, with some being more economically dependent on a certain river basin than others or some being more reliant on external water than others (Turton, 2005a: 15). Also noteworthy is the fact that some riparian governments have stronger economic potential than others (Turton, 2005a: 15).

The SAHPC can be used as a conceptual lens to gain a limited knowledge of the patterns, nature, and evolution of principled cooperation in transnational river basins. Desecuritisation has taken place in southern Africa over several decades as a result of significant technical cooperation amongst the Orange-Senqu riparian states. This may have assisted the convergence of interests on a normative trajectory at the regional level, resulting in a regional norm established for transboundary water cooperation. Although southern African hydropolitics has transformed in the post-apartheid era, the basic factors, according to Turton (2005a: 17), have remained the same. “The region’s four most economically developed states are also the ones facing the greatest water scarcity; they all share international river basins with other states, they’re all riparian to the Basins at Risk,” and they’re all facing significant limitations to their future economic growth prospects as a result of looming water shortages.” As a result, the SAHPC reflects the Problem shed, rather than specific watersheds, as an alternative to tightly limited river basin viewpoints. The HPC, on the other hand, has flaws. The state-centric orientation of HPC assessments, as well as the ignoring of non-state acts and supra-state regional entities, are major flaws.

2.3.2. Hydropolitics of Asia

The population of South Asia (SA) was at 1,856,882.40 in 2020, and it is expected to grow to over 2.2 billion by 2050 (Bank 2020, Bank 2015). It has 3% of the global total (Rasul, 2014) and 5% of the world’s renewable freshwater sources (UNESCO, 2012). Since 1950, per capita, water availability has fallen by 80% (Surie & Prasai, 2015), and 20% of the population lacks access to safe drinking water and suffers from inadequate sanitation. The agriculture industry consumes the freshest water (Babel & Wahid, 2008; ADB, 2013). India, Pakistan, and Bangladesh are all water-scarce or water-stressed countries in South Asia (Babel & Wahid, 2008; Bank, 2015). South Asian countries are reliant on the transboundary Ganges-Brahmaputra-Meghna (GBM) and Indus river basins. The larger Himalayas and Tibetan plateau are key geophysical-meteorological areas for monsoon development in South Asia and China, as well as headwater sources for these rivers. After the polar ice caps, the Himalayan cryosphere is the world’s third largest in terms of magnitude (Immerzeel et al., 2009). With a total area of little over 1.7 million km², the GBM river basin is the region’s largest transboundary basin, spanning India (64%), China (18%), Nepal (9%), Bangladesh (7%), and Bhutan (3%) (AQUASTAT, 2011).

2.3.2.1. The Ganges River Basin (GRB)

The Ganges River Basin (GRB) is home to 8.3% of the world's population and provides food for 655 million people and more (Bank, 2014). Around 80% of the population (450 million) lives in multidimensional poverty, with roughly 26% (126 million) belonging to low-income categories. The Ganges and its tributaries provide all of India's water needs. It begins in the Himalayas, flows 2515 km, and joins the entire GBM river systems (Parua, after 2001) to form the world's largest delta and the world's third largest freshwater outlet to the oceans, trailing only the Amazon and Congo River systems (Chowdhury & Ward, 2004). The Ganges, Hinduism's most sacred river, is the world's thirty-first longest river (Rahaman, 2009). The Ganges' overall drainage area is roughly 1,087,300 km² or 52% of South Asia. The basin is shared (by area) by India (79%), China (3%), Bangladesh (4%), and Nepal (14%), respectively (AQUASTAT, 2011).

Climate variability and important Sub basins influence the flow of the Ganges and its tributaries. The contribution of glacier melt to the Ganges is estimated to be only 3% (Immerzeel and Bierkens, 2012), with Nepal contributing 44% of the yearly flow (Tibet and China). Nepal is the source of the Ganges' major tributaries, Mahakali, Karnali, Gandaki, Kosi, and Mahananda (also known as Mechi and Kankai in Nepal). In a dry season, Nepalese rivers, which are perennial in nature, supply 55 % (IWM, 2010).

The relationship between India and Nepal is unique, as the two countries still share an open border (Hughes, 2016). Nepal is a landlocked country bordered on three sides by India. The social, economic, political, and geographic circumstances have compelled both of these countries to coexist (Dhungel, Pun et al., 2009). Although the majority of South Asia's biggest river basins are shared by more than two countries, previous treaties are all based on bilateral agreements (Biswas, 2008; Biswas, 2011). Despite some efforts by Nepal and Bangladesh, India favours a bilateral strategy, particularly in the Ganges basins (CIA, 1983; Dhungel & Pun, 2009).

Nepal has about 6000 rivers, with all of the waters naturally flowing into the Ganges in India. The water resource relationship between India and Nepal appears to have started with a letter from the "British Raj" to Nepal in 1887. (Dhungel and Pun, 2009). On the three larger rivers, one of which is a significant tributary of the Ganges, Nepal and India have signed four treaties. The Sharada Agreement, signed on the Mahakali River in 1927 by the Government of British India and the Rana of Nepal, is one of them. On the banks of the Koshi River, the first democratic government of Nepal and the government of India signed the Koshi Agreement in 1954. The

Gandak Agreement (1959), signed on the banks of the Gandak River by Nepal's first democratically elected prime minister and India's first democratically elected prime minister, and the Mahakali Treaty of 1996, signed by two governments navigating through highly politicized events.

2.3.3. Hydropolitics in the Middle East

In the year 2000, the Middle East and North Africa had a population of around 350 million people. This population will indeed need an annual water supply of around 350 billion cubic m. Only roughly 200 billion cubic m of renewable freshwater exist in the region's water sources (Allan, 1994). Many of the territory's assets are being depleted, such as the aquifers along the coasts of North Africa, the Gulf and the Eastern Mediterranean. Couple flows, like the system of Tigris, are still underutilized. In addition, the region's winter soil patterns contain a fluctuating seasonal supply of water that is oversimplified. The Middle East began a period of severe water scarcity before 1980s, at a time when global staple commodity costs had been declining for almost two decades (Dyson, 1999). Costs were driven down by a variety of technological advancements, manufacturing and export subsidy in the Northern countries, and the absence of the external costs of degradation of the environment from grain costs.

2.3.3.1. Tigris-Euphrates Hydropolitics

The major riparian states in the Euphrates & Tigris River basins are Turkey, Iraq, Iran, Turkey and Syria. Because Iraq and Syria are downstream states in the basin, they are constantly working to guarantee that they have enough water to serve their personal, industrial and agricultural needs. Furthermore, they regard these basins as transnational water bodies that must be regarded as a unified unit for all riparian parties. Turkey, on the contrary, believes the Tigris and Euphrates basins to be "transboundary Rivers," meaning that they are both under Turkish sovereignty unless they cross borders, and when they come together to produce the Shatt Al-Arab River, it turns an international river. Furthermore, Turkey was one of three nations that voted against the United Nations' International Law Commission on the law of Non-Navigational Uses of International Watercourses in 1997. Turkey, too, believes that this is not legally enforceable since the agreement does not bind them. Moreover, Turkey acknowledges the Euphrates and Tigris River basins to be one basin attributed to the formation of the Shatt Al-Arab River from their confluence, as well as mass water allocation between the Euphrates and Tigris Rivers through the Tharthar scheme, whereas Iraq and Syria believe that every river has an autonomous basin (Gruen, 2000).

Water security is seen uniquely in the Tigris-Euphrates Basin (Kolars & Mitchell, 1991). The hegemon in the Jordan River is a downstream riparian Israel state. Egypt, a downstream state,

is the Nile's hegemon. Turkey, which is located upstream on the Tigris-Euphrates, is the most powerful riparian state. The Turkish state has arbitrarily decreased Euphrates' flow to about half of its base rate underneath the Turkish-Syrian border. Turkey's investment in water management facilities in the upper regions of the river since 1970 has harmed both Syria and Iraq's water security. Turkey has sought though unsuccessful, to build a constructivist system by finding shared interests in buying or selling the subregion's varied energy, freshwater, and agricultural resources (Kibaroglu, 2002). Bilateral accords, much alone a more extensive constructivist system, have made very little headway (Wolf, 2000).

After the French and British mandates became disbanded, water conflicts took on a national tone. Prior to World War 2, the first pact for the regulation of the Shat Al-Arab River was inked in 1913 by Iran, Russia, Britain and Turkey. France and the United Kingdom, as delegates of Syria and Iraq, signed a memorandum of understanding in 1920 to form a commission to work collaboratively toward the exploitation of the Tigris and Euphrates Rivers. Two agreements in 1921 accompanied this, which specified in article 12 that Aleppo could utilize the Euphrates River's water. Later, in 1923, the Allied powers and the young Turkey state signed another deal known as the Lausanne Accord addressing the Euphrates and Kuviek Rivers. The treaty also stated that Turkey must engage with Iraq before launching any hydrological projects. Turkey and the Allied powers inked an Agreement of Neighborly Relations in 1926, in which they committed to working jointly to utilise the Euphrates river. In 1930, the committee for the division of the Turko-Syrian border on the Tigris was constituted. Consequently, an accord was made between France, the dominating force in Syria, and Turkey, which declared that the boundaries between the two nations would adopt the principle of *thalweg*, setting the border in the centre of the Tigris despite variations in the river's flow (UN-ESCWA, 2013)

In 1932, Iraq claimed independence from the United Kingdom. Then, in 1937, both Iraq and Iran reached an understanding. This was done to demarcate their boundaries and regulate shipping in the Shat Al-Arab Waterway. All of the preceding agreements are now extremely important for present diplomacy and geopolitics in the basins (Elhance, 1999). Turkey and Iraq signed the Ankara Treaty of Friendship and Good Neighbourliness in 1946 (Beschoner, 2008). It is regarded as the very first intergovernmental partnership between the two nations in terms of managing common water resources. According to the treaty, Turkey has the authority to develop and administer permanent stream monitoring instruments, and any data gathered shall be provided to the Iraqi counterpart and also notify Iraq of any plan to develop any hydraulic projects (UN-ESCWA, 2013). Turkey pledged that it would not disrupt the flow of the Euphrates without first alerting Iraq and that any subsequent projects would be tailored to the interests of both countries. In that agreement, Baghdad was granted permission to build security and monitoring posts on Turkish

soil in order to avoid downstream floods (Berardinucci, 2010).

The first hydrological works in Iraq started in the 1950s, with the construction of the Samarra barrage and the dam of Dukan Derbendikhan (Kibaroglu, 2008). The initial discussion between Iraq, Syria and Turkey happened in 1965, and it was agreed that the system of the agreement would be abolished. When Turkey resolved to build the Keban Dam in the 1960s, the three riparian nations entered a new stage of their relations. In June 1964, Turkish and Iraqi specialists met, and Turkey decided to keep the outflow downstream of the dam at 350 m³/s because the regular basin stream could give sufficient amounts to keep the flow at this rate. Turkey advocated the formation of a Joint Technical Committee (JTC). Through collaborative field research, this committee's role is to research the basin in order to determine the estimated yearly flow for every stream and also identify the necessary amounts of water for agriculture for the benefit of the states. To assist in the understanding of the rights of water, the major methods and parameters of the committee's activity should be written (Kibaroglu, 2011).

A dialogue summit was convened in Baghdad in 1965. At the summit, Iraq, Syria, and Turkey each wanted a fair share of the Euphrates river per year. This quantity surpasses the Euphrates River's low yearly discharge. Future dams, particularly dams of the Keban in Turkey and Tabaqa in Syria, were discussed during these sessions. It came to a halt following twenty-two rounds of negotiations (Daoudy, 2009:61). Turkey has stated that it would sign a tripartite pact unless there existed a comprehensive understanding of the water division of all the rivers shared by it and Syria (Lowi, 1995). Eventually, in 1973, Keban Dam began operations, followed by Tabaqa Dam in 1974. That heightened tensions between Syria and Iraq. Later, it guaranteed Iraq a considerable amount of feed from the Tabaqa Dam. The animosity between Syria and Iraq rose once more in 1975, after Syria began to enclose Assad Lake, as Syria refused Iraqi rights to share a portion of the lake's water, claiming that the approaching flow from Turkey was far less than the usual flow, also they obtained half the anticipated amounts of water (Berardinucci, 2010). Saudi Arabia, Egypt and the Arab League attempted to intervene and resolve the conflict, but their attempts were futile, and the two states gathered soldiers near their border in June 1975. Afterwards, Saudi Arabian state proposed splitting the Euphrates water between the two nations depending on water amounts gotten by Syria from Turkey. This proposition decreased the controversy, but no deal was signed. In 1977, Turkey enlarged the Lower Euphrates Project and renamed it the South-eastern Anatolia Development Project (GAP) (Kibaroglu, 2008).

Iraq and Turkey signed a technical and economic cooperation treaty in 1980, and Syria ended up joining this agreement. In particular, in 1983, A joint technical team was to discuss regional water issues, especially the Euphrates and Tigris Rivers. Thereafter, Syria aided Kurdish

and Armenian insurgents against the Turkish state, allowing them to assault GAP projects with headquarters in Syria. The insurgents were carrying out nefarious operations on the GAP development's works (Zawahri, 2006), as Iraq allowed Turkish military forces to conduct strikes on the PKK on Iraqi territory. Syria and Turkey inked an Economic Cooperation Protocol in 1987. Article 6 of that protocol states that in the event of filling of the Atatürk Dam reservoir and until the last allotment of the Euphrates waters amongst three riparian states, the Turkish regime does discharge an annual average at the Syrian-Turkish border lines, and in instances where the monthly stream drops just under an average standard, Turkey consented to cover the shortfall in the consequent month.

The Turkish state informed its downstream neighbours of its intention to fill the reservoir of the Ataturk Dam by November 1989. It detailed the practical grounds for the move and also gave a thorough plan for recouping the damages. Envoys were also deployed to the area to emphasize the necessity for the move and the steps taken. Filling began on January 13, 1990, and finished on 13th February 1990. The month of January was picked since it has a low water consumption. Iraq and Syria filed official protests against this action, calling for a revised deal to share the Euphrates River's waters. Both Syria and Iraq disputed the development of Turkey's Birecik Dam, causing conflict to flare up again in 1996 (Kibaroglu, 2008). In light of this, Iraq and Syria entered into a water partnership to address water scarcity issues. It was decided that the Euphrates and Tigris rivers' water could be shared and utilised in an equal and acceptable manner. To address the problem, the Turkish state invited Syria for talks in mid-1996, proposing that water could be shared based on the size of cultivated areas, as Syria demanded an equal share (Wolf & Newton, 2008), but still no deal was secured. Iraq and Syria entered into an agreement in 2002 that enables the former to build a drainage system on Tigris. The proposed site and quantity of retrieved water were defined in that pact (UN-ESCWA, 2013). After, Syria and Turkey relaunched the JTC and had a roundtable discussion in which they decided to keep sharing intelligence on weather trends and the quality of water. The volume of water that the Turkish state transferred to Iraq and Syria was impacted by the droughts that afflicted the area from 2007 to 2009. Syria and Turkey agreed on a new deal called the Strategic Cooperation Council Agreement (SCCA) in 2009, as well as a couple of Memorandums of Understanding. The whole negotiated treaties emphasized water quality improvements, the development of water pumping units, combined dams, and the establishment of combined water legislation (UN-ESCWA, 2013). The Turkish state provided extra water to Iraq at that time, but no deal was signed (Jones, 1995).

A few of the Tigris' tributaries rise in Iran, and the two primary riparian nations in Shat Al-Arab are Iran and Iraq. In this respect, the initial accord, called the Constantinople accord

regarding border demarcation between both nations, was inked in 1913, and it addressed the constant changing of the waterway. It was accompanied by yet another accord reached in 1937 with the League of Nations' assistance. By these agreements, Iraq enjoys complete sovereignty over the two sections of the Shat Al-Arab Stream, notwithstanding Iran's continued claim to 50% of the river. In the 1970s, Iran funded Kurdish separatists in northern Iraq in order to put pressure on Iraq to renegotiate the status of Shatt Al-Arab. The two nations inked an accord in Algeria in 1975. As a result, Iraq relinquished its claim to half of the Shatt Al-Arab, and the Kurdish revolt came to an end. Iraq felt embarrassed, and tension continued to rise until the first Gulf War between Iran and Iraq was triggered in 1980. The conflict concluded without addressing the Shat Al-Arab issue (Wallace, 1998). Until now, all Iraqi authorities have maintained unequivocally that Iraq will never re-establish the 1975 accord. Because of the enhanced partnership between the two nations since 2003, the Foreign Ministers of the two nations met in 2014 to discuss the Shatt Al-Arab question. The two sides decided to continue with the mapping of boundaries and the implementation of accords in line with the border treaties, conventions, and protocols signed by the two nations in 1975 (Guru, 2014).

Al-Ansari (2019) suggest as a solution to the Tigris-Euphrates question that Turkey, as the riparian hegemon, should be persuaded to enter negotiations. The Turkish authorities appear to be interested in two major topics. The first step is to complete the GAP project. This can be accomplished through possible financial bodies such as the World Bank or the European Union. In order to make that happen, Turkey will be required to sign deals with downstream riparian states before any funds are released. Development aid in the form of technical and financial assistance, as well as greater water management, are enticing elements for both Syria and Iraq, as they will aid in the development of their agriculture policies with more creative advanced work. As for accession to the EU, it is necessary to improve the human rights situation, which could be accomplished by integrating Kurds into a cooperative water usage endeavour (Akanda et al., 2007). To get an ultimate resolution and reach a deal between riparian states, an independent arbiter is required who can emphasize and interpret the concerns in a manner that each country believes it would gain by participating in the meetings and will lose by evading them.

2.4. The Nile Nexus

Figure 6: A pictorial view of the Nile



Source: Stratfor, 2012

Falling behind Amazon and the Orinoco, the river Nile is the third largest drainage basin and the world's longest river (Woodward et al., 2015a), measuring around 6,825 km. It has two significant tributaries, the White and Blue Niles (the Ethiopians call it Abbay). The White Nile originates in central Africa's Great Lakes region, with even the farthest source in the south of Rwanda, and runs north across Tanzanian state, Lake Victoria, Ugandan state, and South Sudanese state. The Blue Nile begins in Ethiopia at Lake Tana and flows southeast into Sudan. These two rivers converge at Khartoum, Sudan's capital, then run north via Sudan and Egypt until discharging into the Mediterranean Sea. The estimated drainage area ranges from 3.1 million km² (FAO, 2007) to 3.3 million km² (CPWF, 2007). The variance is attributed to the problems in delineating the sub-basin in Sudan and Egypt's level slope areas. Uganda, Tanzania, Sudan, South Sudan, Rwanda, Kenya, Ethiopia, Eritrea, Egypt, Burundi, and the Democratic Republic of the Congo are among the 11 countries that make up the Nile basin. The basin of the Nile River is a habitat for around

238 million inhabitants, whereas the 11 riparian states are home to over 443 million (World Bank, 2006). The Nile area is marked by rapid population increase and significant development concerns (Awulachew et al., 2008). The Nile River's benefits should be shared by these 11 states, but the challenges are complex, and that informs the Nile nexus.

The Nile River contains multiple tributaries and watershed lakes that can be divided into two main hydrological sub-systems: The Eastern Nile circuit and the Equatorial circuit. The Eastern Nile circuit consists of four sub-basins: the main Nile, which begins at the confluence of the White and Blue Niles near Khartoum, the Abbay, the Baro-Akobo-Sobat, and the Tekeze-Atbara (NBI, 2016: 35-39). The Equatorial Nile circuit includes the equatorial lakes known as the White Nile, which produce 14 % of the overall flow of the Nile River (NBI, 2016: 39-45).

Table 1: Rivers and their annual discharge

River name	Length	Annual discharge BCM/year	Time of Nile
Nile	6,850	84	–
Amazon	6,700	5,518	66
Yangtze	5,463	525	6.25
Mississippi	5,279	562	6.7
Congo	4,700	1,284	15
Mekong	4,183	264	3.1
Danube	2,888	205	2.5
Niger	2,590	177	2.1

Source: www.internationalrivers.org

2.4.1. The Eastern Nile

The geographical location washed by a lake or river is referred to as a basin. The Nile Basin relates not just to the actual catchment region of the Nile and its related ecological and biophysical factors but also to the folks who reside in it - and aspects of their economic, social, and cultural development.

The Eastern Nile River encompasses one-third of Ethiopia, a significant piece of Sudan, nearly all of Egypt's farmed and habitable parts, and a minor portion of Eritrea. Ethiopia's domestic renewable freshwater reserves total 123 km³/year and are distributed throughout 12 basins; nine of these are transnational, and three of them are located in the Eastern Nile Basin. The north-western highland of Ethiopia accounts for 86% (or 72 km³/year) of the Nile discharge recorded in

Aswan, Egypt. At the state level, the three Ethiopian subbasins of the Eastern Nile account for 68% of the country's accessible water resources. So far, Ethiopia has only been able to use 5% (without the inclusion of the GERD) of its total surface water or 0.6% of the Nile basin's water resources. Meanwhile, the state is frequently afflicted by drought and is plagued by food shortages and occasional mass starvation.

The Abbay River, which rises on Ethiopia's north-western plateau, has a plethora of sources and tributaries. Lake Tana and the rivers Didessa, Dabus, Muger, Fincha, Jamma, Guder, Birr, Wolaka, Rahad, Bashilo, Birr, Dider, and Beles are among them. The basin's catchment area is 324,500 km², having an average yearly flow to the Nile of 52.62 km³ (FDRE, 1999). Abbay's flow changes drastically owing to the increased yearly variations in rainfall on the plateau Ethiopian. The peak runoff occurs in August and is 60 times bigger than the lowest runoff in February. The basin's structural features, as well as the periodic intensity of water flow, have culminated in a significant level of yearly soil erosion, causing land degradation in Ethiopia's upper basin and silt build-up in Sudan and Egypt's downstream lowlands and impoundments. Per one assessment, Ethiopia's yearly topsoil erosion from the Abbay basin solely amounts to 405 million m³ (Ethiopian Valleys Development Studies Authority, 1991).

The Tekeze River (Atbara), which rises in north Ethiopia and has the Angarab and Guang as significant tributaries, perennially refills the major Nile, joining it north of Khartoum. The river defines the Ethiopian-Eritrean border in one stretch and provides 8.2 km³ to the Nile's total yearly flow (FDRE, 1999). The Tekeze subsystem's climate cycle and structural surroundings are virtually identical to those of the Abbay. The headwater of the river's basin is also prone to significant soil erosion and land degradation, with an annual loss of 120 million m³ of topsoil (Ethiopian Valleys Development Studies Authority, 1991). The Baro-Akobo (Sobat) stream rises from 2000–3500m above sea level in the western Ethiopian highlands; its primary tributaries inside Ethiopia are the Pibor, Gilo, and Alwiro rivers. The Baro-Akobo river system forms a 380-km border between Sudan and Ethiopia (Arsano & Tamrat, 2005). The volume of water transferred by these subsystems to the Nile is projected to be 23.24 km³/year (FDRE, 1999). The Baro-Akobo has wider banks and a much more consistent flow than other river systems that go directly west.

Figure 7: Nile Basin States Map



Source: NBI, 2012

2.4.2. The Great Equatorial lakes

The next subbasin is the Equatorial Nile subbasin, also known as the Great Equatorial lakes, which distributes just 15% of the water volume but has a consistent flow throughout the months or years. The Great Rift Valley, which stretches with some irregular ups and downs from Zimbabwe to the Jordan Valley, including the Red Sea, is separated into two branches in the southern part of the Nile Basin. The eastern branch of the Rift Valley passes through Kenya and is not included in the Nile Basin. The western branch, on the other hand, includes Lakes Tanganyika, Kivu, Edward, George, and Albert. It travels north along the Bahrel Jebel. The Mufumbiro mountain range runs between Lakes Edward, Kivu, and Tanganyika, separating the latter two from the Nile Basin. The River Kagera is the Nile's most upstream tributary and the most important feeder of Lake Victoria. This tributary has a drainage basin of 63 000 km² and is located between 1° and 4°S latitude and 29° 30' and 31° 40'E longitude. Almost the whole Kagera Basin is a mountainous country, with the majority of it situated between 1200m and 1600m levels. The national level is at 2500m a.m.s.l., in the extreme west and rises to around 4500m to form the peaks of the Mufumbiro Range. The Kagera Basin is a network of streams of varied order that are intersected and linked by lakes and wetlands (Said, 1993).

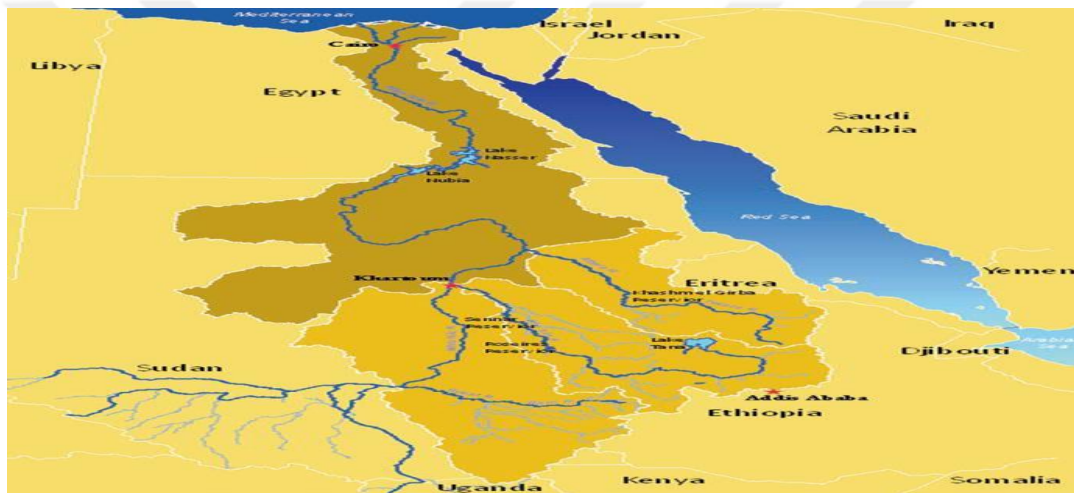
Table 2: Main Nile contribution

Source	River	Water share in km ³ at Aswan	%
Ethiopian Highlands	Blue Nile	50	60
	Atbara (Tekeze)	10	12
	Baro–Akobo–Sobat	11	13
Equatorial Plateau	Lake Victoria – Bahr el Jebel	13	15
Total		84	100

Source: Egyptian Ministry of Water Resources and Irrigation

2.4.3. Egypt and the Nile

Figure 8: River Nile Map Showing Egypt



Source: Abtew & Dessu, 2019

The Egyptian state has a total land area of around 380,000 mi². 95% of it is a desolate desert. The majority of the nation has a very arid environment, with no areas receiving enough precipitation to sustain agricultural production. There would have been no Egyptian state if the Nile did not exist. The small band of green—the Nile floodplain—that runs across Egypt from south to north accounts for less than one over twenty of the nation's land area yet sustains more than 96% of its inhabitants. Egypt, according to Strabo, the Roman researcher, consists exclusively of river-land, and that notion is as accurate now as it was ten decades before (Wilkinson, 2014).

It is common knowledge in academic circles that the Egyptian Nile is the result of two large rivers: The Blue Nile, which begins in Ethiopia's highlands, and the White Nile, which is supplied by Lake Victoria. They unite just downstream of Sudan's centre, Khartoum, to create a massive unified waterway, a stream which continues north for a thousand miles till it hits the sea. Blocks of solid, igneous rocks breach through to the Nile Valley at numerous spots in its extreme south. As it

flows around the natural impediments in its route, each barrier leads the river to split into small streams and tributaries. These are the Nile Cataracts, which are traditionally listed from north to south. They are not the enormous cascades found on other African or American rivers but rather areas of boulders and torrents that are as dangerous to ships. Egyptians have pondered the origins of the world from the ancient period; they have devised different legends, but the most compelling of the old myths describes how a little island came from the pandemonium, like a sandbank from the Nile, giving the potential of life to the planet. Although Muslim and Christian theologians have various narratives, the Nile's significance persisted. "God has addressed this land often in the Qur'an and has proved its significance to humankind," the Arab philosopher al-Muqaddasi wrote in AD 1000, praising Egypt. It is one of the two wings in the world... also its waters are the most beautiful of rivers (Al-Muqaddasi, 1994).

Originally, the Nile's steady flows and flooding release sediments that restore the fertility of the soil and boost land production. The early Egyptians, using obsolete technologies, were able to control the Nile flooding and downturn by building a network of canals and dikes. According to Wittfogol (1957), these hydraulic improvements, as well as Egyptian action to regulate the Nile, had a crucial role in the formation of "hydraulic culture." Only in the Ottoman empire's reign in the Egyptian state was Mehmed Ali Pasha, the Ottoman monarch, able to change ancient Egyptian technology and improve the utilization of Nile hydrology for economic objectives. During that period, massive water facilities such as the Delta Barrages were built. As a result, Pasha's water and irrigation administration system is regarded as among the expressions of Egypt's modernization. With British assistance, Pasha's regime resumed the building (occupied in 1882). During this period, the Aswan High dam was built in the year 1902 and was elevated once more in 1912 as well as 1934. (Chesworth, 1994).

The River became centrally regulated in the contemporary Egyptian state. Hydro barrages and channels had been used in conjunction with technological and managerial controls to sustain the growth of cotton plantations, as well as to cultivate sugarcane and fruit for export. Furthermore, agricultural regulations, mandatory farming, and taxing schemes aided these initiatives. All of these factors have contributed to the formation of Egypt (El Nour, 2018). Under Gamal Abdel Nasser's presidency (1953–1970), his Arab socialists' political philosophy disseminated and fostered major agricultural development. In pursuit of social equality for the peasantry, he ended the feudal system and reallocated lands. Similarly, Nasser's ideas were met with hostility from colonialists both globally and locally. In the context of socialist principles and anti-imperialist objectives, Nasser built the Aswan High Dam in 1960 and finished it in 1970 as a massive hydraulic facility and an emblem of nation-building. In terms of economics, the Aswan Dam manages stream flow and provides electricity for agriculture, fish, and industrialized output (Samaan, 2019).

Meanwhile, the Nile's plentiful water are becoming limited as a consequence of increased agriculture to accommodate rising local consumer and exporting produce. The populace resides on the Nile's shores, which account for 4% total land surface of the state. It is believed that Nile water flows support 98% of this tiny stretch of arable lands (Hefny & Amer, 2005).

Egypt's successive administrations have devised strategies for desert reclamation in order to manage population expansion on the Nile banks and economic demands to enhance food supply. Reclamation efforts, on the other hand, have increased the moral power of governing authorities. Following conflicts, both Sadat and Mubarak launched massive restoration schemes as a component of public policy initiatives. The Nile has been, for a period of time, regarded as a primary supply of drainage in desert efforts of developments. The Mubarak government authorised a protracted 2-decade-long plan between 1997 and 2017 that involved four major desert remediation regions. The first is the South Valley Development Project (SVDP) which includes the Toshka project in the Western desert. The second is the Al-Salam Canal Development Project (SCDP). Third is the West Delta Irrigation Improvement Project (WDIIP). Fourth, the four Million Feddans Development Project was revitalizing several parts in the initially scheduled West Valley and Sinai regions (El Quosy, 2019). After El-Sisi took control in 2015, this restoration program was modified. He declared the cultivation of 1.5 million Feddans in various parts of Egypt utilizing groundwater resources (Mada Masr, 2015).

The restoration program is at the heart of agricultural strategies aimed at promoting financial emancipation. Other Nile Basin nations, on the other hand, were harshly critical of the land restoration initiatives since they saw the drainage of the deserts as a waste of precious water (Bush, 2007). Notwithstanding objections from riparian nations, Egypt authorities have continued to use the restoration growth narrative as the best choice to mitigate the consequences of population expansion and commercial needs. Moreover, these massive state projects help to create jobs, draw external investment, and effectively redistribute people further than the Nile banks (Adriansen, 2009).

Ensuring the upstream inflow of Nile freshwater seems to be the reverse of addressing local economic and demographic difficulties. As a result, cooperation with upstream nations in the manner of building and supporting hydrological facilities is a factor in Egypt's world politics. Moreover, empirical considerations justify this global approach. For example, scientific research released in 1998 by hydro experts indicated that Egypt's water balance would be satisfied until the year 2000. Following that, the state will experience a water shortage. As a result, the researchers suggested that national initiatives be developed to ensure the flows of the Nile by erecting water infrastructure initiatives in the Sudd region, which is presently in South Sudan, in addition to

national assistance to enhance the effectiveness of drainage ditches and incorporate underground water for restored land areas (Elarabawy et al., 1998: 316).

The scientific rationale for Egypt's freshwater investments in upstream reserves continues. A group of Egyptian hydraulic engineers close to the decision circles of national water policy presented a new study report (Allam et al., 2018). Researchers calculated the importance of the flow of water in the event of building the Jonglei canal in the issue of water projects in equatorial lake states using various modelled simulations.

Egypt's most current National Water Plan for 2017 up to 2037 securitizes freshwater, regarding it as an urgent concern important to survival, growth, as well as ecology. As a result, the aim of this Plan is to "Achieve Water Security for All by 2037." Using four core elements, the National Water Plan strives to promote water safety and enhance the use of existing water reserves: first, continuing to improve water quality by improving canal and sewage capacity; second, trying to rationalize the usage of water to redistribute 70% of water supplies to agricultural production; third, establishing water systems by incorporating 1.05 million m³ of renewable drainage to the hydrological cycle in 2030 and 4.45 million m³ in 2037, and 4) implementing embedded water systems by facilitating administrative and judicial unification with other policy initiatives (MWRI). In addition to these primary pillars, the MWRI emphasizes that the administration has been sponsoring bilateral water initiatives, notably operational tasks, as well as engaging in information transfer (MWRI, 2020). Importantly, the bulk of such initiatives was implemented in Upper Nile nations.

In terms of national and transnational policies, the Nile is obviously the key water resource upon which the Egyptian folk's existence, commerce, and state are centred. The lack of water, on the other hand, reshapes the restoration operations that have modified the river's natural characteristics. On the other hand, because the Egyptian state is solely a downstream nation, it promotes local cooperative patterns.

2.4.4. Sudan and the Nile

Sudan is home to many different resources, such as water and fertile farming land. Sudan has the biggest agricultural land in Sub-Saharan Africa and ranks second in Africa, behind Egypt, according to an FAO study (2015: 4). Agricultural fields represent 60% of the nation's overall land area, although crop-cultivated land accounts for just 11% of the overall surface area. Intensively farmed areas are found around Nile River branches; also, 96% of the area under cultivation is reliant on Nile fresh water (FAO, 2015). Aside from these natural characteristics, the Nile is a key

river in Sudan, contrasted to the other rivers, since its discharge is consistent throughout the year, which is ideal for agricultural production. The Nile River is vital to people's development and sustainable activity (Taha, 2010).

The Nile riverbank, like Egypt, seems to be the most populated region. Two-thirds of the populace is expected to live along the riverbank and labour in the agricultural industry. Major crops like cotton and grains are the mainstay of the industry (Taha, 2010). Agriculture-related activities, such as commerce and cotton goods, have aided in global trade cooperation. Furthermore, livestock-trading nomadic groups like Beja built trade sites around River Nile (Niblock, 1987). As a result, the river is important for both farm owners and cattle herders. It is not only a reservoir for irrigating cash crops, but it is also a transit conduit that connects Sudan to the rest of the globe.

To make use of the Nile Basin's abundant land and water, British imperialists built a water regulation scheme in Sudan. To farm cotton, the kingdom built major irrigation projects such as the Gezira Scheme of 1922. Reservoirs on the Nile were included in these plans, including the Sennar Dam and the White Nile of Jebel Aulia Dam (Taha, 2010). Moreover, there were 1000 privatized projects on the White Niles and the Blue Nile before 1956, accounting for one-third of the entire cultivated area at the time (Niblock, 1987: 32). Generally, throughout British colonialism, the growth of irrigation works on the Nile, whether for cotton or pasture farming, has always been at the heart of agricultural extension in Sudan, going through the British–the Egyptian Republic and on to freedom in 1956. After the 1980s, a 'heartland' concept was established, mostly for Gulf nations. Because of the geographical closeness and geopolitical compatibility between the Sudan government and Gulf monarchs, investors have been urged to divert funds to the agriculture sector for the purpose of exporting commodities. Following governments have rehashed this topic, which has aided in the modernization of water supplies to support big projects and enhance grain exporting (Verhoeven, 2015a).

Contrary to Egypt, whose population expansion is a key factor in food scarcity and leads to restoration schemes, in the Sudanese state, the political thrust of a "breadbasket" has disturbed agricultural productivity and food surpluses. National growth goals, according to El Zain (2007), rely on automating various rain-fed farming, expanding farm produce, and privatising manufacturing methods. He shows that rain-fed farming has been the supplier of foods like sorghum and millet for home purposes from emancipation until the 1980s. Conventional farming practices have been forsaken in favour of automation and producing staple crops, with the commercial goal of increasing excess for exports and producing foreign money. A long famine ravaged the area in 1985, making residents in these areas exposed to starvation. This modernisation strategy was not

robust.

Furthermore, the privatisation of large-scale systems has harmed domestic manufacturing and the safety of supply. Producers and nomads had previously used pasture grounds and small plots due to the extension of farming fields. As a result, civil strife arose as a result of these economic measures (El Zain, 2007: 27).

The Scheme of Khasm El-Girba on the Atbra River, which has a trans-border character, is an instance of similar disagreements in the Nile basin. After the building of the Egypt High Dam on the Egyptian-Sudanese boundary, the Nubian inhabitants of Wadi Halfa, in northern Sudan, were relocated under the program. The intention was for the program to be occupied by disadvantaged Nubians and nomads. The system was watered with stored water from the Khasm El-Girba Dam, and a system of channels was built to raise export crops and wheat for home use. Consequently, despite their major economic interests, two populations were obliged to relocate together: Nubians for farming and nomads for cattle. The authorities pushed for the vast agricultural project as a pivotal growth strategy that would increase crop shipment revenue and, as a result, enhance the living standards of both villages. The scheme's economic operations necessitated a variety of output relationships in relation to land ownership, sharing of benefits, marketing, and facility upkeep. The project proposal disrupted the solid native social and economic relationships since these links were not established on tight family or tribal connections. It was especially disruptive for nomadic herders, who were unable to include their cattle in the plan since the developers built it for cash-only crops and overlooked the requirement for sorghum to sustain animals. An additional difficulty was the lack of pasture area in the plan. In these circumstances, rivalry over water, property, and welfare care widened the gap between the two settlements and exacerbated violence. On the other hand, there had been water canal structural inadequacies, ill health situations, a shortage of fertilizer and cultivation tools, inadequate knowledge, and unmet pledges from administrative officials. All of these variables conspired to cause one of Sudan's large-scale plans to collapse (Assel, 2006).

Notwithstanding the failure of big irrigation systems, growth policies have proceeded to emphasize irrigation system expansion. Both the 1979-two Decades Program and the 1992-2002 Nile Water Development Plan stressed the use of fertilized fields and Nile water to enhance agricultural programs. As a result, a series of operations along the Nile was formed, such as the large-scale irrigation schemes of Kenanah, Dinder, and El Rahad. The goal of these programs was to increase food production while also attracting international investments. The Kenana Sugar Company, for instance, is backed by Kuwait and the Arabian capital (FAO, 2015). Several dams, on the other hand, were conceived and built to irrigate these programs (Verhoeven, 2015a).

Furthermore, localities have opposed the construction of additional dams, like the Dal and Kajbar dams, that are yet to be finished.

The former Al-Bashir administration in Sudan established the Twenty-Five-Year National Strategy (2007-2031) prior to the December 2018 revolt. The Nile was assigned to the defence and security pillar in this plan. The Nile and the Red Sea, per the plan, are vulnerable to global challenges. Nonetheless, the Nile is referenced later in the policy, through the NBI, underneath the global collaboration pillar. According to the plan, NBI is an entrance point for maximizing Nile advantages in energy production initiatives (Supreme Council for Strategy and Information, 2014).

Internally, the Al-Bashir administration initiated the “No Thirst” national initiative, which was supposed to last from 2016 to 2020. The goal was to make water more accessible and available to societies in both urban and rural areas. The initiative includes the construction of different water facilities, like water harvesting, well drilling, and water station quality improvement. Arab nations provided the majority of the cash in the form of credit and technical support (Sudan News Agency, 2017). The Egyptian authorities sponsored this Sudanese initiative and pledged to help it through information exchanges and the provision of machinery for water quality monitoring and weed removal (Salem, 2016). The big initiative, meanwhile, was not finished due to Arab sponsor nations withdrawing financing owing to Sudan’s economic decline (Alnilin, 2018). Agricultural and water strategies have yet to be issued by the present interim administration (established in August 2019). Under the earlier administrations’ plenty and safety discourse, it is unclear how the Sudanese Nile water would be managed.

To summarize, the Nile waters are ample hydrologically in Sudan, but developmental initiatives aimed at staple crops, along with famine episodes, have resulted in water shortages and food shortages. Notwithstanding this, large-scale irrigation infrastructure (strategies and reservoirs) is common in national growth programs, despite the fact that they are divisive and pose a danger to societal order.

2.4.5. Ethiopia and the Nile

The sea, the Nile and the Islamic religion were possibly the gravely important variables in Ethiopian foreign diplomacy for a hundred or more decades. Although much has been written and investigated about each of them, the narrative of the Nile appears to be far from complete, as the topics of this and subsequent publications demonstrate. The Nile played and is going to likely continue to be playing a significant part in Ethiopian history. It was one of the key historical forces

that shifted the nation's focus away from the areas to the south and toward the Middle East. If we imagine the nation as a human being perched on a high point, the Ethiopian state has been obviously staring northwards, observing its neighbours thrive on its gushing rivers and its foes pushing into its lowlands. The alluring Nile enticed adventurers seeking gold, slaves, and gum arabicum to its wide valley, luring foreign evangelists to proclaim the Faith to the diverse peoples of the magnificent valley and luring colonial powers to occupy a large portion of the territory as early as the Roman times. Between 1840 and 1900, most of Ethiopia's fiercest conflicts were engaged in this direction. Conferences, dialogues, and accords that began after the war are still significant (Taflu, 1999: 153).

A study (Abera Mekonnen & Deksios Tarekegn, 2001a) mentions that Ethiopia's entire prospective cultivable land is not more than 2,600,000 ha, whereas the total estimated cultivated area is around 162,000 ha that about 6% of the estimated potential. The Nile of Ethiopia has about 1,500,000 ha of prospective cultivable land area, with 38,205 ha of small and big irrigated agriculture. Just 0.6% of the prospect for huge agriculture in Ethiopia's Nile Basin has been exploited. The Abbay basin, on the Fincha tributary, has the only major agricultural infrastructure in place. A further 10,000-hectare large-scale irrigation project of the Alwero stream in the Baro-Akobo basin continued to be on hold for a decade and a half or even more (Berhane and Beyene, 2001).

Table 3: River Basins/ Tributaries on the Nile

Name of basin	Area in km ²	Average annual flow In bcm	Drainage towards
Wabeshibelle	202 697	3.16	Somalia
Abbay	201 340	52.62	Sudan-Egypt
Ganale/ Dawa	171 042	5.8	Somalia
Awash	112 695	4.6	Internal
Tekeze	82 350	8.2	Sudan-Egypt
Omo/Gibe	78 213	17.9	L. Turkana/Kenya
Ogaden	77 121	----	Internal
Baro/Akobo	74 102	23.24	Sudan-Egypt
Dankel	74 002	0.86	Internal
Rift Valley	52 730	5.64	Internal
Mereb	23 932	0.65	Eritrea-Sudan

Source: The Nile 2002 March Conference, 1999: 13

Ethiopian state contains twelve river systems, 7 of which are transnational rivers that form three bodies of water which are the Nile, the Rift Valley, and the Shebelle- Juba (FAO, 2016b). In comparison to the streams within Ethiopia's borders, the Nile water is permanent and seldom varies

in reaction to seasonal fluctuations, as it does in Sudan. The Setit-Tekeze/Atbara, Blue Nile, Mereb as well as the Baro-Akobo, are the four largest streams of the Nile Basin, which collectively encompass 33% of the state.

As a result, the story of the Ethiopian state as the “pumping station of Eastern Africa” is based on the Nile Basin and its tributary, which together provide the majority of Ethiopia’s fresh water. Moreover, Ethiopia’s watershed, which includes the Nile River and other streams, flows into Eastern African nations such as Sudanese and South Sudanese, Kenyan, Somalian, Djiboutian, and Eritrea (Negm et al., 2017).

Notwithstanding abundant water supplies, Ethiopia’s water shortage concern is characterized by repeated catastrophic droughts that have resulted in hunger in various sections of the nation. Mostly in the 1980s, the hunger cycle was far worse than in 2002/2003. (World Bank, 2006). Drought has had a direct impact on rain-fed farming, which provides a living for a major section of Ethiopia’s people. Food instability was caused by a significant lack of rain-fed crops. It also destroyed grazing pastures, leading to the extinction of cattle, another significant avenue of income for Ethiopians in remote settlements. Famine also resulted in large-scale mass migrations and environmental refugees, many of whom sought safety in the Sudanese state. Famine episodes occurred across the nation, in both the highland and lowland (Keller, 1992), and starvation had become a nationwide calamity etched in Ethiopians’ collective memory (Hafez, 2019).

Water shortages had political ramifications too. Political regimes’ failure to guarantee food, mostly for rural populations, led to government collapses in 1973/4, 1984, and 1991. Ethiopian governments intervened to alleviate water shortages and famines using relocation programs, which resulted in two causes of insecurity: ethnic fragmentation and disputes, inequities between cities and suburbs, as well as civil unrest. Moreover, due to domestic and international competition, food assistance disbursement was insufficient (Keller, 1992). Since assuming office in the mid-1990s, the EPRDF has outlined agricultural expansion objectives, focusing on rural communities in the highland that are susceptible to famine and economic poverty (Kassahun & Poulton, 2014).

The Ethiopian Water Resources Management Policy emphasizes that water is a valuable resource which requires particular measures to expand owing to these water shortages and their damaging effects. Moreover, investments in the water industry are being made in tandem with a major state goal of reducing poverty, which will help Ethiopia become a middle-income nation by 2025. As a result, the administration wants to enhance and increase small-scale farming, which is based on rainwater gathering and serves a local need, as well as massive agribusiness for exporting and the agri-industry area. The administration also created River Basin Organizations and Officials

for the main water basins, such as the Nile Basin (Atakilte, 2018).

Ethiopia's water management initiatives are based on historic Nile Basin plans created under the Imperial mandate. Despite the fact that the Ethiopian state was not conquered, Britain created a strategic plan for the Abay River in 1922, which comprised the Lake Tana initiative. The major goal was to utilise the lake as storage and to manage water flows for cotton cultivation in downstream areas, particularly in Sudan's Gezira Plan. The Blue Nile Master Plan, established by the Brits in 1964, included hydraulic facilities for agricultural and electricity generation (Tafesse, 2001).

The World Bank suggested that the Ethiopian authority put more money into improving its water facilities as well as reacting to the storage of water and hydroelectric power production in its Assistance Strategy for Water Resources (ASWR) (2006), which proposed that the Ethiopian authority spends in constructing its water facilities and also respond to the storage of water and hydropower generation. This is the core of Ethiopia's current agenda for developing and improving water organizations, as well as improving human resource technical skills in the water sector (World Bank, 2006). Ethiopian administrations put these worldwide ideals and proposals into practice and began building hydrological infrastructure in order to achieve their growth targets.

The Beles Sugar Development Project, which is a massive program (75000 ha) watered by the Beles River, is among the Nile Basin's most important growth efforts. Originally, the Derg administration prioritized the territory surrounding Lake Tana as part of its socialist policies and droughts management efforts beginning in 1988. Its goal was to relocate people from the Amhara region's highlands to an area with agricultural and habitation prospects. The Tana-Beles Project, which involved dams and irrigation systems, was supported by the Italian authorities during the period (Fantini et al., 2018).

The program has been redesigned for agribusiness objectives and is currently in the Growth and Transformation Plan (GTP) and GTP II national development plans. The administration propagated the projected advantages of such a modernised farming initiative in terms of job creation, sophisticated technologies, and urbanisation, as well as dependable government services. However, like in the Sudanese state, this futuristic vision led to societal unrest. Owners were displaced from their properties in order to develop sugar cane fields, while immigrants (project employees) were relocated to the region by the authorities. Furthermore, the Project's development has been ineffective, with the sugar industries still unfinished and employees complaining about inadequate government services in the region (Fantini et al., 2018).

Another hydrological facility featured in the Blue Nile grand plan in 1964 is the GERD. The reservoir program was resurrected as a cornerstone of the country's growth strategy. The GTP II

validated the building of a hydroelectric dam by framing it as part of the green economy's battle against poverty. The administration is working to offset the effects of climate change by increasing environmental preservation and harnessing renewable energy, mostly hydropower, to support both industry and agriculture. In agribusiness, the administration sought to increase cultivated areas for crop exporting from 2 to 4 billion ha by 2020. It was also intended to reduce precipitation fluctuations (NPC, 2016). GERD, on the other extreme, would produce and transmit energy to neighbouring nations, making it consistent with its role as East Africa's water tower.

To summarize, the Ethiopian has enough rainfall and fresh water, but hunger and developmental goals have reshaped the Nile's importance, particularly the hydroelectric facilities, that have harmed international collaboration in the Nile Basin and sparked citizen action.

2.4.6. Nile question and Implications for East Africa

Since the beginning of the 1920s, when the British imperial forces' territories of the Kenyan, Ugandan and Tanganyikan states merged to establish a free market zone and subsequently a trade deal, the Nile continued to be a key characteristic in the growth of regional integration in Eastern Africa. Nile had a role in the initial EAC's growth deliberations, which began in December 1967. Nevertheless, after the society's humiliating fall in 1977, hostilities between the three Eastern African republics kept the Nile problem off the diplomatic table for the next twenty years. The EAC's re-emergence in post-Cold War Eastern Africa as a conduit for international competition, growth, and resolving conflict post-1999 heralded the re-emergence of regional integration. This recovery was facilitated by a number of interconnected elements. Firstly, doctrinal tenets such as Ujamaa of Nyerere, the socialist blueprint of Obote, and the state capitalism of Kenya disintegrated, removing political hurdles to collaboration. A developing shared connection of liberal principles centred on democratisation, the rule of law and civil rights was linked to this. Thirdly, the East African governments were concerned about their own marginalization while local groups became stronger in other regions of the continent.

The preliminary treaty creating the Eastern African Society was signed by the three Eastern African states in 1999, as well as the EAC was re-established in July 2002. The EAC's main goals are to promote "programs and policies aiming at broadening and strengthening partnership among member nations in political, socioeconomic, social, and cultural domains, technology and research, defence, security, and judicial and legal concerns for common advantage". This extensive scope has allowed it to handle a wide range of local concerns, the most notable of which being the disagreement over the usage of Victoria lake and the Nile.

2.5. Power Relations in the Blue Nile

Power ties, ideological viewpoints, and intergovernmental agreements are all affected by the ever-changing character of social and political procedures at the global, territorial, and local levels. Similar may be said for hydropolitical developments. Throughout the Nile, threats to the current system created by Egypt's ancient hydro-hegemony have evolved as a result of gradual shifts in the larger geographic environment, intergovernmental negotiating procedures, and internal developments within each upstream nation. Unlike the previous century, when the hegemony of Egypt on the Nile river was solidified, the dawn of the twenty-first century saw the upstream riparian states take a more aggressive involvement in combatting Egypt's entrenched dominance.

Large increases in the three directions of power by other riparian nations, along with Egypt's loss of influence, have helped to equalize historical power imbalances in favour of upstream governments during the last twenty years. Ethiopia's participation in developing counter-hegemonic policies, particularly, has steadily altered the hydropolitical landscape in the region (Swain, 2011). Ethiopian state has not only enjoyed a term of relative social and political calm since 1994, as well as steady economic progress and a rise in influence in the region; however, it has also expressed its dissatisfaction with alleged inequities in the management and use of the river resources (Arsano & Tamrat, 2005). Its leadership contribution to the NBI's negotiating procedures, diplomacy endeavours to strengthen partnerships with other riparian nations, enhanced contribution to the complexities of territorial cooperation via trading activities, capacity to rationalize its discourses on Nile administration and extra efficiency in hydraulic advancements are all influences that have defined a transition in the power relationship inside the Nile river basin.

The possibility of replacing the past government of Egypt's hydro-hegemonic influence with the latest phase of collaboration and incorporating strategic planning of the Nile's water supplies is greater, and the institutionalization of mediation venues (such as the NBI, the Tripartite Committee between Sudanese, Egyptian, and Ethiopian, and the 1997 UN Watercourse Convention) reflects an enticing stride in the Nile's lengthy tradition of the acrimonious clash. Nevertheless, unilateralism remains a possibility for riparian governments (e.g., the building of the GERD, Egypt's 5-year boycotting of the NBI), and procedures of trust development must be fostered in an attempt to improve the parties' continuing antagonistic behaviour. Whether the Ethiopian state will supersede the Egyptian state as the hydro-hegemon of the disputed basin in the long run, whether a new regime of successful collaboration will emerge, or whether "water conflicts" may ensue from these shifting power dynamics, continue to be open for discussion.

2.5.1. Relations and Power Struggles of Conflicting state

The Horn of Africa has historically been a volatile and war-torn region, as shown by periodic food shortages and intra and interstate violence (Alemu, 2014; Plaut, 2013). Throughout the cold war, the area was a key secondary region of struggle as the Soviet bloc, and the US-supported West supported opposing administrations militarily and politically. The independence of Eritrean and South Sudanese states, Africa's only post-colonial cases of the split, demonstrates that the area remained volatile after the cold war. The Horn is always a prominent target of the Gulf conflict's warring sides.

2.5.1.1. Ethio-Egyptian Relations

When Egypt's direct claims to the Eritrean state were rejected, Gamal Abdel Nasser, Egypt's new president, initiated a push for the Nile Valley's unification. His "unification" idea, on the other hand, appeared to be focused on extending Egypt's sovereignty over the Ethiopian state, Eritrean, Sudanese, Somaliland, Somalian, Ugandan, and Kenyan. In any event, the idea fell through with Eritrea's reunification with the Ethiopian state in 1952, Sudan's freedom in 1956, and Somalia's freedom in 1960.

Nasser has known Haile Selassie from his time as an Egyptian army commander serving in the Sudanese state. Nasser visited the king in 1941, during the Ethiopian emancipation battle, while the king was reforming the anti-Fascist soldiers from the Sudanese state. Nasser invited Haile Selassie to tour the Egyptian state many times after becoming president in 1952. The emperor had turned down the invitation on several occasions. In effect, in the last month of 1956, the emperor directed his envoy to the Sudanese state, Melesse Andom, to meet with Nasser, who was holding on to the concept of Nile Valley unification. Melesse Andom is historically reported to have made comments that were harsh and confrontational to the Egyptian authorities. He blamed Egypt for interfering in the affairs of the neighbouring Arab states as well as nursing, and military ambition, which did not go down well with the Ethiopian state as they found it very difficult to have trust and confidence in it. Nasser seems to have begun his endeavour to weaken and disrupt the Ethiopian state after this encounter. Egyptians have never officially recognized that destabilizing the Ethiopian state was, and remains, one of its foreign policy goals. It would be a breach of international law to do so. To be certain, any proof of this effect would be classified by the Egyptian government. Nevertheless, there is considerable evidence that the exploitation of the Blue Nile river has long been a major issue for the Egyptian administration.

Radio Cairo's transmissions began to inform Muslims in Ethiopia of their "core commitments." Scholarship for Eritrean Muslims at Al-Azhar University quickly came, and then Cairo turned into the Middle East's epicentre for the Eritrean Student Union. A temporary military training centre for Eritrean people was established in Alexandria in 1958, whereby several of the country's prospective military chiefs underwent their basic training. Erstwhile, Eritrea's Parliament President Idris Mohammed Adem, Islamic League Secretary General Ibrahim Sultan, and Eritrea Labour Unions President Wolde ab Wolde Mariam, among others, were invited to visit the Egyptian state. Wolde Ab received a special radio show and started broadcasting from Radio Cairo to the Eritrean state. He aimed to destabilize Haile Selassie's government by encouraging the people of Eritrea to pick up guns and fight for independence (Daniel, 1994).

By destroying Eritrea's UN-sponsored federal reputation in 1960, Haile Selassie's administration had established Eritrean territory as Ethiopia's 14th province, and the Egyptian state had taken the opportunity of the circumstances by establishing a base in Cairo for the Eritrean Liberation Front, or ELF. The front marked the commencement of Ethiopia's longest and most militarily and financially crippling civil conflict in recent times. The ensuing conflict placed the Muslims of Eritrea against its Christian counterparts, highland settlers versus lowland settlers, the ELF against the EPLF, and the Eritrean elite majority against Addis Ababa-based administrations, contributing significantly to political upheaval, economic depression, and social unrest. Cairo's subtle and overt involvement in the formation of the ELF was clear. In reality, the notion that the ELF was ready to undertake armed operations was well-kept information in Egypt even two years before the insurrection began. Furthermore, the Embassy of Ethiopia in Cairo had informed the Ministry of Foreign Affairs of Ethiopia that the Egyptian state was planning an ELF military insurgency (Daniel, 320-336).

Because of Cairo's nice offices, the Arab League's April 1962 convention pledged the ELF its complete sympathy and assistance, despite the fact that it was asserted that the Eritrean people were Arabians and largely Muslims. They were fighting forces including Zionism, Western imperialism, and Ethiopian imperialism. In contravention of its Non-Aligned Movement membership, the Ethiopian state had given the US military outposts from which to surveil the Soviet Union and Arab nations in the Middle East. Ethiopian state has granted Israel entry to several of the Red Sea's vital islands, such as Dahlack, where Israel reportedly established military facilities to threaten the Arab world's security and stability, and that the Red Sea ought to be regarded as an Arab lake since all of the governments around it are Arabs. The previous plan's main goal was to obstruct Israeli sailing on the Red Sea and to isolate the Ethiopian state by assisting Eritrean, the Ethiopian state's Red Sea territory, in gaining freedom and joining the Arab League. Those and other similar arguments were used to explain Egypt's aggressiveness and maliciousness, as well as the

participation of states such as Syrian, Iraqi, Libyan, Kuwaiti, Yemeni, and others. Egyptians excelled in turning the Eritrea crisis into a continuation of the Arab-Israeli conflicts by exporting what was fundamentally an Ethiopian internal issue and using Ethiopia's dilemma to its benefit (253-336).

Considering the implications of "cold war" propaganda and power politics, weakening Haile Selassie's pro-American and pro-Israeli administration was critical for the Egyptian state. However, its interests in the Blue Nile waters played strongly on its political priority. Some could argue that the overarching purpose of Egypt was its anticipated necessity to wield more influence to compel the Ethiopian state to cease some of its river operations and to counter Ethiopia's danger to the Nile flows. By sponsoring the Eritrean insurgency, the Egyptian state ensured that Ethiopia would spend its energy and funds on putting down the insurgency in Eritrea—resources that could be used to access the Blue Nile for growth reasons. Egypt significantly damaged Ethiopia by supplying the essential military, intellectual, political, and diplomatic backing for the insurgency. Scores of civilians were murdered, others were displaced and relocated, and huge amounts of money in assets were damaged as a result of the 31 insurgencies (Daniel, 1994).

Simply put, the resulting chaos and volatility benefited Egyptians. Egypt was willing to use these benefits to safeguard the circulation of an inordinate quantity of water to its land, as well as to push Ethiopia to waste its limited resources, and in the pathway, to form an alliance with the United States and Israel at one period, and with the Soviet Union, the Socialist states of East Europe, and Cuba at the other, with all the repercussions that such coalitions comprised.

2.5.1.2. Sudan-Egypt Relations

Through an ideal mix of power resources, Egypt has sustained a dominant hydropolitical stance in the Nile Basin for several years. Nevertheless, Egyptian regional standing as a dominant power has lately dropped dramatically due to domestic crises, other factors like the developments in the Middle East's regional power balance, and a rising imbalance in relations of power in the Basin. Egyptian state's loss of power over its neighbour to the south, Sudanese, which was once its only significant partner in the Nile basin, is a striking manifestation of this transition.

While ties between Egypt and Sudan were tense and occasionally confrontational in the post-colonial period, the Egyptian state was able to control and regulate Sudan's conduct in regard to its stance on the Nile's waters. Sudanese had independence on January 1, 1956, becoming the sub-Saharan African region's first sovereign nation (Warburg 2003). Removing Egypt's King Faruq in 1952 by the military called the Free Officers Movement, along with the British quick fall as a

worldwide force after WWII, established Egypt as the dominating nation on the River Nile.

While the Suez Canal was critical to the British economic growth and naval might, the English imperial government valued Egypt in terms of the Nile waters as an essential farming resource. London secured Egypt's "historical rights" to the Nile rivers via water treaties. A deal struck between the British and Ethiopian authorities in 1902 to resolve the border between Ethiopian and Sudanese states stated that the Ethiopian state would not build any infrastructure initiatives on the Blue Nile, which could restrict the streaming without the permission of the United Kingdom and Sudanese government. Another Nile Water Agreement (NWA) was signed in 1929 between Egyptians and the United Kingdom (on the representation of the Sudanese state) that provided up to four billion m³ of river water to the Sudanese and 48 billion cubic m to Egyptians. This means that the 1929 agreement recognised Egyptians' hegemonic status on the disputed water. The 1929 accord granted Egypt the power to superintend any initiatives further up the river than its countrywide limits. It also resulted in the building of the dam of Jebel Aulia in 1937, in southern Khartoum, to manage and store freshwater for Egyptians. This reservoir was restored to Sudanese in 1977; nonetheless, it got outdated with the building of the Aswan High Dam. The Aswan High Dam was a critical path toward prosperity as well as economic might of Egypt, supplying energy and consistent water supplies for agriculture while also safeguarding Egyptian lands from droughts and floods (Shama, 2013: 27). Furthermore, this arrangement gave Egyptians the authority to oversee the utilization of river Nile in Sudan and to prohibit any river infrastructure initiatives that might interfere with the stream of its water allotment (Deng, 2007). Sudanese have since partnered with Egyptians in Nile water conflicts, undermining its ability to be viewed as an impartial player by upstream governments in prospective water conflicts in 1971. (Cascao et al., 2017). In order to secure additional Nile water, Sudan's legislature requested the repeal of the 1929 agreement and declined to accede to the Aswan High Dam of Egypt.

Sudan-Egypt ties took another turn on May 25, 1969, when the Sudanese leader, Jafar al-Nimeiry, was overthrown by the Sudanese military. The Nimeiri administration was defined as pan-Arab, styled after Nasser's revolt in the Egyptian state, and Egypt's assistance aided Nimeiry's consolidation of power. During the leadership of Egypt's Anwar Sadat, a unique connection bloomed when Sudanese and Egyptians reached a deal on economic and political confederation in February 1974, backed by the toughest cooperative security pact between Egypt and any other state (Khalid, 2003: 173). This deal was precipitated by a failed seizure of power against Nimeiry, that Libyan President Gaddafi was suspected of supporting (Ogunbadejo, 1986: 38-39).

Egypt-Sudan ties reached a record low with the ascension of Umar al-Basher, who deposed Sadiq al-Mahdi's civilian administration in a nonviolent military takeover in June 1989. This

takeover of authority by the National Islamic Front (NIF) marked a pivotal moment in Sudan's foreign affairs, especially with regard to the Egyptian state, which had the ability to segregate the government of Sudan in the stormy 1990s and then beginning of the 2000s. Bashir, like past military leaders, required Egypt's backing to solidify his control and quash the resistance. Bashir paid his maiden international trip to Egypt, the first country to recognise his authority. Egypt's backing, especially, was critical for Bashir throughout the ensuing civil conflict in the Sudanese state (Khalid, 2003).

Eventually, Egypt's leadership learned that the military takeover was orchestrated by the NIF Islamist group, which subsequently became the National Congress Party (NCP). Sudanese state declared itself the Islamic Republic, and the Islamist public diplomacy of Al-Basher made him create an affiliation with Hassan al-Turabi, a man that regarded the revolution of Iran as a blueprint (Burr & Robert, 2003). The Egyptian state's concern over the Sudanese state disseminating its Islamist doctrine in the area corresponded with Sudan's new affiliation with revolutionary Iran and a rise of militant Islamic groups such as al-Gama'a al-Islamiyya and al-Jihad in Egypt throughout the 1990s. Iran made inroads in Egypt's southern border as a result of the geopolitical restructuring. Egypt also blamed Sudan for aiding the Muslim Brotherhood, Mubarak's most significant and organised political opponent. Egypt and Saudi Arabia were both concerned in 1990 by a Sudan-Libya deal made by Gaddafi and Al-Basher (Simons, 1996: 277). When Bashir was globally ostracized for supporting Iraq's attack on Kuwaitis and lost US military and monetary help, the Sudan-Iran friendship was reinforced. The most significant friend of Sudan in the subregion emerged Iran following the signing of a cooperation treaty by the two states whereby Tehran gave Khartoum oil weaponry as well as monetary aid (Tekle, 1996: 504).

However, Sudan's ties with neighbouring African nations were strained as Ethiopian, Ugandan, and Algerian states accused Sudan of assisting and recruiting rebels as well as armed organizations from their own nations. To combat Iranian, Egyptian and Saudi Arabian states supported the Eritrean state in its dispute with the Sudanese, and the region's states that are against Al-Bashir improved their assistance for the South Sudan People's Liberation Movement (SPLM) as well as the National Democratic Alliance (NDA), which were founded in 1989 by Bashir's adversaries, which include political groups, labour unions, as well as some officials of Sudan's military services (Hassan, 1993). The SPLM improved its military capabilities and reinforced its political and military partnership with resistance organizations in northern Sudan with material assistance from the United States and its allies (Haywood, 2014: 151-52). Such events damaged the Bashir dictatorship, estranged Sudan from its Arab and African neighbours, and isolated the government from the International Monetary Fund (IMF) and World Bank (Kevane & Gray, 1995:

Egypt-Sudan ties deteriorated visibly in 1995 when a Sudanese-supported Islamist militant group tried to murder then Egypt's leader Hosni Mubarak when he was participating in the conference in Ethiopia's capital. Egypt charged President Hassan al- Turabi of Sudan, while the Ethiopian state cuts diplomatic ties with Sudanese. Sudanese state was sanctioned by the United Nations Security Council, and the United States placed the state on its register of Terrorist Organisations (Woodward, 2016: 30-31).

During the 1990s, Egypt's physical and diplomatic strengths were successful in keeping Sudan at bay. When tensions between Egypt and Sudan erupted, rekindling an ancient boundary issue, Egypt demonstrated its willingness to deploy military action. Sudanese state granted a license to a Canadian oil corporation in 1992 to conduct oil exploration in the "Hala'ib Triangle" region, which is claimed by Egypt and Sudan. Egypt reacted quickly by dispatching soldiers to take over the territory (Barltrop, 2011: 115). Sudan appealed to the United Nations Security Council but was unable to regain control of the territory. Egypt isolated the Sudanese leadership locally, globally, diplomatically, and financially in the 1990s. Egyptians also jeopardized government security in Khartoum by allying with Sudan's resistance. In the near term, Egypt was successful in keeping Sudan at bay. Sudanese failed to carry out its threats to use the Nile flow of water as a missile over Egyptian because it was afraid of Egypt's army's reaction (Adar & Check, 2011: 52).

From January to April 1996, Egypt made progress as a non-permanent member of the United Nations Security Council in having the Security Council needs Sudan to return culprits in the assassination attempt of Hosni Mubarak, implement mobility and strategic restrictions on the Bashir government and representatives of the Sudan military services, and afterwards put a space economic blockade on Sudan Airways, effectively cutting Sudan off from the air carrier production firms (Mikhail, 2008: 99-100).

Bashir knew that Sudan's affiliation with Tehran, as well as other anti-Egyptian regimes, had not yielded financial or physical gains. Following ages of seclusion, the only option for Khartoum to handle its faltering economy and position as a global "pariah" was to repair ties with Egyptians. Only then would Bashir be able to deescalate. Bashir had to soften his stance toward Mubarak in order to seek respite from Egyptians' mounting regional and international pressure. Furthermore, the Bashir administration hoped that by leveraging Egypt's strong links with the United States, Sudan might be removed from the United States' list of terror states. To gain the backing of Egypt and the United States, Bashir severed connections with Hassan al-Turabi, deposed him as the ruling party's secretary general, and eventually jailed him. The removal of al-

Turabi was also necessary in order to initiate reconciliation discussions with the SPLM/A, which eventually led to the Kenyan peace negotiations (De Waal, 2004).

Egypt mobilized Gulf Arab states and several African nations in support of Bashir's new alliances. While earlier supporting Sudanese rebels, Ethiopian, Eritrean, and Ugandan states attempted to reconcile with Sudan since they were all immersed in conflicts of their own. Following the Arab uprisings of 2010-11, Egypt-Sudan ties were influenced by altering politics in the region and the Horn of Africa, as well as the manner whereby each nation's internal politics dictated its international affairs. The collapse of Mubarak provided Egyptian authorities with a chance to refocus Egypt's ties with its Nile-basin neighbours. Furthermore, Mubarak was deposed as Barack Obama's government proclaimed its desire to shift US grand strategy away from the Middle East and toward East Asia in order to realign the US-China partnership.

Sudan gradually linked its positions on the Nile with the Ethiopian state in the wake of Mubarak's resignation in February 2011. In relation to growing rising prices and a declining market, Sudan's economy was hit hard when it lost a large portion of its oil profits following South Sudan's separation in July 2011. Sudan had one of Africa's fast-expanding economies throughout the preceding decades, thanks to oil production in the south. Though the separation of South Sudan stopped years of civil strife, it weakened the Bashir administration's capacity to preserve his governing alliance by mobilizing government resources. Sudan wants to benefit from GERD by obtaining low-cost power and steady river inflow volumes. It could reduce the risk of yearly flooding and enhance droughts management, both of which are critical to Sudan's agricultural growth and the country's sustained connections with the Gulf nations.

Furthermore, in the aftermath of the 2007-08 global and economical food crises, the Arab Gulf governments sought strategies to lessen their exposure to worldwide food trade disruptions. The Arab countries' investment in Sudan's agribusiness provided the latter with the courage to map its Nile basin strategy independent of Egypt's worries. Massive hydrological initiatives and food enterprises in Sudan were sponsored by Arab Gulf nations. Those initiatives have sparked conflict between Ethiopian and Sudanese states and Egypt on the other side. The former two governments argue their right to utilise Nile waters in order to increase agricultural output and develop connections with Gulf oil-producing nations. The shifting power balance, influenced in particular by the Gulf states' growing concern in the River Nile, benefits the Ethiopian and Sudanese states. In reality, when high-profiled Saudi authorities toured the dam in December 2016, they backed Sudanese and Ethiopian states on GERD.

The Gulf Cooperation Council also considered purchasing electricity generated by GERD in order to expand its sources of energy and conserve petroleum for sale. The absence of regional organizations and agreements governing the use of Nile waters by riparian governments has made it easy for Gulf states to enhance their dominance in the basin via bilateral agreements. This has given Sudan and Ethiopia's officials' additional clout and negotiating power in their aspirations to construct new hydropower dams on the Nile.

Egypt must fight not just with its neighbours to the south but also with new major powers in the Middle East and the Horn of Africa, primarily Saudi Arabia and the United Arab Emirates, and an area more fragmented by regional tensions. Saudi Arabia and the United Arab Emirates have consistently utilised their financial and political muscle to preserve their interest in the Red Sea and the Nile Water's sources, both of which are critical to Egypt's national security. The emergence of Saudi Arabia and the UAE's leadership position in African-Arab combined activities was obvious in 2016 when Sudanese, Djiboutian, and Somalian severed relations with Iran following the killing of a Shiite priest in Saudi and the subsequent demonstrator assault on the Saudi Embassy in Tehran (Aman, 2017).

Furthermore, the June 2017 Gulf Crisis, which placed pro-Brotherhood Doha versus Riyadh, the UAE, Bahraini, and Egyptian states, had an impact on Sub-Saharan African states, which were pressed to pick sides in the war. Surprisingly, Ethiopia and Sudan benefitted from the turmoil by remaining neutral and receiving investment from both Qatari as well as some GCC governments. Sudanese have signed a number of defence and commercial treaties since the Arab Spring and has sent numbers of Sudan soldiers to assist the Saudi-led battle in the Yemeni state.

Cairo, again, has restricted its involvement in the ongoing battle in Yemen to the rollout of jet fighters and naval vessels, owing to the fact that it is fighting insurgencies in Sinai and on its western frontier with the Libyan state and extracting its expensive casualty rates throughout its engagement in Yemen in 1962-66. Rather, in 2016, Egyptians ceded control over two tactically positioned Red Sea islands, Tinar and Sanafir, to Saudi Arabia, ostensibly in exchange for the latter's backing for Sisi's coup against Morsi and prospective Saudi assets. Shortly afterwards, Sudan demanded that Egypt discuss the status of two contested coastal regions (cities), Halaib and Shalateen, on the African shore of the Red Sea, or take their case to the International Court of Arbitration. Sudanese alleges to have paperwork proving its authority over the main cities.

Egyptians have also been unable to exert authority on Sudan's foreign affairs, notably its close partnership with Doha and Ankara, two regional foes of Egypt connected by their backing for

the Muslim Brotherhood in Egypt. Egyptians were frightened when Sudanese inked a 99-year lease with Turkey on Suakin Island, a strategic Red Sea port. The concession enables the Turkish, which also has military facilities in Somalia and Qatar, to increase its tactical presence in the Red Sea region while also developing military ties between the two countries. Those military outposts provided Turkey with influence over the Red Sea liberty of passage and amplified the country's assessment of Turkey's foreign policy as a danger to Egypt's national defence. On June 5, 2017, during the Qatar-Gulf Crisis, Ankara came to Doha's aid by constructing a humanitarian aerial link and deploying extra soldiers to its military station in Qatar. The rapid Turkish reaction to this situation has strengthened its ties with Qatar and showcased Turkey's renaissance in the Middle East. Egyptians regard Qatar, Turkey, and Sudan as pro-Muslim Brotherhood governments whose unity poses a security risk. Sudan has a very tactical position for Turkey, a marketplace for its goods, and a rich territory that Turkey may utilise. In November 2018, Turkish and Sudanese established a cooperative agribusiness and livestock firm in Sudan, in addition to defence partnerships. The existence of the enterprise expands Turkey's regional importance, as the Sudanese state is a vital entrance to countries in Central Africa (Woldemariam, 2019: 185).

Furthermore, Turkish President Erdogan wishes to limit the impact of the Fethullah Gulen organization on the African continent, which Turkey accuses of organizing the July 15, 2016 coup attempt in the Turkish state. To a certain degree, Turkey spares the Khartoum leadership of its reliance on volatile Gulf friends and serves as a crucial counterbalance to the Egyptian state. Egypt has frequently blamed Sudan for hosting Muslim Brotherhood activists who fled Egypt following Egypt's military's removal of Muhammad Morsi in July 2013. Issues developed when Sudan prohibited the importation of agriculture and farm animals' goods from the Egyptian state in May 2017, accusing Cairo of assisting insurgents seeking to destabilize the Sudanese regime (Reuters, 2017). Saudi Arabia and Egypt have been unable to resist the burgeoning Sudan-Turkey partnership due to their separate involvement in the Yemeni conflict and the Sinai uprising. The Egyptian state, for its part, requires Sudan to keep its portion of the Nile river and cannot risk a worsening in their relationship. As a result, several forces have reduced Egypt's Nile dominance. The strategic developments in the Horn of Africa and the Middle East have provided the Sudanese state with fresh partnership opportunities and freed its authority from the constraints of its water accords with Egypt. Lastly, the Sudanese prospective for the agricultural extension has necessitated a more dynamic involvement in the Nile basin as well as an association with the Ethiopian state in order to accomplish its exporting and economic goals.

2.5.1.3. Sudan-Ethiopia Relations

For years, the ties between Ethiopian and Sudanese states have alternated from peace to

strife. The proximity of the two neighbours' geography, culture, history, and economy proximity has rendered them tactically crucial and subject to the involvement of big forces, Middle Eastern states, and Egyptians in their bilateral ties. Yet, the dynamics of hydropolitics of the Nile have been the most crucial factor in shaping the two states' historical past, contemporary, and prospective interactions. Water shortage has been an increasing concern along the Nile, where the dry environment and regional warfare have compounded the situation. Population explosion and fast urbanization in this region have resulted in food and electricity shortages, sewage concerns, and increasing demand for irrigated agriculture. As a result of these difficulties putting additional demand on current water supplies, obtaining water supplies has become a question of life and death (Yacob, 2007: 117).

Previously, the 1929 Nile Agreement involving the British and its Egyptian territory prohibited any of the upstream governments from reducing the amount of the Nile pouring into Sudan and Egypt. The pact stipulated that no irrigation or hydropower works on Nile streams may be undertaken without the Egypt administration's authorization if such projects could produce a reduction in water level that would be injurious to Egypt. 30 years later, Egyptian and Sudanese settled on the 1959 Nile Water Agreement, that guaranteed them exclusive rights to the Nile's water resources and maintained veto authority over any upstream initiatives.

In terms of the abovementioned counter-hegemony framework, that is precisely what upstream riparian nations, led by Ethiopians, have been doing to undermine Egypt's longstanding hegemony on Nile river water. Ethiopia has taken a number of steps to challenge Egypt's use of the Nile's water resources as its negotiating strength has grown. The nation has lately started to combat Egypt's rhetoric of 'historical right' by proposing its preferred idea of 'equal usage.' It has also openly rejected the 1959 deal because it perceives it to be unjust; therefore, Egypt's authorized rhetoric against Ethiopia's water rights has lately begun to collapse. Ethiopian state has also undertaken an aggressive diplomatic effort known as 'trans-border advocacy.' It, for instance, submitted multiple "notes of complaint" to international organizations, denouncing Egypt's New Valley Initiative and the Toshka Canal, a massive land redevelopment program that would transfer water from Lake Nasser into the deserts (Beyene et al., 2018).

Ties between Sudan and Ethiopia were tense under the Derg government (1974-1987). Sudanese state-backed Ethiopia and Eritrea freedom activities, whereas Addis Abeba was associated with the Eastern Bloc. Things began to alter in the second half of the 1990s. Bashir initiated a program of conflict resolution and friendly amicable ties that lasted twenty years as part of the Sudanese stance on the Renaissance Dam. According to Young, this may have been Bashir's

most significant foreign policy success (Young, 2020).

Sudan's historical stance on Nile basin resource utilization has been ascribed to a 1959 treaty with the Egyptian state. As a result of this arrangement, Sudan became Egypt's slave, as the former could not independently cancel the conditions of this global duty without the latter's prior assent (Cascao & Zeitoun, 2010: 29). In another sense, even while Sudan is aware that the deal is unjust and adverse to their objectives, and hence must be annulled, they continually fail to do so in order to escape global criticism. Before the building of the Ethiopia Renaissance Project, Sudan was influenced by Egypt since the former could not function as an autonomous player on the River. Formerly, the Sudanese state was mostly ruled by Egyptians, that was a traditionally dominating force over the Nile water supply. As a consequence, Sudan had no choice but to submit to Egypt's dominant philosophy. Furthermore, in the earlier days, Sudan was unwilling to pursue an opposite foreign policy direction against Egypt over the Nile in order to alleviate enormous political stresses from other Arab states, which saw Egypt as a regional dominance and a strategic powerhouse representing their interests.

Ties stayed cordial with the passing of Prime Minister Meles Zenawi in 2012. The ascension of Abiy Ahmed to office in Ethiopia in 2018 created new instability in bilateral ties. The key cause was Ethiopia's escalating political strife. At the time of writing, this had erupted into a full-fledged conflict between state troops and the Tigrayan People's Liberation Front (TPLF), which had governed Ethiopian politics since Mengistu's collapse in 1987. Questions have been voiced in Addis Ababa concerning a prospective Khartoum-Tigray partnership since Sudanese political and military authorities formed strong ties with Tigrayans under Meles' administration. Abiy advised Sudan not to meet with the TPLF in 2018 (Young, 2020). Given recent events in Ethiopia, as well as the battle over the Renaissance Dam, Addis Ababa will be suspicious of any indications that Egypt or Sudan is assisting the Tigrayans. So far, Sudan, along with other nations and the African Union (AU), has volunteered to arbitrate in the Ethiopian crisis and, on November 30, reported the arrest of one of the Tigray rebels' heads.

Their common border has also proven to be a source of contention in Sudan-Ethiopia ties. This is especially true in the Al Fashaga region, southeast of the Sudanese town of Gedaref, which contains 600,000 acres of rich land that has proven appealing to impoverished Ethiopian farmers. On the Ethiopian side, a major boundary problem that arises occasionally involves the transit of small guns from Sudanese to Ethiopian rebel forces. On the other side, Abiy was summoned and performed an important duty as a broker between the participants in the Sudanese uprising, paving the path for the consensus on temporary measures. This underscores the reality that key players in

Sudan's reform want even deeper ties with Addis Abeba, which they perceive as a more democratic alternative to Egypt and the Gulf states. There is also the issue of ethnic groups straddling boundaries, and for many years, Sudan offered shelter for huge Ethiopian (and Eritrean) populations as well as assistance for the rebel organizations that rose to power in 1991 with the fall of the tyrannical Derg dictatorship under Mengistu Haile Mariam. Hundreds of Tigrayans have crossed the Setit River into East Sudan, reversing the flow of migrants. This region of Sudanese has experienced an increase in inter-ethnic and city conflict over the previous two years, and the flood of refugees, especially ethnicities with tribal connections on the Sudanese half of the boundary, might exacerbate the situation (Young, 2020).

Ethiopian and Sudanese states have been at odds for years over the 260 km² al-Fashaga border area, which Ethiopia refer to as the Mazega. According to imperial period maps put up more than a century earlier, the land straddling the eastern border of Sudan's heartland Gedaref area and the western boundaries of Ethiopia's Tigray and Amhara provinces technically belongs to the Sudanese state. However, its borders were never fully defined. Omar Al Bashir and Meles Zenawi – the long-serving rulers of Sudanese and Ethiopian states at the time – consented in 2007 to a partnership arrangement under which Ethiopia and Sudan inhabitants may jointly farm the land, with both the parties consenting to official division at a subsequent time. Change in leadership and political upheaval in both nations have exacerbated ancient enmity between both neighbours, bringing the al-Fashaga issue to the forefront. Hundreds of combatants and civilians have been killed in confrontations between the armies of the two nations. If the conflict escalates, both nations' unstable political transformations will be jeopardized. No side wants war, but confrontations might flare up as a result of an accident or a mistake. A larger battle may enlist allies in the region, ultimately destabilizing the Horn of Africa (Young, 2020).

Fast forward to 2021, the Ethiopian state accused Sudan of seizing Ethiopian territory by capitalizing on Sudan's concerns with the Tigray war. Sudan denied such allegations, claiming that it has reclaimed 95% of its captured areas. The two nations' boundary conflict occurs in the territory of Al-Fashqa, where the Ethiopian Amhara province joins the Sudanese Gedaref state. According to Sudan's Foreign Ministry, Hamdok's action plan seeks to inspire Ethiopian factions to attain a thorough cease-fire in the Tigray and enter into discourse to safeguard Ethiopia's harmony and unity in the structure of his chairmanship of the Intergovernmental Authority on Development (IGAD) (a community that comprises of the Kenyan, Ethiopian, Ugandan, Djiboutian, Sudanese, and Somalian states) (Aman, 2021).

According to Ann Fitz-Gerald, a professor of international affairs, Sudan's choice to work with Egypt and pick a new strident tone toward its neighbouring ally has harmed the ties between

Sudan and Ethiopia. According to her, individuals in charge of peace negotiations must be perceived as reasonably objective and unbiased by all sides, and Sudan's earlier aggressiveness towards Ethiopia in several instances implies that it does not match this criterion. The GERD discussions did not advance even an inch in the first nine months of Tigray's civil conflict. Similar might be predicted in the following months: the more the Tigray conflict worsens in Addis Ababa's view, the more rigid the national government would be on topics like the GERD, which are emblems of Ethiopia's nationality (Aman, 2021).

Sudan-Ethiopia ties have shifted past pragmatic partnership to outright enmity in less than two years, owing to unstable regimes in both states and arduous discussions over Ethiopia's massive project. Sudan sees the Tigray crisis as a chance to obtain economic and geopolitical advantages, including a beneficial GERD arrangement. In Addis Ababa, Abiy's drive to assert dominance amid heightened rising conflicts has fuelled internal conflict and exacerbated instability, notably in Tigray. Difficulties at home will hamper attempts to settle the situation for both administrations (Aman, 2021).

2.5.2. Power Struggles

2.5.2.1. The Diminishing Power of Egypt

The Egyptian state was formerly a major African authority. This was obvious and appeared to be uncontested. Countries across the continent of Africa turned to the Egyptians among the first governments to gain freedom from imperialists. African governments regarded Egypt as a standard of administration and a basis of military and political support throughout the post-colonial era. The Egyptian state's sphere of impact shrank significantly over time. In order to comprehend the significance of this external consideration, as well as its impact on the preliminary installation of the GERD, this part highlights Egypt's early power position, how progressively Nile agreements eroded Egypt's primacy, and how Egypt's vulnerable position started opening a possibility for Ethiopian state to roll out future Nile projects without having to worry as much about Egypt's threat as it did previously.

When analysing the Egyptian state, it is critical to remember that the state has traditionally exhibited features of dominant power. Egypt wielded exceptional influence in African nations throughout the twentieth century as a result of its politics, military, and economic dominance. This effect might be considered benign or malignant, but it must eventually be recognized as pervasive. Egypt acquired regional prominence as early as the post-colonial era. Then-President Gamal Abdel

Nasser voiced against “Western masters” and condemned South Africa during the apartheid practices (Whittington et al., 2014). These efforts paved the way for nationalism and liberation campaigns across the region, demonstrating how Egypt’s power was all-encompassing.

At the same time frame, the Egyptian state aspired to broaden its influence. Egyptians sent technical professionals to poorer countries and even permitted African youths who were refused the chance to study in EU states to join Egyptian colleges (Barfi, 2018). Such initiatives fostered relationships with neighbouring governments and established Egypt in a prominent place. Egypt’s distinctive position was strengthened as it grew more engaged in the domestic matters of African countries. In the late 1950s, Egypt did support not only Eritrean secessionist groups but also offered financial backing to Somali separatist rebels. Egypt also directly supplied military aid to African regimes. Egyptian pilots were sent to Nigeria to suppress tensions even during Biafran War (Erlich, 2000). There are several additional instances of Egypt’s impact in the region and reflect the fact that Egypt had significant power throughout Africa. This was especially true of events along the Nile.

The Egyptian state was the dominant player on the Nile. Its power was unassailable since Egypt was the most influential downstream state, with a considerably powerful influence over any activity on the river (Zeitoun et al., 2006). Discourse and judicial principles were used to justify this one-of-a-kind position. From a political standpoint, Egypt purported to be completely reliant on Nile waters; the river supplied roughly 97% of Egypt’s water. From a legal ground, Egypt contended that some “historical claims” were spelt out in previous agreements, guaranteeing access to certain water allotments (Lawson, 2016: 22). These promises went back to the British Empire’s imperialism era when Egyptians were a part of it.

Throughout this period, the Nile’s waters were legislated, ensuring Egypt a strategic advantage in relation to the amount of water provided. In 1929 and 1959, 186 treaties granted 48 and 55.5 billion m³ of water annually, accordingly (Cascao, 2009). The rest of the riparian states were entirely removed from discussions, with the exception of Sudanese, which was administered by Egypt and got billion m³ each year. As a result, Egyptian sovereignty over the Nile was the current regime from the start, and Egypt operated as an unofficial regional power.

Egypt influenced Nile matters and used intrusions of retaliation to maintain its dominance (Cascao, 2009). As noted by Klare (2001), Egypt sustained its dominance via “coercion... [anytime] neighbours declared intentions for an innovative massive water plan, Egypt [was] fast to alert of disastrous results if it should progress with any policy.” Even as the Egyptian state impeded other states’ action plans, it made progress arbitrarily with attempts to influence the Nile to its maximum capabilities. Egyptians started building the High Aswan Dam (HAD) in 1960 for flood

management and irrigation during droughts and flood years. The HAD, a hydro plant, met 15% of the nation's power needs (Ismail & Refaat, 2017)

It's crucial to remember that this gigantic undertaking went through amidst opposition from upstream countries like the Ethiopian state (Kendie, 1999). This emphasizes Egypt's dominance. It's also worth noting that, while the HAD enhanced the livelihoods of many Egyptian states, evaporation in the reservoir—which contributed to 12% of the water's yearly flow—was an unavoidable wastage in a state with a meagre water supply. Despite this, the Egyptian state continued its independent developmental initiatives, which included the land acquisition process of transforming arid regions into agriculture (Whittington et al., 2014). Upstream nations were eventually encouraged by Egyptian unilateral action to assess water use inside their own boundaries.

Egypt's influence has waned, in part due to internal, political, intellectual, and changes in the economy. Developments in the Middle East's balance of power, rising imbalance in power dynamics in the Nile basin, and fierce power struggle in the Horn of Africa have all taken their toll on Egypt's status as a major regional player. In this context, two trends have been particularly significant.

First, Egyptians moved from pan-African emancipation principles with the demise of Gamal Abdel Nasser in 1970, irrespective of how sympathetic Egypt had been towards countries in Africa. With Nasser, Egypt provided a safe haven for African refugees and logistical and diplomatic assistance to Africa's combatants (Akinsanya, 1976). Egyptians attempted to broaden its anti-colonialist front opposing the English and acquire dominance in the freshly sovereign African republics by sponsoring nationalist organizations in African states in the 1950s and 1960s. Egyptians, on the other hand, shed their leading role in the Islamic world following its devastating loss in the 1967 Arab - Israel conflict. Egyptians failed to be an example for progress in Africa after it became the poorest Arab country. Egypt's ideational dominance fell as a result.

Egypt turned towards the West with Anwar Sadat (1970-1981), receiving help from the United States, tangible rewards for his administration and military, and exposure to global financial institutions. Egyptians reached an agreement with the Israeli state and severed connections with Africa and Arab states. In reality, Sadat disbanded the African Affairs Bureau and promoted US-sponsored African groups. Egypt's projection of power came to a stop with its economic meltdown and increased reliance on Gulf states, as well as other global developments. Africa's status was diminished after the Cold War ended. The Arab world was divided after Iraq invaded Kuwait, with some supporting the US-led battle to free Kuwait and others opposing it. Fearing that

upstream governments would interfere with the Nile's water, Egypt frequently used coercive tactics as a foreign policy weapon to bring the Nile basin states to conformity.

Following Sadat, Mubarak was focused on protecting the government's protection and authority (Shama, 2013). Just after Islamists won control of the Sudanese state and the assassination attempt of Mubarak in the Ethiopian state in 1995, Egypt displayed little excitement for the Organisation of African Unity and regarded Africa via a security lens. With the exception of Abuja in 2005, Mubarak ceased participating in African summits (Landsberg & Van Wyk, 2012: 245). In both meetings, Ethiopia, on the other hand, galvanized the Nile basin nations to call for a revision of the 1929 and 1959 Nile water accords. Mubarak depended on Egyptian secret agencies in his ties with African governments because he lacked a foreign policy objective and was preoccupied with preparing his son to replace him. He was uninterested in economic union with African nations, particularly the Nile basin republics (Tawfik, 2020). Egypt's weakened influence meant it had a minor part in the talks that culminated in South Sudan's liberation in July 2011. The separation of South Sudan effectively ended Egypt's involvement in Sudan affairs.

Furthermore, in the Nile basin, new regime power-based ties between upstream and downstream governments have formed. Egypt declined to participate in new programs addressing the allocation and exploitation of Nile waters as the Nile basin governments intensified their collaboration. Consequently, the upstream states' influence has increased. The Nile basin Cooperative Framework Agreement (CFA), agreed upon in 2010 by the Ugandan, Ethiopian, Rwandan, Tanzanian, Kenyan, and Burundian states, strengthened upstream nations' negotiating position by giving them authority in determining Nile initiatives without Egypt's approval (Salman, 2013).

Egypt's involvement in the Nile Basin Initiative (NBI), which was established in 1999 to promote the river cooperatively, was terminated in reaction. The NBI was the first international treaty to involve all riparian countries, including Ethiopian and Egyptian states. Egyptians avoided the prospect of collaboration or discussion with the Ethiopian state, which contributes up to 80% of the Nile waters yearly, by withdrawing from the NBI. Egyptians did not strike a deal with the river basin governments, nor did they seek an option to the collaborative structure created by other riparians. Egypt's unwillingness to engage in freshwater deals stems from its fear of losing its old veto authority. Egypt looks indifferent to the passage of time and shifts in the regional structure of power since the 1929 and 1959 accords with Sudan established Egypt as the Nile basin's hegemon. Egypt has lost its negotiating leverage, and ability to influence other riparian governments as the balance of power has shifted.

However, the upstream riparian nations' enhanced material might have permitted their expanded use of the Nile waters, thanks to their recent political and economic rise. Through various discussions, they have increased their ideational strength. They argued their entitlement to water for expansion (Egypt's motivation for constructing the Aswan High Dam) that they had been denied under imperial accords that were too restricting. They emphasized the Nile's role in preventing hunger. They also promised improved chances for harmony and regional integration via hydroelectric power plants that would provide energy and wealth to many Africans living in the drainage basin and further. Egypt is on the defensive, unable to respond with a strong rhetorical response. The agreements and deals on the Nile, as will be detailed in subsequent pages, will further reveal how Egypt has been exerting its influence and hegemony to save its face and waning influence in the Nile Basin.

2.5.2.2. The Increased Regional Power of Ethiopia

Relations in the region evolved in the months preceding up to the unveiling of the GERD. Egypt's power to coerce nations deteriorated, and eventually, the nation was unable to exert control over regional organizations. Meanwhile, Ethiopia displayed its determination to dominate East Africa's political, economic, and military concerns. Ethiopia has gained the title of "pillar of stabilization" as a result of its better status in the area (Omach, 2000). Although some academics have hinted at it, the purpose of this section is not to indicate that Ethiopian dominance has supplanted Egypt's dominion (Cascao, 2008). Rather, the goal is to demonstrate how the Ethiopian state grew in importance in the area in the years preceding the introduction of the GERD.

Ethiopia's regional relevance has grown as its political and economic might has grown. Ethiopian states controlled regional cooperative groups and exploited their leadership positions to shape regional affairs. Ethiopian state's importance expanded as the country's military got increasingly involved in local peacekeeping and stability missions. Lastly, Ethiopia's growing connections with the United States have helped to strengthen the country's abilities while also endorsing Ethiopian engagement in the area. Ethiopia was able to progress tactical imperatives and achieve regional objectives because of its distinctive position. Due to its size, population, tactical position, and comparative stability, Ethiopia distinguishes itself as a prominent force in East Africa (LeGouriellec, 2018). A researcher explained that nations achieve valid regional power positions when they gain "internal credibility (political and economic achievements), regional credibility (geographical acknowledgement and conformity), and global validity (whether their global ties with different world authorities support or help combat their territorial authority)." (Belachew, 2014). If this definition serves as a litmus test for being a regional power, Ethiopia may already have achieved

it. An examination of economic and political processes reveals this.

Ethiopia's comparative influence rose in political and economic terms as the state established control over territorial, cooperative groups, most prominently the Intergovernmental Authority on Development (IGAD). IGAD began as a group of countries working together to tackle the dangers of droughts and hunger in East Africa (IGAD). Nevertheless, as days progressed, the organization's scope grew to include peacekeeping and military activities, as well as economic ties and cooperation among the affiliated (IGAD, 2018). Though IGAD is not Ethiopia's sole international body, it is the most important. Despite being a "foundational partner of the United Nations, the African Union (AU)... and the Common Market for Eastern and Southern Africa (COMESA), Ethiopian state promotes its regional objectives... via a powerful position in IGAD," according to an expert (Bilachew, 2016) It is vital to highlight that Egypt is not a member of IGAD. It's also crucial to note that IGAD complements the NBI and CFA by pushing partner nations to "be participants [of] the CFA" and participate in other joint endeavours (Yihdego et al., 2016). As a result, by concentrating on cooperative, geographical efforts, IGAD activities have continuously damaged Egyptian objectives.

The Ethiopian state has always been the dominant force in the IGAD. IGAD's headquarters are in Djibouti, although the organization's most important duties are in Addis Ababa: "[the Conflict Early Warning and Response Mechanism (CEWARN)] office, IGAD Facilitator's Office for Somalia, the IGAD Parliamentary Union, and the Livestock Office." (Berhe, 2017). Because of the close location, the Ethiopian authorities and the offices participating in regional activities may communicate often. Ethiopian state, for example, was successful in obtaining the critical role of heading the IGAD's "defence and stability section," and the Ethiopian state even functioned as chairperson of the IGAD from 2008 to 2014. The government may exert power in the area by creating and pursuing a growth plan based on Ethiopia's interests by occupying these distinctive authority posts.

This is particularly visible in IGAD's three key initiatives: "the peace negotiations initiative for Sudanese state," [the peace negotiations initiative for Somali state], and CEWARN for Central African Republic (Terlinden, 2004). These projects, which focused on managing conflict outside of Ethiopia, allowed Ethiopia to increase its influence on neighbouring governments' concerns.

Ethiopia's geographical influence expanded as a consequence of its dominance over the region's political and economic affairs. This was made feasible because of the use of IGAD. The importance of IGAD cannot be overstated. The IGAD is tasked by international organizations with directing the area toward increasing degrees of peace and development. This is seen by the open

assistance IGAD gets from global organizations such as the United Nations, the African Union, as well as the European Union (EU). Similarly, the EU has campaigned diligently to strengthen the IGAD's competence, citing the group's importance in advancing "political and economic cooperation in the Horn of Africa" (Harald et al., 2017). As a result, the IGAD exercises significant power over governments, pushes a territorial policy on East Africa, and possesses some international credibility. This has resulted in the Ethiopian state, the most powerful state in the IGAD, occupying a distinct power position.

In relation to the GERD initiative, in particular, IGAD has continuously backed the program. To add to complimenting Ethiopia's effort, IGAD has frequently emphasized the GERD's regional advantages and issued comments promising member nations that the project will have no negative implications (IGAD, 2018). In addition, the IGAD employees donated \$250,000 to work outright (Flintan & Imeru, 2002)). This open move emphasizes ties and, in turn, how the group achieves its stated goal of advancing Ethiopian objectives in the area.

Ethiopia's growing importance is related not only to its control over political and economic matters but also to its command of regional security activities. With approximately 138,000 soldiers, the Ethiopian state possesses one of the biggest and most capable combat armies on the continent (Berhe, 2017). It has used its troops to conduct traditional combat, counterinsurgency missions, and peacekeeping and protection missions on a periodic basis. (Le Gouriellec, 2018). This armed proficiency is a one-of-a-kind and important asset that not only boosts the state's strength but also impacts the territory's direction. The army's growing engagement in local peacekeeping missions is the best way to grasp this (PKOs) (Calliers et al., 2015). The Ethiopian state has become a prominent role in the area and altered coalitions in its favour through participating in PKOs.

Ethiopia's importance in the region expanded as the nation transitioned from participating in PKOs to spearheading the local peace process. Within the last 50 years, Ethiopia's soldiers have been relied primarily upon to serve as Africa's primary peacekeepers and security forces. From the 1950s forward, Ethiopian state soldiers participated in United Nations world peacekeeping missions. The military of Ethiopia participated in the Korean War along with international troops, facilitated attempts to improve order in the Congo during the 1960s, assisted stability and peace missions in Somalian and Haitian states, and offered substantial assistance to the African Union-United Nations Hybrid Operation in Darfur (UNAMID) (UN, 2018). Ethiopian military gained increased tactical skill and even a notable degree of sobriety and expertise as a result of completing these divergent tasks (Cilliers et al., 2015). Nevertheless, there has lately been a noticeable change.

Ethiopia's troops have grown so ingrained in peacekeeping missions that it has acquired the title of "security supplier" for East Africa (Le Gouriellec, 2018).

Following the terrorism events of September 11, 2001, the significance of African nations expanded dramatically. The Horn of Africa, along with other countries, turned into "frontline countries" in the fight against radicalization (Davis, 2007). Ethiopia was regarded by the US as a significant player in the area, with significant political, economic, and, most crucially, military might. The United Regimes collaborated with Ethiopia to ensure that extremist beliefs did not take root or expand across East Africa's less secure countries. Through 2002 and 2004, US funding to Ethiopia increased from \$928,000 to \$16.7 million, up from \$928,000 between 1999 and 2001 (Guevara, 2012). This was interpreted as a symbol of Ethiopia's growing importance, as well as US trust in Ethiopia's potential to influence regional change.

The United States used Ethiopia as an "expert" in the area, relying significantly on the country's unique understanding of East African political processes, language, and customs. Especially, activities in Somalia need a strong relationship with Ethiopia to advance US objectives in the area. Somalia was seen by the US as a fertile zone for radicals and a future leader country for Al Qaeda. The existence of the Union of Islamic Courts (UIC), a fundamentalist group that assumed command of Mogadishu in 2006, backed up this decision. The Ethiopian state was asked to intervene in Somalia as the regional peacekeeping force (Davis, 2007).

Ethiopia's status as a provider of security in the area has benefited the state's capacity to alter regional ties to their favour vis-à-vis the GERD in terms of impacting developments along the Nile. These dynamics are especially visible in the Sudanese state, which formerly backed Egyptian objectives along the Nile but has lately switched sides and sided with Ethiopia. Ethiopian soldiers make up over 90 % of the peacekeeping force on the Sudanese-South Sudanese border (Gebreluel, 2014). Improved engagement between Sudan and Ethiopia has helped to build trust and enhance ties. Sudanese President Omar al-Bashir demonstrates the general robustness of this cooperation. "[Sudanese state's] backing for the Renaissance Dam is solid," Bashir said in 2013. Egyptians, as well as the rest of the region, will profit. This overt show of solidarity is an unambiguous repudiation of Egypt, and it signals the conclusion of Sudan's long-standing relations with Egypt, which have been deteriorating since the 1980s (Barfi, 2018). "Sudanese and Ethiopian states have developed an exceedingly strong security and political cooperation centred in a common perspective on the GERD and the usage of the Nile," according to Knopf (2018). Ethiopia appears to be the region's preferred partner. This new status has also prompted the United States to pursue a strategic partnership with Ethiopia.

Ethiopian state may have acquired regional power rank according to the key criteria of influence in the region, which comprises “political and economic performance...regional recognition, and global integrity” (Gebrewold, 2014). Ethiopia influenced economic and political matters through the IGAD, grew its dominance in the region by participating in military and joint missions, and improved its global reputation as a trusted ally and regional stability provider. While the purpose of this section was not to demonstrate that Ethiopia supplanted Egypt as the regional hegemon, one issue is completely obvious: Ethiopia’s strength expanded. This growing strength affected neighbouring power dynamics to Ethiopia’s advantage switched coalitions in Ethiopia’s favour, and eventually sanctioned Ethiopia as working on account of the neighbourhood. As Le Gouriellec put it, what was good for the Ethiopian state is now good for the sub-region.

2.6. Domestic Struggles of Conflicting Nations

This section looks at how conflicting individual nations are dealing with their internal issues that may have a bearing on the Nile basin complex. This means that internally Nile sharing members have been going through several domestic challenges that may have had or, better still, may still hamper cooperation along the river basin, as will be discussed in detail. Among these factors are insurgencies, economic struggle, and political turmoil, among others.

2.6.1. Insurgencies, conflicts and contentions in Ethiopia

The Ethiopian state has lately seen an increase in brutal domestic developments that undermine the country’s political destiny as well as Prime Minister Abiy Ahmed’s leadership. The Ethiopian Prime Minister is spearheading a violent battle in the nation’s northern Tigray area after several setbacks and the Ethiopian administration’s repudiation of obligatory global accords over the Nile Basin. Firstly, Ethiopia’s instability has become quite evident in Oromia, as demonstrations began in 2014 in response to the federal government’s desire to expand Addis Ababa’s power over sections of the province. The Tigray People Liberation Front’s (TPLF) prominence inside the Ethiopian People’s Revolutionary Democratic Front (EPRDF), the servile disposition of the Oromo People’s Democratic Organization (OPDO) within the EPRDF, as well as the area’s background of being ignored and taken advantage of by subsequent national authorities in Addis Ababa all were motivating factors for protesters. The protest caused the EPRDF to reject its “Grand Strategy” in January 2016 publicly and to restructure the OPDO, with Lemma Megersa appointed as chairperson in September 2016 (International Crisis Group, 2019).

The current situation in Ethiopia is problematic, according to Raslan, since there is a tremendous political issue between the Abiy Ahmed government's sustainability and its anti-federalism agenda, which entails shifting authority to the centre well within the context of a unitary government and centralised hegemony. Nationals are growing more cognizant of their own interests and oppose any attempts to take away their power. Furthermore, notwithstanding their triumphs over the Abiy Ahmed government during the Oromo revolt against them in 2018, the Tigrayans are unlikely to return to power in the Ethiopian state. In view of the ongoing ethnic disputes and the future of the United Ethiopian state, Raslan feels there are concerns regarding the fate of the Benishangul area in which the dam is being built. It's unclear if this area will want to stay in the national framework or join forces with surrounding regions.

In view of Ethiopia's continuous ethnic strife, Abdel Wahed, a national security and African affairs specialist, maintains that it is impossible to forecast whether or not the GERD project will be finished. Furthermore, the prolongation of the conflict does not necessarily imply an abrupt halt of the project, particularly given that GERD is viewed as a national initiative in Ethiopia by all political parties (Aman, 2021). The present war may cause major delays in building or the finishing of the third filling stage, particularly due to funding and budgeting issues for military activities.

Abdel Wahed, however, adds that the nature of Ethiopia's dispute and its ethnic components indicate that tensions will persist, particularly given that the current issue is essentially ethnic and ideological, centred on Abiy Ahmed's desire to dismantle Ethiopia's federal system, which is founded on ethnicity and centralized authority. As a result, unification in its present form is unstable, interrupted by profound and complicated disputes over which the Abiy Ahmed administration was unable to reach calm on both the domestic and exterior axes. Continuing the discussions with the Ethiopian state in view of its political issues is impossible since global organizations and the African Union are now more focused on Ethiopian and Sudanese issues than on GERD itself (Aman, 2021).

2.6.2. Egypt's internal struggles

Though it was not planned, the political upheaval in the Egyptian state caused by the Arab Uprisings in 2010–2012 spurred the Ethiopian state to press on with its Blue Nile hydropower station. Uprisings that began in Tunisia in December 2010 swiftly extended throughout the MENA zone, encompassing the Libyan, Egyptian, Bahraini, Yemeni, and Syrian states. Residents in these nations requested that authoritarian leadership be replaced with democratic government, that long-serving regimes be removed, and that leadership be improved to ensure jobs, revenue possibilities,

and economic advancement. Following that, on January 25, 2011, demonstrations were held in Alexandria and Cairo. As the throng in Egypt's Tahrir Square got larger, Hosni Mubarak used security services, which ended in several casualties.

The Constitution was suspended, and House was dissolved as a result of a series of incidents. In 2012, the general polls coincided with the continuation of Hosni Mubarak's judicial hearings. In June of that year, Mohamed Morsi, the nominee of the Muslim Brotherhood political organization, was proclaimed the victor and then became Egypt's very first president-elect. In the midst of all of this chaos, President Meles Zenawi of Ethiopia stepped to the platform 2000 miles away in Addis Ababa to proclaim the plan to create Africa's largest reservoir on a Blue Nile stream. Commentators and individuals agreed that the Ethiopian state took advantage of the instability to begin building on the Millennium Reservoir. Furthermore, Morsi, the first inaugurated leader, had quite a lot to study on the position while still attempting to restore government stability. Domestic party tussles and global concern over the Muslim Brotherhood resulted in a rebellion on July 3, 2013, a little over a year ever since he took power (Michaelson, 2019). Egypt's new president, Abdel Fattah Sisi, was sworn in.

Ethiopians had clearly suffered so many political and economic setbacks that it had harmed its capacity to execute such a costly project. However, domestic political stabilization, followed by better infrastructural and economic circumstances, enabled the country to go forward. Second, owing to Egypt's political turmoil, a tiny rare opportunity arose, rendering the announcement suitable. And besides, the reservoir had been meticulously planned, and operations were in place. The volatility in Egypt, as well as the completion of the joint Cooperative Framework Agreement, pose an intriguing problem in terms of time (CFA). Six of the Nile nations had ratified the treaty by the time the Renaissance Dam was announced, but only four had approved it. Ethiopian state had completed both tasks, but Egypt dismissed the paper owing to a dispute over Article 14, which dealt with protection.

The subsequent chapter will focus more on the activities, including the dam and reservoir projects, that have affected treaties, deals and cooperation in the Nile region. In that chapter, GERD shall be discussed more.

2.6.3. South Sudan and Sudan Wrangles and The Nile

The White Nile both influences and is ruled by Southern Sudanese states. It is the point where many of the White Nile's sources meet. Thus, the Nile Basin encompasses about 90% of southern Sudan, and around 20% of the Nile Basin encompasses southern Sudan: roughly one-third

of the Nile Basin's total area in Sudan prior to the south's separation. Roughly 28% of the Nile River's flow, or about 23 billion m³ of the Nile's total flow of 84 BCM recorded at Aswan flows through southern Sudan, through the northern Sudanese state, and finally into the Egyptian state.

With the independence of South Sudan, the count of Nile riparian nations has increased to eleven. Lake Victoria is shared by Tanzania, Uganda, and Kenya, and it is here that the White Nile becomes the Victoria Nile. In the nascent state of South Sudan, the White Nile cements its power. Eritrea shares parts of the Setit River, a source of the Atbara River, with the Ethiopian state, which is the source of the Blue Nile and nearly all of its tributaries. Sudanese state and Egyptian are the riparian states with the lowest water levels. As a result, the Nile River is shared by 11 governments with diverse contributions, usage, and concerns (Waterbury, 2002).

Water resources are one of the unresolved difficulties between the two nations, according to the Southern Sudanese state Referendum Bill. Consequently, the southern Sudanese state is seeking a part of the Nile waters that Sudan was allotted under the 1959 Agreement. Prior to the vote, when the two nations remained one nation, the matter could have been better to deal with and settle. It is due to the fact that discussions between two nations are more complex than discussions between two regions of the same country. According to (Salman, 2011), the creation of new nations is typically accompanied by a slew of problems. A few of the concerns that need to be resolved with the mother state, as well as the sharing and management of shared resources, are among them. It is unmistakably true in the case of the newly formed state of South Sudanese state. Furthermore, the difficulties in South Sudan are exacerbated by northern and southern Sudan's failure to address any of the several remaining concerns prior to separation.

The South Sudanese state has stated its desire to construct a new reservoir on the Nile River as the situation over the Grand Ethiopian Renaissance Dam develops. South Sudanese state's deputy foreign affairs minister, Deng Dau Deng Malek, stated that the government aims to build a dam to produce power and avert flooding. The minister insisted that the initiative would not lead to a conflict with Egypt since it is a sovereign prerogative of the South Sudanese state. The Nile's water is also shared. Meanwhile, he noted, the project would be carried out in collaboration with Sudanese, Ugandan, Ethiopian, and Egyptian states.

Since Paul Mayom Akech, South Sudanese state's former irrigation minister, stated in June 2013 that the South Sudanese state would join the Entebbe Accord, which redistributes Nile water sharing to Nile Basin nations, Egypt has been expanding its influence in South Sudanese state via initiatives and commercial support. President Abdel Fattah al-Sisi made his first visit to South Sudan in November 2020, signing various business deals with the country, such as a hydroelectric

partnership pact for energy production initiatives. They inked an MoU on a new initiative to decrease floods in South Sudanese state's Suddwetland on June 26. In spite of the efforts toward collaboration, Hani Raslan, an African affairs expert at the Al-Ahram Center for Political and Strategic Studies, believes the South Sudanese state's intention to construct a new Nile dam is unreasonable (Mikhail, 2021).

It is important to state under this heading that the difficulties in South Sudan are exacerbated by northern and southern Sudan's failure to address any of the several remaining concerns prior to separation. Throughout the transition phase, the Sudan People's Liberation Movement/Army gave up any duty for the Nile waterways to the centralized administration due to hydro-politics. Though this may have made the rights to self-determination more acceptable to Nile riparians, it has caused significant difficulties in decisions about the management and sharing of Nile waters between the two areas of the nation and ultimately between the nations (Salman, 2011: 165). The next chapter's overview of the Nile River Agreement will cover all aspects of the agreement as well as the issues associated with them.

CHAPTER THREE

3. POWER POLITICS, THE NILE CONFLICT AND RESOLUTIONS

3.1. Power Politics of the Nile

This section seeks to comprehend the Nile basin's hydropolitical nexus in relation to the strategies and operations of major nations like China, the United States, and the United Kingdom. It investigates these countries' operations in the Nile basin, as well as how they promote (or have contributed to) regional peace or growing concerns. It also illustrates the similarities and differences in these governments' policies by contrasting them with each state's regional interests and political agendas. Numerous actors have shown concern in the Nile basin's long-running hydropolitical rift but have paid minimal focus to Britain's, China's, and the United States' activities and policies, which have the prospect of changing the political discourses of the Nile's downstream and upstream nations.

3.1.1. The British Influence

The division of Africa, as well as other world political incidents such as the dissolution of the League of Nations, the death of the British Empire, and the formation of nations such as Ugandan, Kenyan, and a sovereign Sudanese independent of Egyptian states, were all linked directly to, and mainly a result of, British Nile policies. The English annexation of Egypt in 1882 was only a political stride forward, fuelled in part by the Nile and in large part by the Suez Canal. During the 1896-98 river war, the invasion of Sudanese and Ugandan state's admittance in 1894 was the first and most important component of a British imperialistic scheme for monitoring and coordinating river resources.

Furthermore, the British upriver extension may be regarded as a pragmatic colonial policy inspired by a diverse blend of political, economic, and political views influenced by how they interpreted the structural capabilities of the Nile's geographic and hydrological attributes (Tvedt, 2016).

There were two views of Britain for the control of the Nile, which determined the colonial strategy in this region of the Middle East and Africa in general. Meanwhile, Britain planned to

annex additional freshwater for Egyptians in order to enable and enhance agricultural output, notably important cotton farming, and to supplement the state during its own brief slip. The British could keep their position at Suez; however, upstream water schemes under its control might be used to exert pressure on Egypt if they were dissatisfied. The British wanted complete control over these linked and partly conflicting goals.

Its Nile strategy permitted the negotiation of agreements and accorded with European colonial countries involved in the Nile valley, including Belgian, French, Italian, and German, limiting their jurisdiction and establishing a non-interference regime with the hydraulic integrity of the river system (Tvedt, 2010: 4). The ensuing discussion will demonstrate that no serious conversation of the Nile Basin can take place unless Great Britain is constantly mentioned.

Because of the silts in the water, the Blue Nile, which supplies the majority of the Nile's fresh water, was difficult to regulate. Because the British lacked the sophisticated know-how required to build a dam capable of managing the Blue Nile over time, they chose a different approach. The British reached an arrangement with the then-Ethiopian Emperor Menelik II. Per the agreement, Ethiopians pledged not to drain any freshwater from the Blue Nile before even informing Egypt's imperial authorities. This, per the British, was crucial in the 1902 deal.

In 1904, the British established the Nile as a single planning authority. The British approach to the Nile led to a comprehensive water policy, upstream modernization, and the necessity for regional restraint (Tafesse, 2002). The main goal was to maintain order and progress without having to invest much money. In the meantime, British officials were involved in the river. The main goal was to maintain order and progress without having to invest much money. Meanwhile, British officials in Northern Sudan and Egypt worked in river regulation, irrigation projects, and cotton cultivation, all of which were made possible by man-made water. Following the Egyptian Revolution in 1919, Britain worked tirelessly to increase cotton production in Sudan, particularly in Egypt's Gezira scheme.

Cotton was cultivated in a part of the country that was still under British authority. As a consequence, it was regarded as a more secure supply source than Egypt's post-revolutionary administration (Taylor, 1950). The relative efficacy of British Nile policy initiatives during the early years of imperialist dominance underscores the fact that they were carried out by a small group of political advisors in England, Egypt, and Sudan, along with a smaller group of water experts, and afterwards executed in a political environment where the most powerful province parties involved backed them (Tvedt, 2010).

The clarity of British imperial strategy deteriorated with time, and several colonial objectives clashed. In the mid-1920s, when the British oversaw the construction of the Sennar Dam, they started a process that turned Sudan into a hydrological nation. Along the process, it also created a political and economic stratum with a vested interest in increasing Nile authority. Because Sudan was upstream on the Nile, foreign office planners in London frequently underlined that anybody who dominated Sudan “had Egypt at their mercy,” implying a readiness to reduce Egyptian authority in Sudan (Tvedt, 2010). This means the Sudanese state is tactically situated, and it might utilize its geopolitical benefit to harass countries that rely on it.

Nevertheless, in Uganda, the British colonial powers despised British Nile methods that they perceived as favouring downstream concerns. In the 1940s, they started to strain on Britain to reassess its Nile policy. Ugandan state needed a hydroelectric dam in order to transform. When the British finally secured Egypt’s consent for constructing the Owen Falls project, which was finished in 1954, they initiated massive water-control efforts in Uganda and inaugurated a key new chapter in that country’s history. Britain’s humiliating defeat in the 1956 Suez crisis proved disastrous for its Nile project. A series of river-sharing accords was also prompted by the British. The British Nile Empire’s time had come to an end as the winds of change blew in the 1950s. The British sought to reach an agreement with Cairo on a basin-wide basis based on a new and far more unbiased Nile Valley Strategy. They tried to give the upstream states’ water needs, which were still under British authority, a lot more weight, but they were unsuccessful (Tignor, 1966). The British Empire’s Nile empire had a tremendous impact on the development of the whole Nile river system basin until the British Empire fell decades ago.

The British workmanship throughout the colonial era has resulted in Egypt enjoying a wide variety of benefits and an upper hand in terms of Nile River management. As things stand, the United Kingdom has not announced any plans or expressed any readiness to arbitrate in the dispute that its colonial actions have sparked, nor has it influenced post-colonial accords.

3.1.2. The American Influence

The December Anglo-Italian agreement encouraged Ethiopian officials to begin work on the Lake Tana project, which would open the way for the construction of a dam at Lake Tana and a railway connecting Somalia and Eritrea through Ethiopia. Ethiopia’s authorities anticipated that the Americans would be interested in the venture because the United States was already losing its share of the global cotton market. This might assist it in regaining market share in the global cotton industry. The estimated \$10 million initiatives have enlisted the help of an American engineering firm. Because the British government intervened with the United States in the 1930s, the project

was never completed (Tvedt, 2010: 167).

The Bureau of Reclamation of the United States Department of Interior (USBR) was tasked in 1958 with participating in a collaborative initiative on the Blue Nile basin grand plan. Ethiopia and the United States agreed to split the costs (Saeed, 2018). The project study, which took five years to complete, recommended that four dams be built downstream. The Blue Nile project failed to get off the ground before the Lake Tana plan because Ethiopia needed both internal and foreign financial backing (Collins, 1990: 278). Ethiopia's capacities were weakened, according to Samaan (2019: 153), as a result of internal and foreign conflicts with Eritrean separatists and Somalia.

Despite the fact that the master plan initiative flopped caused to a lack of funding, the fact that the research was done at a time when Ethiopia's relations with Egypt were tense is a source of concern for this article. This also suggests that, prior to China's substantial financial help to Ethiopia for the controversial Great Renaissance Dam (GERD), the US and Ethiopia had collaborated on a Blue Nile research to better Ethiopia fulfil its expanding demands. Between 1960 and 1971, the Soviet Union supported Egypt in the construction of the Aswan High Dam, while the US studied the Blue Nile for Ethiopia between 1958 and 1964. In the 1960s, it aided in the construction of the Finchaa Dam. Surprisingly, and paradoxically, the United States was later in charge of maintaining the Aswan High Dam. Meanwhile, the Soviet Union conducted a survey on Lake Tana to augment the USBR research (2019: 115).

From the start, the Aswan High Dam (AHD) project was strongly linked to the U.S. The High Dam was erected, among other things, to enable Egypt to consume 84 billion m³ of Aswan water, up from 52 billion m³ previously. As a result, AHD was built upstream to prevent water floods from washing down the river and into the sea. The AHD offered low-cost hydroelectric power to support industry businesses like energy-intensive fertilizer and smelting, as well as serve as a political symbol for the revolutionary regime. As part of a bigger campaign to combat Communism, the US demonstrated its interest in strengthening Egypt's underdeveloped economy by building a multifunctional dam. In light of this, the foremost dam engineers in the United States requested more research and assessment after flood seasons passed through Egypt. Their involvement was contingent on the research and evaluations. The project received its first approval from combined British, World Bank, and American finance in December 1955. Eventually, the US administration snuck in a new requirement for funding the dam project. Egyptian authorities had not anticipated the Americans to work with them to reach an agreement with Israel as a prerequisite (Alterman, 2016).

In 1956, a schism in America's attitude toward Egypt seemed to be forming. Despite Washington's seeming sluggishness, the American envoy in Cairo remained committed to the initiative. The US Operations Mission and the US Embassy in Cairo clearly supported the High Dam considerably more than the Washington officialdoms. For example, the Embassy requested \$2 million for engineering studies of the High Dam in its first budget proposal to Washington. After the Eisenhower Administration's suggestions, the Foreign Operations Administration sought just \$500,000 for an engineering study and a desk study of the Nile Valley (Alterman, 2016: 107).

Egypt's large-scale US aid program was influenced in part by the continuing talks between the British and Egyptians at the time. The problems at hand were the British military involvement in Egypt, which had been in place since 1899 under an Anglo-Egyptian monarchy, and the destiny of Sudan. In 1953, Prime Minister Winston Churchill and Foreign Secretary Anthony Eden pleaded with President Eisenhower and Secretary Dulles to delay the giving of significant assistance to Egypt, fearing greater Egyptian non-cooperation in the talks. Despite the US government's effort to prevent any attempts at foreign finance, relations between Egyptian and American authorities were tense in 1954. In the modern day, the Egyptian government's political front has reached an agreement with the British government over the Suez Canal Base. Both Cairo and Washington hoped that American aid to Egypt would be enhanced as a result of this agreement. This also implies that the Egyptian government may no longer be considered as working against Britain's interests in the country (Alterman, 2016).

This was followed by a combined determination by the United States and the United Kingdom to side-line Egypt in their Middle East affairs. Despite Egyptian authorities' efforts to negotiate a cooperative plan between the US and Egypt, Abdel Nasser chose to nationalize the Suez Canal Company, citing the changing American mentality (Rubinstein, 197: 68). The company's profits were supposed to go toward paying for the dam's development (Alterman, 2016: 125). That was Nasser's historical reaction to the United States' inconsistent and fluctuating political moods. Of course, the Egyptian leader had realized that the Americans were no longer willing to assist with the initiative that they had claimed would be a game-changer in Egypt's economic difficulties as a result of their actions.

Furthermore, even if it is approved to be done, it would undoubtedly come at a cost to the Egyptian state. Nasser's conduct set in motion a series of events that culminated in a coordinated Israeli, British, and French invasion of Egypt, as well as strong American efforts to drive back its UN allies. In 1970, Egyptians finally completed the Aswan High Dam with the help of the Soviets. In 1972, Egyptian President Anwar Sadat requested Soviet personnel to leave the country. Following the 1973 Arab-Israeli crisis, which was instigated by the United States, and the

subsequent Camp David deal, which brought peace between Egypt and Israel, American aid and experts went to Egypt. The US, who had previously considered the construction of the Aswan High Dam as a matter of economic urgency, now saw it as merely a political issue. The Secretary of State and his deputies were only seen as a bargaining instrument for regional peace (Alterman, 2016).

Many international agencies and third-party organizations have attempted to resolve the tensions among the Nile Basin governments while attempting to improve the lives of these Africans. For example, the United States wants to contribute to the Millennium Development Goals (MDGs) for sanitation and water by allocating a portion of its foreign aid to poor countries to provide low-cost water access (Howe, 2010). Its project aims include improving human health, water management, productivity, and collaboration (McMurray, 2007). America promotes infrastructure development, public health protection, scientific and technological developments, as well as humanitarian assistance in unusual situations.

Trump's administration's actions toward the Nile Basin have recently been criticized. The US tried unsuccessfully to arbitrate the long-running Nile issue between Egypt, Ethiopia, and Sudan. Egypt and Ethiopia are both long-time allies and assistance recipients for the United States. Relations between Sudan and the United States are quickly strengthening. In response to Egypt's request for mediation, Washington forged a tripartite agreement between the three countries. The World Bank's president was also present during the talks. The negotiations began on November 6, 2019, and finished on February 28, 2020. Ethiopia declined to attend the last session, where the three countries were supposed to sign an agreement. In the absence of Ethiopia, Egypt was prepared to sign the pact, but Sudan refused. During the discussions, the three states appeared to agree on the regulations and methods controlling the dam's functioning, as well as the initial filling of the dam's reservoir during times of drought. Ethiopia's reluctance to participate in the last round merely sent the talks back to square one. As a result, Egypt requested that the issue be sent to the United Nations Security Council (UNSC). Following that, Ethiopia's funding was decreased by a stunning \$130 million. The United States' assistance cuts to Ethiopia appear to be tarnishing the present negotiations and complicating them. There would be no cause to suspect America's impartiality as a mediator if it took comparable measures against Egypt. This decision might exacerbate tensions and jeopardize ongoing talks. Some academics and lawmakers in the United States believe the US should have taken into account the fact that Ethiopia is already dealing with many issues (Melesse, 2020). President Trump's comment that "they will end up blowing up the dam" was much more concerning (Berger, 2020). The remark seemed to support and encourage Egypt to go all-out against the dam. In 2013, Morsi acknowledged the potential of attacking the dam (Walsh & Sengupta, 2020). It is important to add that the support the United States gives to Egypt, coupled

with Trump's comments, adds to the strengthening of the hegemony of Egypt despite its special relations with Ethiopia. This also strengthens the perceived war threats and the continuous warning that has been sounded by the Egyptian states of possible war if Ethiopia continues with the path it has taken in recent times.

3.1.3. The Chinese Influence

From a geopolitical water perspective, nowhere has China's comeback to Africa been more momentous than in the Nile Basin. For years, the Nile's geopolitics has been volatile. This subsection examines China's significance as a potential source of funding for upstream states' hydroelectric projects, as well as its impact on the Nile environment and, more broadly, the river basin's hydropolitics. It illustrates how China's engagement in upstream dams has allowed them to participate in unilateral hydropower programs that have shifted upstream-downstream hydropolitics. It is vital to note that the large percentage of dam building projects initiated by Chinese companies include hydroelectric components that require a consistent Nile water flow. It has shifted the hydropolitics of the Nile basin, offering significant challenges to political stability, regional security, environmental sustainability, and Nile economic growth. Contrasting the United Kingdom and the United States, China's strategy for the Nile Basin focuses on the finance and development of a variety of water projects, particularly dams. The top five dam-building countries account for nearly 80% of all large dams in the world. Only the Chinese government has built nearly 22,000 big dams, accounting for roughly half of the total worldwide. It had just 22 major dams before 1949. The United States has roughly 6390 enormous dams, India has 4000, while Spain and Japan each have between 1000 and 1200 (Hamada, 2018: 45).

African leaders applaud China's policy of non-interference in African domestic affairs. They prefer to conduct business with Chinese enterprises, as opposed to European countries and the United States, which focus on human rights and constitutional change. China's massive water infrastructure projects in the Nile basin mark a sea change in the region's hydropolitics. It also shows China as a contemporary monetary backer for riparian states upstream. The entry of China provides a tremendous impetus for the building of hydrological facilities. River Nile may now be used by upstream countries to create hydropower and agricultural infrastructure (Cascao, 2009). China has emerged as a more appealing partner and lender to upstream countries since Chinese initiatives can be finished faster and at a lower cost than Western donors and corporations (Reuters, 2009). Egypt's capacity to prohibit upstream governments from using the Nile has been questioned due to Chinese influence in the region. China's involvement in upstream hydropolitics has also circumvented Egypt's prior attempts to limit funding for costly enterprises in upstream states (Mbaria, 2013).

One of the most common effective techniques for changing Egypt's Nile discourse, according to Waterbury (2002: 80), was its ability to prevent regional and international financial institutions from investing in hydroelectric facilities in upstream nations. The World Bank, European Investment Bank, local banks, and also comparable donors like the African Development Bank (ADB) have been publicly unwilling to assist programs in upstream countries as a result of Egypt's influence. Egypt's unilateral rule was strengthened even further by the African Union's inability to change the basin's structure of power. Several internal difficulties have played a big influence on upstream nations' capacity; therefore, the problem is not restricted to foreign reasons.

According to Yimer (2015: 104), inadequate funding, policy instability, bad infrastructure, a lack of justification and policy for the water sector, and increased dependence on rain-fed agriculture that lessens the need for irrigated agriculture have all influenced upstream nations' positions in the basin's hydropolitics, and also their readiness to utilize the Nile (Yimer, 2015). As a result, military expenditure dominated the economic policies of many upstream countries (Cascao, 2009: 251–64). Upstream riparian states were unable to challenge Egypt's Nile quasi-monopoly due to external and domestic considerations.

Furthermore, China's entry into the upstream nations' water sector is beginning to disrupt Egypt's stranglehold on upstream countries' national budgets as a financier of upstream states' hydrological infrastructure, altering the basin's political narrative. As a key external participant and eager prospective financier of upstream states, China has played a critical role in power transfer and establishing the landscape of international water development and management along the Nile. China has pledged to finance efforts worth billions of dollars in order to use better the Nile's capacity and potential (Casco, 2009). Nonetheless, Jacobs (2012: 137) claims that the Nile's power shift may be traced to the Cooperative Framework Agreement's approval in 2010. Without the inclusion of Egypt or Sudan, the Ethiopian, Ugandan, Tanzanian, Kenyan, and Rwandan governments gained negotiating muscle and ratified the CFA. Egypt gradually lost control of the River's hydropolitics agenda as a result of this. As a result, upstream governments have begun to question Egypt's dominance in the region publicly and have been more vocal in their demand for their share of the Nile. Some have even begun to move through with new growth schemes, regional cooperation groups, and unilateral plans to utilize the Nile within their own boundaries.

Several hydrological facilities in upstream states such as Ethiopian, Burundian, Ugandan, Kenyan, Tanzanian, the Democratic Republic of the Congolese, and Sudanese states are now being sponsored and commissioned by Chinese banks and enterprises. As a result, it has become the Nile's most rapidly developing actor. As a result, Egypt is apprehensive about the possibility of

dams being built by upstream states, notably Ethiopia (Cascao, 2009: 260). According to Shadid (1995), China has given these upstream countries competitive power in Cairo and has kicked off the upstream governments' long-awaited aspiration to improve the Nile. Upstream governments have attempted but failed to use the Nile for agricultural purposes since the early 1990s. Ethiopia, for example, plans to build a massive agricultural complex as well as a slew of hydropower projects that would rely heavily on the Nile. Ethiopia's willingness to claim a bigger share of the Nile was expressed in a policy paper presented during a four-day annual Nile utilization meeting in February 1997 (Tadese, 1997).

Kenyan and Tanzanian governments sought to use Lake Victoria on the White Nile for agriculture, while the Burundian, Tanzanian, Ugandan, and many other riparian states in the Great Lakes area partnered to build another river entering Lake Victoria and proposed hydroelectric projects in the region (Shadid, 1995). According to Jacobs (2012: 138-39), these plans were unable to implement due to a lack of foreign financial help for hydrological infrastructure development in these countries. Upstream nations now have the power to undertake separate projects without Egypt's authorization as a result of China's involvement. The table below highlights China's contribution and influence on hydroelectric infrastructure in upstream states

Table 4: Doners and Dams in the Nile Basin

DONOR	STATE	COST (in \$)	PROJECT NAME	Started and Completed
China (Sinohydro Corporation)	Ethiopia (Tekeze River)	365 million	Tekeze hydroelectric project	2002 - 2009
Industrial and Commercial Bank of China (ICBC)	Ethiopia (Omo River)	500 million	Gibe III project	2006 - 2016
Sinohydro Corporation	(Omo River)	2.67 billion	Gibe IV project, Halele Werabesa dams	2009 -
Chinese investment	Ethiopia near Lake Tana	500 million	Tana-Beles hydropower station	2010 - 2012
China (Gezhouba Water and Power Company)	Ethiopia	137.8 Million (85% funded by China)	Fincha Amerti Neshe hydropower project	2011
The Chinese government	Ethiopia Blue Nile	1 billion loan	GERD	2011 -
China (Sinohydro)	Uganda Nile River in Kiryandongo District	1 billion from China representing 85% of the cost	The Karuma dam	2013 -
China (Sinohydro)	Uganda, between the lakes Kyoga and Albert	900 million	Ayago north and south hydropower dams	2013
China (Sinohydro)	Sudan	1.2 billion loan	Merowe dam	2003
China (Sinohydro)	Sudan	396 million loan	Roseires dam	2010
China (Sinohydro)	Sudan	711 million loan	Shereik dam	2010
China (Sinohydro)	Sudan	838 million loan	Upper Atbara Project	2010

Source: by the author with the help of information gathered from several sources

Despite its activities in the Nile basin, which Mahlakeng (2018) finds alarming and disturbing in terms of not only conflict resolution progress and attempts, but also the Egyptian state's waning and breaking regional hegemony, the Chinese government has added its voice to the many calls for peace and amicable hydraulic agreements on the Nile basin. Zhang Gaohui, the chief of the Chinese embassy's political affairs, has recently urged warring parties to use diplomacy and peaceful negotiation to resolve this intractable problem (Bloomberg, 2020). China is a close friend of Egypt, a regional hegemon, and Ethiopia, a developing regional power. It is only diplomatically wise to advocate for peace between the two most powerful powers at the forefront of the conflict.

3.1.4. The Power Politics Over Water Resources

The fight of the world's most powerful states to influence international politics, promote country interests, and decide the substance of international law can be seen throughout this article. China's endeavour to alter the dynamics of international politics while competing with other states and seeking its national interests may be read via its policies in the African continent. As can be seen from the preceding, China's increased influence in Africa is part of a larger strategy to entice and influence African countries that have historically been allies and powerhouses for numerous powers. As a result, China has positioned itself as a superior economic choice to other long-established states. China has exploited its more attractive credit packages to win contracts to build barrages, dams, and numerous agricultural projects in the Nile Basin that would have been won by other nations. China is progressively gaining influence in most Nile basin states, whilst the United States and the United Kingdom are losing power. The partial financing of Ethiopia's GERD dam project, which has been the subject of much debate, raises issues about Chinese clout and power dynamics in the Nile Basin. The Chinese influence that appears to change the Nile basin status quo is also gradually affecting the hydro-hegemony of Egypt. The dam project of China has gradually turned into a soft-power wielded by the Chinese state.

The Nile basin's project management and strategies have been impacted in part by great power politics. As seen above, the Soviet Union assisted Egypt in the construction of the Aswan High Dam between 1960 and 1971. Between 1958 and 1964, the United States assessed the Blue Nile for Ethiopia. In the 1960s, it aided in the construction of the Finchaa Dam. The United States was later in charge of maintaining the Aswan High Dam. The Soviet Union conducted a survey on Lake Tana to enhance the USBR research at the same time. Two opposing big nations vie for influence in the basin. When the British conquered Egypt in 1882, they realized they had taken control of a region completely dependent on the Nile. They realized from the start that Egypt's

economic stability, progress, and political stability were all dependent on the Nile control.

3.1.4.1. China's Hydropolitics on Mekong and Nile

The Mekong is the world's 12th longest river and Asia's 7th longest river (Ritter, 2018). The Mekong is the lifeblood of the people who live along its course in six nations (China, Myanmar, Laos, Vietnam, Cambodia, and Thailand). The Mekong is separated into two regions: upstream, where China and Myanmar are located, and downstream, where Cambodia, Laos, Thailand, and Vietnam are located. The Mekong's capacity is enormous, and riparian nations can make good use of it. The mass flow rate in the Mekong movement is a strong possibility for China. An average of 13,000 m³ of water is discharged each year (Mekong River Basin, 2011). It has the potential to be utilised as a hydroelectric facility (hydropower). The Mekong Flow provides a considerable quantity of electricity as hydropower, 23,000 megawatts upstream and around 30,000 megawatts downstream. When every state strives to optimize the utilization of the Mekong's resources for its own national interests, problems arise. When each country uses shared resources, it is impossible to prevent conflicts of interest. On the one hand, due to its physical location, riparian countries have the right to harness their potential. However, these nations are not permitted to overexploit their potential (International Rivers, 2013) so that they can be exploited in a sustainable way jointly. As a result of this situation, downstream nations agreed to collaborate by creating a commission to manage the usage of the Mekong River so that it is not unnecessarily misused. The Mekong River Commission was established in 1995 by four downstream nations to ensure that the river could be used responsibly.

Asia is the globe's worst water-stressed region, a condition exacerbated by China's hydropower dominance. The current announcement by Beijing to construct a series of massive hydropower projects on rivers that flow into neighbouring nations is expected to wreak havoc on riparian ties. The Chinese, which also has more major dams than the entire world combined and has announced a massive \$635 billion investment in water assets over the next decades, has evolved as the main impediment to Asia's institutionalization of common water resources partnership (Chellaney, 2013). Contrary to several of its neighbours' bilateral freshwater agreements, Beijing opposes the idea of a water agreement or cooperative, rules-based administration of shared resources. For instance, China affirmed its assertions that an upstream authority has the ability to make utter and total sovereign territory over the water bodies on its edge of the global border — or the privilege to redirect quite enough water as it hopes for its necessities, regardless of the impacts on a downstream state — by dismissing the 1997 UN Convention on common water resource (Chellaney, 2013).

The governing administration mentioned the global level river in its latest project authorization as a primary goal for Chinese dam construction. On the Mekong, Chinese experts have built six mega dams, including the 4,200-megawatt Xiaowan and the 5,850-megawatt Nuozhadu, in which the first turbine started generating energy in September. Controlling and manipulating natural-river flows has become a pivot of China's authority and economic growth. While China promotes multilateralism in the international arena, it has shunned joint efforts amongst basin governments — as the Mekong River Commission exemplifies — and has refused attempts by countries using their waterways to pursue bilateral water-sharing agreements (Chellaney, 2013).

Though the Chinese case in the Mekong is not the same in the Nile region, it is important to mention that the Chinese style of building dams has made them a hydro-hegemon in the Mekong and is gradually consolidating their soft power, which is at the detriment of Egypt's struggling/falling hydro-hegemony. The Chinese have good relations with both upstream and downstream states along the Nile, especially Egypt and Ethiopia, as mentioned above. These political dynamics have the propensity to change the status quo in the region.

3.2. The Dams, Barrages and Politics

Dam politics has been studied from a spectrum of disciplines viewpoints, such as comparative politics, international relations, political economics, and political ecology, as well as at many scales, which include global, regional, and domestic. Dams are basically ecological structures that prevent a river from flowing freely, altering its hydrology, sedimentation, chemistry, and other physiological qualities. As a result, they have an immediate and implicit impact on a water's ecology, as well as the flora and fauna that are intertwined with the water's biophysical function. Those surroundings, on the other hand, do not function in isolation from the human world. Instead, rivers are intertwined with economies, civilizations, and communities, which rely on their physical, archaeological functions for food, water, transportation, and electricity. Streams can also become cultural artefacts, bearing on spiritual belief significance, for example. The 'waterscape,' as defined by Swyngedouw (2015) and Hoag (2013), is a biophysically and ethically generated composite setting. The hydro-social loop, a phrase that conceptualizes the processes by which freshwater and community remake one another, furthers this link between environment and civilization (Linton & Budds, 2014). It creates hydro-social regions, which are defined as "spatial arrangements of people, organizations, flowing water, hydrological technologies, and the surrounding conditions that orbit on water system" (Boelens et al., 2016: 1).

As a result, dams' river involvement is essentially political, impacting many populations

either explicitly via relocation or implicitly via biophysical system consequences. Concerns about who is constructing dams and for what reason exacerbate this distributional effect. Reservoirs and dams have always required trade-offs between individuals whose livelihoods have been harmed, particularly via relocation, and those who gain from the energy and water provided by the dam. As a result, societal interventions by dams have the ability to assist some while harming many. River, and the accompanying benefits of managing it, have traditionally favoured the socially and economically advantaged; water, and the related advantages of managing it, flow upwards. It strengthens the notion that dams and environmental intervention are fundamentally political, supporting a narrow set of benefits at the expense of other ecologies and impoverished inhabitants (Lavers et al., 2019). It is in this light that three main dams, namely the Aswan High Dam (AHD), Roseires Dam (RS) and the Great Renaissance Dam (GERD), shall be discussed in the following section in the lens of the general politics of the Nile.

3.2.1. Dams and Barrages on the Nile

The Nile's water management dates back to 2650 BC, the time Sadd el-Kafara, a brick dam, was erected to regulate floods in Egypt but crumbled owing to excessive inflows, putting it the world's ancient dam of its magnitude (Mays, 2010). The Aswan Low Dam, a brickwork gravitational attraction dam erected between 1898 and 1902 in Aswan, Egypt, 1000 km south of Cairo, is the oldest large dam. This Aswan Low Dam had a throughput of 980 million m³ (The New York Times, July 27, 1913). The below table shows the location of important water and dam management facilities on the River and its streams, as well as their hydroelectric, irrigation, and storage systems when data can be obtained. Dams on a large scale are built for state economic and political gain at the expense of long-term river-reliant people and the environment. Given the number of dams on the Nile, it may appear that constructing a few more will not cause problems. However, owing to the explicit river rights implications of water management and dam management, who have the entire authority of the dam management, instead of the number of dams, is the most important issue in rights of water. The Roseires, Sennar, and Khashm El-Girba reservoirs in Sudan, as well as the Aswan High Dam in Egypt, are key irrigation reservoirs in the Nile River Basin. The Delta barrage (really two different dams), the Zifta barrage and Farascour Dam in the Damietta, and the Edfina barrage in the Rosetta are the four main barrages in the delta. A barrage is a man-made barrier that is used to enhance depth or maintain the separation of fresh and saltwater.

Table 5: Structures on the Nile

Dam/Water Control Structure	Built	Country	Purpose, Irrigation (I): hydropower (HP in MW)	River
Dal	Planned	Sudan	HP (400)	Nile
Shereyk	Planned	Sudan	HP (350)	Nile
Kajbar	In progress	Sudan	I HP (30)	Nile
Rumela Dam	2011	Sudan	I HP 135	Atbara
Burdana Dam	2011	Sudan	I HP 120	Setit
Jonglei Dam	1978 not completed	Sudan	Drain the Sudd wetland	White Nile
Rusumo I & II	2012	Sudan	HP (60)	Kagera
Nyabarongo	2012	Rwanda	HP (27)	Kagera
Owens Fall (Nalubaale)	1954	Rwanda	HP (180)	Nile (Lake Victoria)
Kiira	2000	Uganda	I HP 2000	Nile tributary
Isimba	2015	Uganda	HP (87)	White Nile
Delta Barrage	1833-1862	Egypt		Nile
Aswan Low Dam	1898-1902	Egypt	I (5.1 bcm)	Nile
Assuit Barrage	1903	Egypt	I	Nile
Nag-Hamady	1930	Egypt	I	Nile
High Aswan Dam	1960-1970	Egypt	I (132 bcm) and HP (2100)	Nile
Al-Sallam Canal	1997	Egypt	Transfer water to Sinai	Nile
Fincha	1973	Ethiopia	134	Blue Nile tributary
CharChara	2000	Ethiopia	HP (84)	
Koga	2008	Ethiopia	I; HP (80)	Blue Nile tributary
Tekeze	2009	Ethiopia	HP (300)	Atbara
Tana-Beles	2010	Ethiopia	I (Lake Tana) HP (460)	Blue Nile
GERD	Under Construction	Ethiopia	HP (6000)	Blue Nile
Megech		Ethiopia	I	Inflow to Lake Tana
Chemoga Yeda	2013	Ethiopia	278	Blue Nile tributary
Gumera		Ethiopia	I	Inflow to Lake Tana
Ribb	Under Construction	Ethiopia	I	Inflow to Lake Tana
Didessa	Under construction	Ethiopia	I	Blue Nile Tributary
EwasoNgiro	2012	Kenya	HP (180)	
Sennar	1925	Sudan	Irrigation (0.8 bcm)	Blue Nile
Jebel Aulia	1937	Sudan	Summer Irrigation for Egypt	Nile
Kash El Girba	1964	Sudan	I (1.3 bcm) HP (10)	Atbara
Roseires	1966	Sudan	I (7.4 bcm) HP (1800)	Blue Nile
Merowe	2009	Sudan	I (12.5 bcm) HP (1250)	Nile

Source: Abteu & Dessu, 2019: 20

3.2.1.1. Aswan High Dam (AHD)

Lake Nasser is located on the boundary of Egypt and northern Sudan in the lower Nile River Basin. Upon the completion of the Aswan High Dam in 1963, the lake was established to serve as a main multifunctional reservoir for water, electricity, irrigation, and better route planning. The man-made lake stretches from southern Egypt to northern Sudan, covering 5,248 km² with a total capacity reserve of 162.3 km³ (Elsawaf & Willems, 2012). Based on the scale of the yearly flooding upstream, this potential changes. Whereas roughly 84 BCM of water comes to Egypt's Lake Nasser each year, intensive utilization of the lake's waters means that only about 0.4 BCM gets to the Mediterranean Sea (Mutua et al., 2011). Because it is located in a hot, dry climate, yearly evaporation emissions can be significant, varying from up to 10% once full to roughly 3% when at minimal load.

The Revolutionary Command Council (RCC) decided to build a single "mighty" dam south of the Aswan Low Dam instead of waiting to implement the multiple upstream projects of the Century Storage Scheme a few months after Colonel Gamal Abdel Nasser and the Free Officers deposed King Farouk on July 23, 1952. (Collins, 1990: 247). Egypt has been considering the construction of additional dams upstream for water conservation and management since the breach of the Aswan Low Dam in 1946, which culminated in Hurst's Century Storage Scheme. However, the inability to obtain a multilateral agreement on the Equatorial Nile Project with Sudan and East African riparians, as well as with Ethiopia on the Lake Tana project, prompted the RCC to construct a larger reservoir inside the project area.

The AHD had numerous potential benefits, including attempting to prevent flood impacts, controlling water over periods and ages, broadening longstanding agriculture along the Nile Valley and Delta, producing hydropower, establishing the fishing industry in the dam's reservoir, and providing jobs (Zunes & Tucker, 2010: 166–167). The average yearly water savings were predicted to be 22 BCM. The whole yearly runoffs observed at Aswan (84 BCM) were subtracted from the total yearly runoffs after deducting the statutory water rights for Sudan and Egypt (52 BCM in total) and the reservoir's losses owing to ground evaporation and leakages (10 BCM) (Waterbury, 2002: 73).

The AHD's expenses were huge, not just commercially but also socially, economically, and politically, in comparison to these advantages, which the rising Egyptian population desperately needed. The agricultural region around the Nile Valley and Delta would lose its natural supply of

fertility if deposits and minerals were blocked from flowing. Because of the clogged flows and sediments, the delta and beaches would be eroded, seawater would intrude and contaminate groundwater, and water quality would deteriorate owing to the misuse of artificial fertilizers (French, 2007: 249–251). Furthermore, after flooding Nubian settlements in Egypt and Sudan, particularly Wadi Halfa in the latter, filling the reservoir necessitated the submergence of agricultural areas and the evacuation of around 100,000 local residents (Fahim, 1981: 59). Furthermore, building the AHD required Egypt to negotiate with Sudan over the administration of the dam's advantages and expenses, as well as deal with opposition from other Nile riparians. Furthermore, Egypt was forced into the international Cold War game due to a lack of technological and financial capabilities.

While Egypt was looking into building the AHD, Sudan was looking into expanding its Gezira irrigation plan, and in 1954, the latter decided to build the Roseires Dam on the Blue Nile (Collins, 1990: 251). Both nations applied for funding from the World Bank's initial organization, the International Bank for Reconstruction and Development (IBRD), which was established in 1944 to assist Europe in rebuilding after World War II (World Bank, 2014). Given that the Roseires Dam would influence the Nile's flow to Egypt on the one hand, and the AHD would flood fertile regions and relocate local residents in Sudanese state on the other, the IBRD conditionally approved the requisite funding for the two nations coming to an agreement (El-Atawy, 1996: 48). Egyptians and Sudanese had a rocky relationship, with four rounds of talks: September to December 1954, April to November 1955, December 1957 to January 1958, and March to November 1959 (Collins, 1990: 251–258, 267–270). The very first three sessions were fruitless, but the fourth round culminated in the Nile Waters Full Utilization Agreement of 1959.

Nasser got a package deal for the AHD in December 1955, which included \$56 million in US funding and \$14 million in British help, as well as a \$200 million credit from the IBR (Zunes and Tucker 2010: 166). He did not react to this offer right away because he was waiting for another persuasive offer from the Soviet Union, which never came, prompting him to accept the Western block's offer on July 17, 1956. The United States and the United Kingdom retracted their offer two days later, citing the inability of Egyptian-Sudanese discussions to strike a deal on the AHD. Furthermore, objection to such an agreement in the United States Congress evidenced other political and economic factors, mainly related to Nasser's animosity toward Israel, Egypt's acknowledgement of the People's Republic of China (PRC), and the increased competitive pressure between American and Egyptian production of cotton after the AHD was built. Nasser was quick to respond. Nasser declared on July 26 that he would nationalize the Suez Canal, which had been run by an international business since its inception in 1869 and had been controlled by French and

British capitals, in order to have the financial capacity to build the AHD. The Suez Canal generated \$100 million in income in the previous year, with Egypt receiving around \$2 million (Zunes & Tucker, 2010: 166).

Egypt got monetary and technical assistance from the Soviet Union to help in the construction of the AHD. Unlike the previous proposals, this did not need negotiating a deal with Sudan at a time when the two nations' diplomatic ties were worsening. By 1956, both nations had regained full sovereignty, and the project of unification between them had failed. In 1958, a spectacular set of circumstances altered the trajectory of history. General Ibrahim Abboud toppled Sudan's government, and Abboud inked the Nile Waters Treaty with the Egyptian state in 1959, agreeing to the development of the AHD (Massoud, 2012: 196).

Figure 9: Location map of Aswan High Dam, Lake Nasser, and Lake Nubia



Source: Massoud, 2012

3.2.1.2. The Roseires Dam RD

Sudanese state is one of the African countries with the greatest hydroelectric prospective. It contains around one million hectares of surface water and is occupied by 10% marshland. River

Nile and its tributaries provide the majority of the country's freshwater. Sudanese began developing dams in the 1920s to make use of the country's diversified water supplies, which include Blue and White Niles, as well as seasonal rivers like the Setit and the Atbara. Sudanese state has six main dams around the Nile (Jebel Aulia Dam, Khashm el-Girba Dam, Merowe Dam, Roseires Dam, Upper Atbara, Setit Dam Complex, and Sennar Dam) that were constructed at distinct periods for varying purposes – providing electricity generation, agriculture, safeguarding people and land from massive flooding, and utilizing dams in diverse programs such as aquaculture farms on dam lakes (Elias & Mohamed, 2021).

The dam at Roseires was built in 1966, and its height and capacity were upgraded in 2013. This dam is used to generate electricity, regulate floods, and provide for agriculture. This dam area's present fundamental characteristics include a one-kilometre-long concrete buttress dam with a 78-meter-high concrete buttress and a 24-km-long earthen dam with a 48-m-high earthen dam on both ends. This dam's reservoir has a surface area of 627 km² and a volume of 7.4 billion m³. Over a million and a half acres of potential land are irrigated or designed to be irrigated. This dam is located near the Ethiopian border and has a silt build-up problem, which has resulted in the dam's height being increased (Abtey & Dessu, 2019: 23).

Historically, Sudan presented their own master plan for the whole Nile in June 1958, a few months following the breakdown of the third round of discussions, which was released in Humphrey Morrice and Nimmo Allan's Report on the Nile Valley Plan. The idea is mostly built on the work of Garstin and Hurst. According to Collins (1990: 259), this was the first time a computer was used to model the river's hydrologic systems and simulate the functioning of planned reservoirs, not only in the Nile but in any other basin. The Roseires Dam, the Khashm al-Girba Dam, and the Tana-Beles Dam were among the new projects included in the plan.

Sudan's economy is based on agriculture and the effective management of the Nile's waters. Much of the nation receive barely enough annual rainfall to enable subsistence farming, leaving limited room for larger-scale agricultural cultivation. The Blue Nile provides the bulk of agricultural water in Sudan; however, it is concentrated, with 66% of total annual flow occurring in August and September, with average peak rates of 6300 m³/s. The dry season, which runs from January to April, produces flows as low as 100 m³/s, posing significant agricultural production issues (Dooley et al., 2016).

Between the White and Blue Niles, the Sennar dam was constructed in 1925, supplying irrigation for 126 000 acres of fertile lands. In 1952, the plan had grown to encompass over 420 000 acres due to popular requests. A need for greater reservoirs was realized as a result of the

expanding need for agriculture. The Sudanese government tasked Sir Alexander Gibb & Partners in 1952 with investigating plans for the building of a dam at Roseires able to hold at least ten billion cubic m of water. After two years of research, a viable dam site was discovered that met all of the requirements. Nevertheless, if needed, the analysis found that erecting a taller dam might contain a far larger amount. Because of the significant expansion in irrigation needs, the Sudanese government commissioned Gibb & Partners (London) and Coyne et Bellier (Paris) to study the feasibility of building the Roseires Dam in 2 stages in 1955. This dam would have a throughput of 30 billion m³ in the first phase, with the option to expand it by another 10 m in phase 2 to generate 74 billion m³ (Dooley et al., 2016: 86).

It is important to mention that the Sudanese state proceeded with intentions to build the Roseires Dam on the Blue Nile and extend the nation's Gezira irrigation project as a component of the Century Storage Scheme in 1956. Both Egyptian and Sudanese states attempted to obtain funding from the International Bank for Reconstruction and Development, subsequently renamed the World Bank, to carry out their separate programs. Meanwhile, because the Roseires Dam would disrupt the course of the River and the AHD would have huge socioeconomic consequences for Sudan, the bank compelled the two nations to negotiate an agreement in order to get the funding. That appeared to be unachievable. The Sudanese parliament declined to approve the development of the Aswan High Dam, despite Egypt's commitment to begin building.

Figure 10: Some dams' location map



Source: Yousef (no date)

3.2.1.3. Merowe Dam MD

One of Africa's greatest hydropower projects, the Merowe multifunctional dam, was completed in 2009. It is situated in a north-central Sudanese state, near the 4th cataract of the River. This was intended to produce around 6,000 GWh of power per year while also irrigating about 400,000 acres of crops. Despite the anticipated economic gains, there have been some severe social, ecological, and archaeological consequences, including major waste of agricultural and human habitation areas.

One of the major hydroelectric projects is the Merowe dam. However, with the completion of the Al Nahda dam project, Ethiopia will be rated 1 in Africa in terms of electric power generation. According to some irrigation specialists, the building of the Merowe Dam requires an average of nine billion cubic m from Egypt, which it obtains from Sudan. The Merowe hydroelectric dam was constructed between 2003 and 2009 by Sudan's National Congress Party of the Islamist Al-Injaz administration and was overseen by the Dams Implementation Unit (DIU). Merowe's major aims were hydropower generating (with an operating capacity of 600 MW (with a projected capacity of 1,200 MW) and irrigation—concurrent with intentions to build 300,000 hectares of integrated agriculture plots. It has a 12.5 km³ reserve, which holds nearly 20% of the Nile's yearly discharge.

The dam's electricity generation is seen and acclaimed as the biggest essential by technocratic backers since the nation's deficits are viewed as a major impediment to progress. Energy demands now exceed the supply across the nation. In the late 1990s, hydroelectricity produced 50% of the power in the national system and is increasing through new dams and restoration of ageing dam projects. Increased energy output may not result in equitable allocation, as the capital already consumes 70% of available electricity while rural regions remain under-equipped (Bosshard & Hildyard, 2005).

After several ages of stumbling blocks for Merowe, including dissuading research and the challenge of obtaining able financiers, the project was eventually granted permission from an EIA in 2002, and financing possibilities were given in the form of home oil export revenue and the Gulf Arab States and Chinese interest (Dirar et al., 2015).

According to Dirar et al. (2015), the Gulf Arab States, Egyptian, and Chinese states were the key worldwide actors supporting Sudanese "development" and dam-building initiatives through invested capital, building assistance, and political backing. According to the author, several global causes spurred overseas investment in Sudan, and China's expanding presence in the foreign

investment-banking area was paired with its expanded influence in the worldwide dam-building business, which was particularly important in African states.

Again, in Dirar et al. (2015) literature study, Arab Gulf Funds' assistance for Sudan's hydro-agricultural growth was interpreted in the international framework of growing food costs, resource constraints, and the desire to ensure foreign crop yields. As a result, a large number of fertile North Sudanese farms were given to these Arab powers under private corporate agreements. Moreover, Arab governments' funding was motivated by Sudan's affiliation with Egypt and the nation's pledge to an Arab-Islamic identity. The funding of Merowe and eight other significant hydro-infrastructure initiatives were driven by Arab economic and political interests. Certainly, Egyptians have affirmed that their political backing for Sudan's hydroelectric dams was motivated by the anticipated national advantages of these initiatives. For starters, Egypt noted the significance of Sudan as an ally in discussions following the formation of the Nile Basin Initiative (NBI) in 1999, which constituted a severe challenge to the downstream state's authority over upstream usage of the inflows. Second, demographic pressures inside Egypt and resource constraints in food production were the driving reasons behind the collaboration with Sudan in migration, labour, and agribusiness. Egypt and Sudan had agreed to allow free movement of labour between the two countries, but in fact, this mostly implied an inflow of Egyptian immigrants on Sudan's valuable irrigated riverbank farms.

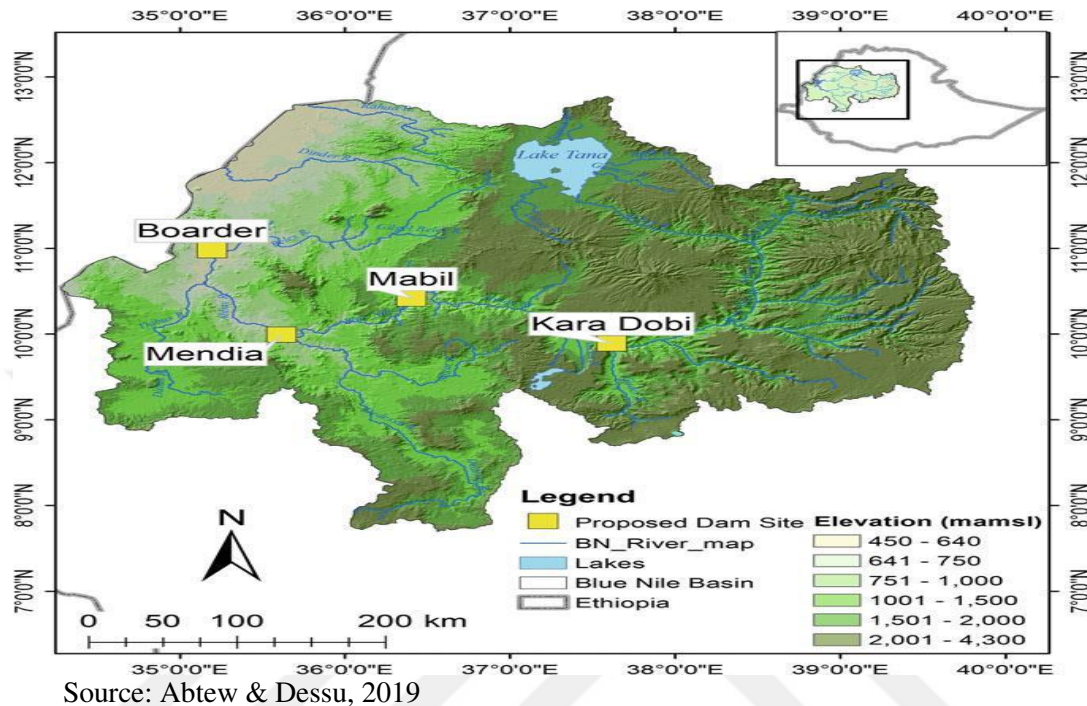
Whereas the Merowe Dam was drawing to a close, the DIU negotiated a contract renewal in April 2008 with the same Chinese companies, Sinohydro and CWE, to increase the height and length of the Roseires Dam by 10 m and 25 km (Sudan Tribune, 2008). The project cost \$396 million, which was paid for using funding from the Gulf States as well as the Sudanese authorities (DIU, 2008). The Roseires Dam was raised in January 2013 to expand the reservoir capacity by roughly 4 BCM and hydropower generating from 1200 to 1800 MW, as well as increasing the power production of Sennar Dam by 100% (DIU, 2008). Both Merowe and Roseires dams have Egypt's influence which is reflected in the Egyptian state's hydro-hegemony.

3.2.1.4. The Great Renaissance Dam GERD

From 1956 to 1964, the United States Bureau of Reclamation (USBR) investigated prospective hydroelectric sites on the Blue Nile in Ethiopia while building the High Aswan Dam in Egypt. It recommended four sites in 1964: Karadobi, Mabil, Mendia, and Border. Its choice of a border site near Sudan on relatively flat territory necessitates flooding of a broad area in order to fulfil the requisite reservoir and volume of water for energy production. In 1998, Ethiopia's new regime upgraded USBR research with the help of France and then Netherlands specialists (Saeed,

2018).

Figure 11: The Nile basin and location of major dams

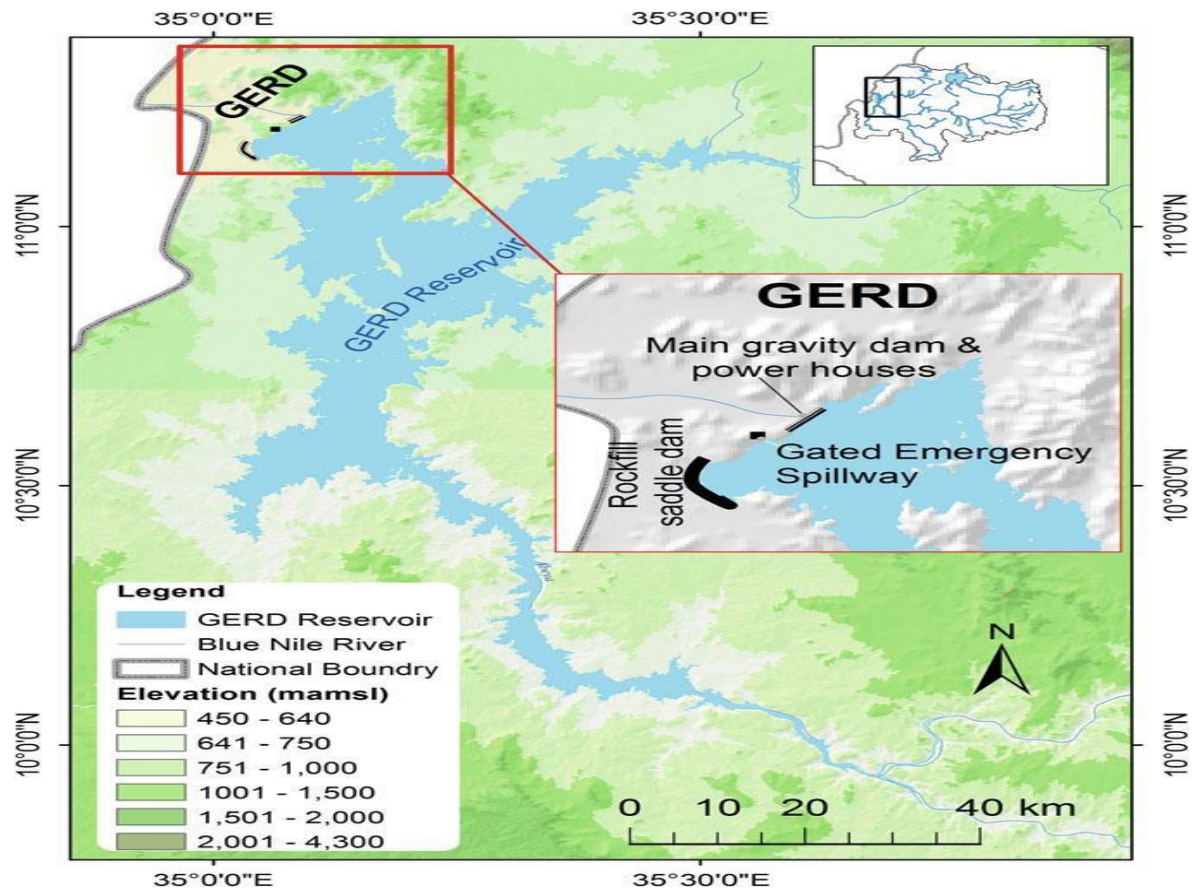


The Nile Basin Initiative's Eastern Nile Technical Regional Office (ENTRO) advocated these places as examples of Nile basin co-development. Considering that the dam's declared objective is to produce and transport energy to neighbouring Sudanese and Egyptian states, the dam's position provides both benefits and problems. This dam's proximity to Sudan reduces the cost of transmission lines. In comparison to alternate locations upstream, the site may have afforded construction simplicity in terms of the quantity of labour required for diversions and dehydration during the dam's building. However, as a consequence of site selection on comparatively level ground that traverses from the Blue Nile canyon to the lowlands, significant areas of possibly cultivable land and mineable land would be constantly submerged (Fig. 11)

At a high-water level of 640 m above sea level, the land area under the dam is around 1700 km². Because of the vast surface area of the dam, leakages and evaporating losses rise, and the total cost of dam maintenance and the building will be significant. The dam is 1800 m long. The reservoir's perimeter has been extended, which enhances seepage possibilities and control. The dam site and accompanying enterprises have the potential to displace further local ethnic groups in favour of dominant ethnic groupings, as is the situation in Addis Ababa's capital city and Gambela's agricultural fields (Legesse 2014; Pearce 2012). The GERD is made up of a primary gravity dam, a

spillway, and a rockfill dam that spans a 6-kilometre dam line. This GERD reservoir is 246 km upstream of the dam.

Figure 12: GERD location map



Source: www.nilebasin.org

The hydropolitics of the Nile were profoundly affected by a major tipping moment in January 2011. Two momentous events occurred during this time frame, reshaping domestic difficulties in Sudan and Egypt and changing the Eastern Nile Basin's balance of interests and strengths. The Southern Sudanese voted in support of independence on January 9th, and the Egyptian Revolution began on January 25th. Ethiopia started building the GERD abruptly in April 2011, with a massive magnitude many times bigger than that suggested in prior plans and viability assessments.

Shortly after, Egyptian, Ethiopian, and Sudanese states began negotiating to assess and reduce the dam's adverse effects on downstream villages; however, this was done concurrently with the building rather than prior to this. Notwithstanding Egypt's considerable worries about the project's possible problems downstream, Khartoum has been backing the GERD development due to its

huge advantages in the Sudanese agriculture and energy sectors. Nevertheless, the multiple revolutions that occurred in Egypt over the next several years led to the adoption of various, sometimes conflicting, GERD management plans (Samaan, 2019). As a result, the round has seen a variety of scenarios of collaboration and dispute, ranging from the formation of collaborative committees to the exchanging of warnings. Taking into account climate change risks, high population expansion, and rising water, energy, and food demands, the basin's shadow of the future represents the prospect of both fostering and stimulating deeper collaboration.

Figure 13: GERD Geography Map



Source: www.nilebasin.org

3.2.1.4.1. The secession of South Sudan

A poll was conducted on January 9–15, 2011, premised on the CPA signed in January 2005, wherein over 99% of Southern Sudanese citizens polled in support of secession, and on July 9, the South Sudanese state was declared an autonomous nation (Rolandsen & Daly, 2016: 150, 159). As Sidahmed (2013: 110–112) points out, Khartoum lost 75% of its identified oil resources as a result of this changing event. Consequently, it lost \$6 billion every year, the majority of its monies, resulting in significant energy supply constraints. Furthermore, because Sudan, like China, relied on oil products to settle its loans, the foreign debt load expanded dramatically. The sole conceivable benefit was delivering South Sudan's crude oil via the tunnels to Port Sudan, where Khartoum would earn shipping charges. Nevertheless, no charges were paid between July 10 and November 30, 2011, resulting in Khartoum confiscating South Sudan's oil in transit as an in-kind

payment (estimated at \$1 billion). South Sudan adopted the “drastic action” of closing its oil output by the end of January 2012 after multiple unsuccessful efforts at arbitration and direct discussions (Sidahmed 2013: 112).

The Sudanese administration implemented a range of initiatives to deal with such significant economic risks. In the long run, the authorities have attempted to encourage overseas investment in the agricultural irrigation industry in order to profit from the abundant land and water reserves, notably in the Blue Nile basin, following the world food crisis of 2008. (Cascao & Nicol, 2016: 558). In addition, a number of hydropower initiatives have been developed and completed to address power constraints in various industries. The huge fluctuations in the Blue Nile flow, increased incidence of sedimentation, and negative social and environmental repercussions, on the other hand, essentially posed a threat to the long-term viability of such agricultural and hydroelectric programs. In the medium term, the administration has chosen to gradually reduce petroleum product subsidies, which began in early January 2011. This approach sparked many rounds of demonstrations and skirmishes with law enforcement, the most violent of which occurred in June 2012 in opposition to the administration’s austerity plan and in September 2013 in opposition to the withdrawal of gasoline subsidies (Abdelaziz 2011, 2013; Abdelaziz & Dziadosz, 2012). These demonstrations took place in the larger scope of the so-called “Arab Spring” revolutions, which began in Tunisia in December 2010 and extended to other nations, which include Egypt, in January 2011.

3.2.1.4.2. The controversy around the GERD

Notwithstanding recent rhetorical intensification, the barriers to a peaceful resolution stay the same as they were when arbitration attempts commenced. Sudanese and Egyptians seek a technically enforceable deal on the dam’s management, so they may demand that water be released at specific times, like during droughts. In Sudan’s situation, this is also to guarantee that water is released safely and that floods do not occur downstream. In the long term, the two countries seek a legally binding international arbitration process to resolve GERD conflicts. Nevertheless, Ethiopia views the GERD as a self-contained project that is critical to the nation’s development goals. They are hesitant to approve a deal that would entrust the management of their dam to another state. There is a basis to believe that there are feasible concessions to be found along certain technical boundaries. Notwithstanding this, to yet, no consensus has been achieved. In December, the African Union (AU) attempted a solution under the supervision of South Africa, but it was refused by all three sides. The basic truth is that politics is obstructing the path to the agreement (Lowings, 2021).

Table: 6 Technical comparison of the Grand Ethiopian Renaissance Dam and the Aswan High Dam

<i>Description</i>	<i>GERD</i>	<i>AHD</i>
Height (meters)	145	183
Storage (BCM)	74	162
Size of Reservoir (km)	1800	6000
Length of Reservoir	245	500
Electricity generated (installed capacity)	600	2100
Evaporation (BCM)	2	10
Number of people forcibly relocated	14,000	120,000

Source: Salman (2016: 561)

3.2.1.4.3. The Unrest and Egypt

Ethiopia, a desert nation with a population of around 115 million citizens (World Population Review, 2020), has continuously stated that the massive GERD initiative, whose construction started in April 2011 and is critical for the nation's economic growth (Przyborowski, 2019; Meseret, 2020). Thus, as per Ethiopia's UN envoy, Mr Taye Atskeselassie Amde, it would provide power for "more than 65 million inhabitants whom today dwell in utter darkness" once it is operational (Al Jazeera, 2020b). However, Egypt, the Arab world's most populated state and Africa's third largest with a total of 100 million inhabitants (Al Jazeera, 2020c), regards GERD as a grave danger. It is concerned that the massive dam will significantly diminish its supply of water from the Nile, which supplies more than 90% of the nation's fresh water. Egypt is now experiencing severe water scarcity, and if a dry season happens, GERD will put Egypt, which is almost totally reliant on the Nile, in a dire scenario (Pilling, 2020).

To summarize, Egypt's main issue is that no tripartite deal on the GERD reservoir's 'filling period,' i.e., the timeframe for refilling the reservoir beyond the dam, has been achieved (Halawa, 2018). Egyptians do not want the reservoir (which is larger than Greater London) to be filled immediately but rather over a period of 15 years. Ethiopians, which can fill the dam in two to three years, expect it to take four to seven years (Pilling, 2020). Directly connected to Egypt's major worry is the question of how much water the Ethiopian state will give downstream amidst a

protracted drought, as well as the subject of conflict resolution processes. Egypt prefers international arbitration, but Ethiopia prefers dialogue, as indicated in Article 10 of the 2015 Declaration of Principles (hereafter DoP) (Fabricius, 2020). Sudanese, on the other hand, will gain from Ethiopia's dam in terms of cheaper power and fewer floods. Nevertheless, it has prompted concerns about the GERD's safety and operation, as the project may jeopardize its own reservoirs (Magdy, 2020). Ethiopia maintained its plans to begin refilling the reservoir of the gigantic dam in July 2020, even without a deal, whenever the rainy period starts (Al Jazeera, 2020a).

If Addis Ababa voluntarily begins filling the debatable reservoir of the dam without first trying to ensure that it will not end up causing "substantial damage" to downstream nations, it will not only be in violation of Article 7 section 1 of the United Nations 1997 Convention on the Law of Non-Navigational Uses of International Watercourses, but it will also exacerbate conflicts in North-eastern Continent, potentially precipitating a bloody and destructive "Water War" in the region. This water war thesis that has been ignored for many years is now creeping into the heart of Egypt's hydro-hegemony threats and Ethiopia's hydro-hegemony resistance. In the subsequent sections, this GERD, together with other agreements on the Nile, is going to be at the centre stage of either cooperation or contention in the Nile region.

3.2.1.4.4. The Egyptian Revolution on January 25, 2011

Clearly influenced by the Tunisian Uprising, which ousted Ben Ali's rule on January 14, various Egyptian community members used social networks to push for protests. Numerous Egyptians were concerned about Egypt's future in politics during this period, as the national elections slated for September 2011 had sparked intense stress among significant numbers of people, who wondered whether Mubarak would retain control and influence for the next six years and whether his son, Gamal Mubarak, will indeed find success after him (Sharp, 2009: 6). Furthermore, the governing party dominated the legislature, which was re-elected in November 2010, with practically no membership from the political opposition, which condemned the administration of vote rigging (The Guardian, 2010). The demonstrators chose January 25, Egypt's National Police Day, to launch their protests, making a statement to the administration that Egyptians require both security and protection, as well as liberty and freedom. Young folks flocked to Tahrir Square in the absence of official involvement from political opposition and activist organisations, as well as the banned Muslim Brotherhood, that appeared "conflicted" (BBC, 2011) and took a "measured strategy," announcing that any involvement by its members would be done in "individual account" (Awad & Zayed, 2011). Confrontations between demonstrators and police occurred just after dark and were broadcast to other places in the days that followed.

The “Friday of Anger” on Friday, January 28, saw rallies and conflicts turn into violent unrest, forcing police forces to retreat from practically every part of Egypt. Taking advantage of the disarray, “armed gangs” assaulted police posts and jails around the country (The Guardian, 2011). As an outcome, the army stepped in, and troops were sent around the nation, where they were “embraced” by the public (Aljazeera, 2011a). Mubarak opted to resign immediately on February 11 when all of his measures flopped, and the nation was administered by the Supreme Council of the Armed Forces (SCAF) for a transition stage.

Egyptians have been preoccupied with internal issues ever since period. On the one hand, each interim administration has been preoccupied with dealing with difficult economic circumstances. On the other hand, there were deep divisions amongst political parties in Egypt on the best path to democratic consolidation. Islamists, particularly the Muslim Brotherhood, which did not take part in the Revolution on its initial day but subsequently participated, and Salafists, who did not take part at all, campaigned for having legislative and general polls first, then revising the constitution afterwards. In reality, they intended to take advantage of the fact that they were the best organized and had the most power over individuals and other forces. Several organizations of youth, liberal democrats, and secularists, on the other hand, adopted the tagline, the constitution first, to ensure appropriate participation of all orientations and to prevent the use of religion in government through legislation. In conclusion, Islamists got what they wanted when 77.5% of people voted in favour of their demands in a poll on an amendment to the constitution conducted in March 2011. Islamists did it by using their religious power to persuade people to vote in their favour (Shukrallah & Gaber, 2011). Furthermore, in the first post-revolutionary legislative elections, conducted in November 2011 and January 2012, the Islamist group obtained a majority (Tarek, 2012). In the 2nd round of the presidential race in June 2012, the Muslim Brotherhood’s nominee, Dr Mohammed Morsi, defeated Commander Ahmed Shafiq, Mubarak’s last prime minister, with 51.73% (13.24 million votes) (Ahram, 2012).

Two key events occurred upper the Nile during such serious situations: Burundi decided to sign the CFA on February 28, 2011, becoming the sixth nation needed for the accord to enter into power (after ratification by the six signatories’ legislative bodies), and Ethiopia announced officially the construction of the GERD weeks after.

3.2.1.4.5. The Reactions of Egypt and Sudan

On April 18, 2011, Reuters’ Malone (2011) questioned Ethiopia’s Water and Energy Minister, Alemayehu Tegen, if Ethiopia formally notified Egypt before the initiative’s

inauguration. “No, they learned about it through the press,” he said, stressing that “Ethiopians did not notify Egypt about its plans to construct a massive dam on the Nile, and the two nations have not addressed the subject amidst worries that a disagreement over the river may cause war.” “Ethiopians would not accede to Egyptians’ requests to examine dam plans until Egyptians joined the six nations that had inked the new pact [the CFA],” he said, noting that Ethiopians had reached this point; after ten years of unsuccessful efforts to negotiate again “colonial-era accords.” The Egyptian interim administration, which had just been in office for a few weeks, was taken aback by the unilateral unveiling of the GERD and instead opted to utilize the continuing political shift at home to ease the tensions with Ethiopia that had been building since April 2010. A famous Egyptian team, including presidential hopefuls, officials from political groups and youth organizations, reporters, and public personalities, visited Ethiopia in early May. The 48-person team’s position was that “Egypt supports any development in Ethiopia as long as it does not compromise Egypt’s water allotment,” according to Mohammed Abul-Ghar, a leading member of the team.

As a result, Zenawi declared that Ethiopians would “postpone inking the Nile Basin deal till Egyptians elect a new legislature and head of state” and that he would embrace the creation of “a panel of Ethiopia, Egypt, and Sudan specialists to look into the Generation Dam project. Egypt’s Prime Minister, Essam Sharaf, travelled to Addis Ababa on May 13 to see Zenawi, and the two met again in Cairo on September 17. The two prime ministers decided to create an international panel of experts (IPoE) to evaluate the GERD’s construction and design files as a result of these conferences (Aljazeera 2011b). “We can turn the problem of GERD into something constructive,” Sharaf stated at a joint press briefing following the meeting in Egypt. The dam, together with the others, might provide a building and development corridor connecting Ethiopian, Sudanese, and Egyptian states.” Zenawi also reiterated his prior statement that the CFA would be postponed such that “the new Egypt may review it carefully” (Aljazeera 2011b).

Sudan, on the other hand, remained silent on GERD during the first months. On the one extreme, Sudanese had hoped to see massive dams built above the Blue Nile in the Ethiopian state because of the numerous advantages they would provide. “Connections are continuing between the Sudanese and Ethiopian states to start executing the Karadobi Dam, with a capacity of 40 BCM and with combined funding,” according to Taha (2010: 195) because the dam “would save the Sudanese from the peril of massive flooding, start organizing the utilization of water, and reduce evaporation.” Furthermore, the issue of sediment deposition in Sudan’s reservoirs has significantly compounded. The Sennar reservoir’s volume has dropped from 930 to 370 MCM, while the Roseires reservoir’s volume has dropped from 3000 to 2200 MCM (FAO, 2016c). Sudanese requirements for upstream facilities in the Ethiopian state clearly rose after January 2011, as

previously noted.

3.2.1.4.6. The Formation and Finding International Panel of Experts (IPoE)

The offer of the cabinet members of water issues of Sudanese and Egyptian states to create an International Panel of Experts (IPoE) to review the dam design with the goal of creating trust amongst the three nations was the first step the Ethiopian state adopted to help ease tensions emanating from the building of Great Ethiopian Renaissance Dam. The IPoE was made up of four foreign specialists and two specialists from each of the three nations (Table 9). The IPoE was established in May 2012, and it conducted an evaluation of dam design documentation as well as a site observation of the dam. The IPoE released its final findings on May 30, 2013, as a unanimous resolution approved by all panellists.

The IPoE Conclusion Report found that GERD followed worldwide design prerequisites and requirements, regulations, regulations, and engineering procedures in principle, but it also noted a paucity of accessibility to other crucial papers and information. This dam's downstream and upstream effects were not addressed in the IPoE document. The IPoE suggested conducting two research on the Eastern Nile Mechanism: (a) a water resource system study and hydropower modelling, and (b) transboundary surroundings and socioeconomic effect assessment, using prominent global professionals via a global tender procedure, as consented by the three nations. Egyptian, Ethiopian, and Sudanese have met multiple times to arrange the execution of the IPoE proposals by appointing foreign experts via international tendering, as agreed by the three nations. On November 4, 2013, December 8–9, 2013, and January 4–5, 2014, three conferences were conducted in Khartoum (Abtew & Dessu, 2019).

Ethiopia and Egypt disagreed over the duties of foreign experts and the necessity for them in the execution of the suggestions. The primary distinctions were that Egypt intended to bring in foreign specialists to work with national expertise and promote them to the position of tie-breaker when disagreements arose. Ethiopian state rejected Egypt's second issue, which was about "fundamentals for building confidence." The tenets pertain to concerns that are in conflict with Ethiopia's ratification of the Cooperative Framework Agreement, which was also ratified by six other Upper Nile riparian nations. An overview of these and other issues between Ethiopian and Egyptian states, as well as Sudan's seeming apathy, is offered (Ministry of Water and Energy and Federal Democratic Republic of Ethiopia 2014). The Ethiopians National Panel of Experts detailed basic Ethiopian perspectives on many areas of importance to Egypt in response to a statement by

the Group of the Nile Basin of Cairo University (Ministry of Water, Irrigation and Energy 2013).

Table 7: Members of the International Panel of Experts

Origin	Name	Expertise
Egypt	Dr. Sherif Mohamady Elsayed	
Egypt	Dr. Khaled Ahmed	
Ethiopia	Eng. Gedion Asfaw	
Ethiopia	Dr. Yilma seleshi	
Sudan	Dr. Ahmed Eltayeb Ahmed	
Sudan	Eng. Deyab Hussien Deyab	
International	Dr. Bernard Yon	Environmental expert
International	Mr. John D. M. Roe	Socio-economics expert
International	Mr. Egon Failer	Dam engineering expert
International	Mr. Thinus Basson	Water resources and hydrological modeling expert

Source: Abtew & Dessu, 2019: 134

Table 8: Negotiation timeline for dam project—success or failure

<i>Date</i>	<i>Description</i>	<i>Success/failure</i>
May 2012–May 2013	Join study by International Panel of Experts on design and potential impacts. Six meetings held and the final report signed May 31, 2013	Success
November 4, 2013	First Tripartite Ministerial meeting in Khartoum. Egypt demands construction suspension and studies	Failure by independent international experts. Ethiopia disagrees
December 4, 2013	Second Tripartite meeting. President Al-Bashir announces Sudan's support for GERD, breaking a half-century alliance with Egypt. Ethiopia suggests joint further studies. No compromise	Failure
January 2014	Third Meeting in Khartoum; no compromise. No official communication between Cairo and Egypt for five months	Failure
June 26–27, 2014	Egypt's President El-Sisi meets with Ethiopia's Prime Minister Delasegn at African Union summit, Equatorial Guinea. Agrees on continued meetings	Success
August 25–26, 2014	Fourth Meeting in Khartoum. Parties agree on two studies by international consultants selected jointly	Success
September 22–23, 2014	Fifth Meeting in Addis Ababa. Agreements on the selection of consultants by a panel from each country (i.e., Tripartite National Committee, TNC). TNC to be rotational	Success
October 16, 2014	Sixth Meeting in Cairo. The agreement that studies to be completed in six months	Success
March 3–5, 2015	Seventh Meeting in Khartoum. Ministers of Water Affairs, Foreign Ministers, and respective Heads of State sign "Agreement on Declaration of Principles"	Success

Source: Okoth, 2021: 70

According to Okoth (2021), regardless of what happens in the arbitration, there are a few justifications why Sudan should never have engaged in that position. Firstly, Sudan backed Egyptians in opposing the Nile Cooperative Framework Agreement (CFA) (which shall be detailed in the next section) in 2010 because it did not meet Sudan's water security concerns. Secondly, Ethiopia eventually opted to construct its now-controversial dam premised on the very same deal. Thirdly, the Egyptian and Sudanese states have been strong partners for more than 50 years. The two states had colonial treaties that guaranteed them unique Nile water rights. Furthermore, both countries are members of the Arab League, which has 22 members. As a result, Sudan's impartial stance in resolving the dispute appeared odd. It may be claimed that Sudan's abrupt change of heart was motivated entirely by national self-interest. This is substantiated by research that found that the dam would help the nation by reducing recurring floods and providing inexpensive power supplies. Another signal was displayed at the Arab League Summit in Cairo in March 2020. Sudanese hesitated to express its backing at the meeting, despite the fact that all other countries stood with

Egypt in the dam dispute. The unsolved battle over the Halayeb area in the northeast of the nation adds to the reason (Okoth, 2021: 71).

Sudan's backing for the project, and its mediating position, is evidently motivated by the safeguarding and realization of state goals. While there is no need to draw broad conclusions about Sudan's position on the negotiating outcomes, the preceding arguments show that Sudan would like Ethiopia to win the dispute. Notwithstanding these dubious motivations, Sudan deserves credit for effectively getting the two warring governments to the negotiating table and delivering March 23, 2015, Agreement on the Declaration of Principles. The efficacy of such an announcement, on the other hand, stays a mystery. In conducting the analysis, two factors stand out: (1) citizens' impressions of Egyptians and Ethiopians and (2) the strength and shortcomings of the conflict settlement.

Considering the nature of geopolitics and the significance of water rights to each of the countries concerned, it would be naive to expect that every tenet would be strictly observed. Politicians are driven by interests, which are moulded by internal and external public perception. It's little wonder that the treaty's terms were met with mixed reactions in Cairo and Addis Ababa shortly after it was signed. Cairo's sentiments were varied. To one group, it signified the possibility of a lasting resolution to the dispute and a major reduction in the imminent military confrontation. On another side, the proclamation was a blunder since it implied that Egypt had agreed to Ethiopia's Nile rights for the very first time in human history. Only Egyptian and Ethiopian states had monopolies before then, according to "ancient" rights codified in imperial agreements. To these critics, the Ethiopian state was the victor, while the Egyptian state was the loser. However, this viewpoint should be viewed with caution because Ethiopians appear to have reversed their position on Article V(a) of the DoP, which asserts that the three nations "agree on rules and guidelines on the first filling of GERD, that will cover all various situations, in tandem with the development of GERD" (Declaration of Principles, 2015:209). Ethiopia's refusal to abide by this requirement is why the matter was referred to the Government of the United States for mediation in November 2019.

3.2.1.4.7. Funding of GERD

Illicit Fund Transfer (IFT), which is expected to cost between 50 and 148 billion dollars per year (Ighobor & Bafana, 2014), according to the Economic Commission for the African continent, has made it difficult to fund large initiatives in the continent with national funds. Western financial companies have had the capacity to build or destroy mega-projects following the post-cold war era. For decades, Egypt's diplomatic clout has prevented initiatives on the Blue Nile from moving

forward. There has been a purported ongoing push to urge international investors not to fund Ethiopia's Nile basin initiatives (Degefu, 2003).

The economic backing of Western democracies and the World Bank serves foreign interests; however, it also comes with a slew of conditions, a majority of which favour Egypt in order to keep control of the River. Ever since the disintegration of the Soviet Union, substantial development activities have been dependent on the approval of Western nations and the World Bank. Nevertheless, the global power structures have changed as a result of China's ascension to a degree of engagement comparable to that of the Soviet Union in the development of AHD in the 1950s by offering an alternative financing source for particular GERD core elements. Given the relative benefit of GERD to Sudan's growing agriculture, particularly in comparison with the AHD, Sudan's participation is greatly increased. This may have irritated Egypt since it failed to gain Sudan's assistance in its global diplomatic campaign to stop foreign sponsorship of the GERD.

The building of the GERD has also been covered by both domestic and foreign outlets. It is believed that 70% of the dam development has been finished in its 7th year (2011–2018). (Abteu & Dessu, 2019). Financial difficulties have been revealed, and Egyptian publications have published them. The Addis Ababa authorities are looking for financial assistance from Doha (Middle East Monitor 24 November 2017). Doha is now at odds with Cairo and other Middle East states. In regard to GERD money and politics, the Prime Minister of Ethiopia and defence minister met with the Qatari Emir and minister of defence on November 13, 2017, as well as the Qatari finance minister's courtesy call to the Sudanese state on November 13, 2017 (Abteu & Dessu, 2019). The GERD initiative could be shoved into the politics and conflicts in the Middle East. The cost of the Grand Ethiopian Renaissance Dam (GERD) is anticipated to be over \$5 billion US dollars, or around 7% of Ethiopia's 2016 GDP. Egypt's relentless drive to preserve perceived hegemony on the Nile water share has long been blamed for the lack of international financing for initiatives on the Nile. Ethiopians are compelled to pay the GERD via domestic raising funds, such as bond sales and encouraging workers to pay a percentage of their earnings. Funding GERD would have provided a chance for western nations and the World Bank to work together peacefully to resolve current water rights disputes and reduce water war. The AHD has been seen as a sign of Egypt's hegemony over the River water, and one would ask how GERD might affect it. As have been mentioned in the previous sections, the dams on the Nile, especially the GERD, appear to have ramifications on the hydro-hegemony of Egypt, and that could be considered enough reason in the wake of several disagreements in reaching a consensus (as shall be discussed in the consequent subsections) an imminent violent conflict in the 'cassock of hydrohegemony' is not far away from happening (Abteu & Dessu, 2019).

3.2.1.4.7.1. Internal sources of funds

Ethiopian banks are one of the domestic avenues of financing. Banks must provide the government with low-interest loans equal to 27% of the loans they provide to people and companies. The Ethiopian Development Bank (EDB) outlines the GERD bond, which is offered to Ethiopian natives and foreigners of Ethiopian ancestry (Abtew & Dessu, 2019).

The interest rate is 5.5% for maturities up to 5 years and 6% for durations longer than that. The bond is offered by the EDB, other authorized agents, and regional microfinance institutions. A Great Ethiopian Renaissance Dam cup is carried from place to place, and patriotic billboards and accompanying musical performances are employed to help raise funds for the damming of nationalism. A texting-based lottery system with prizes such as homes, automobiles, and large quantities of money helps to raise funds needed to build the dam. Sports activities are frequently utilized to raise money from members of society. Government workers have been donating a percentage of their pay to the dam project. Opposing groups claim that the program is coercive and that non-participation might jeopardize a worker's career prospects (Abtew & Dessu, 2019: 165-166)

3.2.1.4.7.2. External sources of funds

The expansion of China's worldwide influence and finance has made it simpler for it to get access to natural wealth, markets, and strategic partnerships in the African continent and other emerging nations. Because the money given is touted as nonconditional on every domestic concern like mismanagement, human rights issues, and exploitation, Beijing has become an attractive cash source for initiatives. A Chinese company, State Grid of China Electric Power Equipment and Technology Co. (SGCC), is building the high voltage transmission network required for GERD transmitting power at the cost of one billion US dollars (Abtew & Dessu, 2019).

The Ethiopians in the Diaspora in Northern America, European states, the Australian continent, the Middle Eastern state, and other parts of the world have a huge potential to help Ethiopia thrive by contributing management and technical talents as well as financial resources. Difficulty in attracting adequate funds from abroad is ascribed to an inability to push the concept of the GERD and the bond to the overseas Ethiopians, as well as the opposition's propaganda against the dam, claiming that the dam is not a necessity and the bond is not a prudent venture, according to

Beyene (2017).

Only over 38 million US dollar value bonds were traded to diasporans by 2016, largely in the Middle Eastern (40%), European, African, and North American regions (20%, respectively), from about 3 million diaspora members (Tesfaye, 2016). The World Bank, which is not building dams on the Blue Nile in Ethiopia state, is believed to be sponsoring the Eastern Electric Highway Project, a 500 kV, 2000 MW high voltage transmission line between Ethiopia and Kenya (Kumagai 2016).

3.2.1.5. Filling of the Dam and Resolutions

There is no clearly announced policy about GERD filling. The filling plan has downstream repercussions gleaned from evaporation losses, climatic erraticism, and climate changes. Run-off rain, routing of flow, and hydro-power models remained used in research using a monthly time step from 2011 to 2060. It has been noted that the GERD filling proportion and downstream streams have a non-linear connection due to tributary conditions and climate fluctuation. For the first five years, the research found that a filling strategy appropriating 10% of the monthly stream of GERD decreases flow by 6%, and a filling plan of 25% decreases flow by 14% at Lake Nasser in the Egyptian system. According to the analysis, the effect on Sudan's Geziera irrigation will be greater. Changing climate may have an impact on these findings. A second filling plan, which fills the GERD only when the flow exceeds the long-term average, will reduce flow in Lake Nasser by 7%. The findings reveal a lot of variation (Zhang et al., 2015).

Research from West Point, the United States Military Academy, used 33 GCM models to forecast rainfall and change in climate in the Nile basin (Keith et al., 2014). These researchers also used system dynamics modelling to forecast the social, economic as well as political consequences of expected Nile river discharge. Both rainfall and temperatures are expected to rise as a result of climate change, with rainfall rising in inflow water sources and temperature increasing higher in Sudan and Egypt. The influence of GERD filling was assessed against this backdrop. Calculated flows were constructed for the period 2014–2100 in 30-year intervals using historical data recorded from 1994 to 2012, theoretical averages, and climate change.

Table 9: Average impact of 5, 6, and 7-year filling period for GERD

Country	Hydropower (%)	Flow (%)	Location
Ethiopia	400		
Sudan	14.47	−3.30	El-diem (Ethio border)
Egypt		−8.02	Aswan dam inflow
Egypt	−8.34	−3.01	Aswan dam outflow

Source: esemma et al., 2014)

Table 10: Estimated impacts of GERD filling years on Blue Nile flow

GERD fill rate (% of full supply dam volume)	Years to fill	Estimated percent reduction in Blue Nile flow
5	20	–4.22
10	10	–8.77
15	7	–13.15
20	5	–16.18
25	4	–20.72

Source: Keith et al., 2014

Last year, on July 8, 2020, Ethiopians began filling the GERD reservoirs, and according to the assessment of Sentinel-1 pictures used to assess the dam's first two turbines, Ethiopians fulfilled their goal of filling the reservoir with around 4.54 billion m³. Their objective for this year was to accumulate an additional 13.5 billion m³, but due to technical difficulties, it only managed to store roughly 4.12 billion m³ on July 19, 2021. Some of the inflow to the GERD reservoirs will be held throughout the filling phase, but the rest will be released via turbines to generate hydroelectricity (Basheer et al., 2020). It would limit AHD hydropower generation by lowering water levels in the reservoir (Wheeler et al., 2020).

Egyptians, as well as Sudanese, are worried about the impact of the dam's filling phase, particularly if it happens during droughts. Egypt's primary supply of water is the river. Egyptians are one of the most vulnerable states to water scarcity as a result of population increase, economic growth, groundwater depletion, and the effects of climate change. According to Negm et al. (2018), the most significant risk in this project is its location on an extremely steep slope. El-Nashar and Elyamany (2018) used the stochastic technique to estimate the risks of GERD in Egypt. They determined that by implementing the recommended measures, the overall quantity of water saved is projected to surpass the possible GERD losses by approximately 12 billion m³. A short-term decrease in waterflow caused by dam filling is predicted to promote degradation of arable land in Egypt owing to a shortage of water reaching the Nile's bank in Egypt. Furthermore, because of the GERD's expected water shortage, the agricultural area of the Nile Delta would endure increasing soil salinity. This is to be anticipated due to water loss from the GERD reservoir through evaporation and seepage. Furthermore, the loss of arable lands makes the Nile Delta more susceptible to climate change effects, like as saline infiltration and rising sea level. Such consequences will force millions of Egyptians to abandon their occupations in the fishery and agricultural sectors. Furthermore, because of decreasing piezometric heads on the turbines, the functioning and filling of GERD would limit the energy produced by the High Aswan Dam (AHD). Additionally, Sudan's

authorities are afraid that the GERD development could jeopardize the condition of its dams and hinder the state's capacity to carry out its developmental objectives. Sudan has experienced catastrophic floods as a result of excessive rains over the previous year.

Basheer (2021) created an everyday waterway network model to assess GERD's lasting running efficiency in minimizing riverine flood dangers in the Sudanese state. He anticipated that the GERD's long-term functioning would reduce flood threats in Sudan. Furthermore, leaks from the reservoir's bank via groundwater and evaporating from the reservoir's surfaces would lower the water allocation to downstream states. Sharaky et al. (2017) used GIS tools and remote sensors to investigate the effects of GERD on groundwater in Gezira, Sudanese state. The researchers came to the conclusion that GERD will enhance water seepage into the groundwater aquifer. Elnour (2019) used two conceptual approaches to examine the implications of the GERD building on the Sudanese state, especially the filling phase. They determined that the security of the GERD is anticipated as a major risk to the security of Sudan. By simulating the GERD reservoir filling process, Wheeler et al. (2020) highlighted the potential dangers to Egyptians, Sudanese, and Ethiopians. They demonstrated that the system standards after filling the reservoir would benefit Sudanese and Ethiopians without jeopardizing Egypt's water security. According to Heggy et al. (2021), the annual shortage of water in the process of filling may be solved by changing the operations of the Aswan High Dam, boosting groundwater retrieval, and implementing new crop-growing tactics. Egyptian and Sudanese states recognize the need to adopt definitive guidelines for the dam's functioning and filling in such a way that the water security of the two downstream countries is not interrupted or jeopardised. To reach an agreement among the three nations, precise information and estimates concerning the environmental, economic as well as social implications of functioning and filling the dam will be required.

3.2.1.6. Politics of the Dams on the Nile

Despite the fact that dams' tactical goals are economic (which are energy production and irrigation for homes and companies), the processes of their conceptualization, scheduling, and execution are related to politics. Dams' construction choices are often taken by either top political authorities or lawmakers. They must seek money, which may be a difficult procedure. They must, however, settle on the project's site after a consensus has been achieved and finance has been made accessible. Dams, as history shows, cause community life to be disrupted by forcing people to relocate. Land rights can be a source of contention when settling on a relocation site. Furthermore, relocation necessitates major financial assistance. Furthermore, public health care and social repercussions (for instance, water-related infections as well as educating children) might provide a

challenge to the national government, resulting in a highly political situation. Dam building is, in short, a political process that can quickly lead to war.

3.2.1.7. Is GERD the Ethiopian Hegemony's Nile Bridge?

Based on an investigation of Ethiopia's hydropolitical conduct on GERD, the subsection gives a strategic and political interpretation of the GERD issue from an unbiased and scientific standpoint. In other terms, what are Ethiopia's motivations for building the GERD? Examining Ethiopia's conditions in relation to the Great Renaissance Dam explains Ethiopia's Nile politicisation so that it can accomplish political, tactical, as well as socioeconomic aims. This is elucidated in the following paragraphs.

Firstly, the Ethiopian state aims to establish a hegemony in the Nile region, which entails translating hydrohegemony into hydro-strategic and hydropolitical hegemony because that supplies the most water to the Nile (Batisha, 2015). Premised on the hydrological and geographical realities of the Nile, the Ethiopian state is mindful that it has a hydrological edge over the Nile Basin. This is well acknowledged that 33% of Ethiopia's land is situated inside the geographic location of the Nile, and about 11% of the whole Nile basin is positioned inside the territory of Ethiopia. Moreover, the country's peaks supply around $\frac{1}{3}$ of the Nile's rainfall. More notably, Ethiopia accounts for more than 80% of the yearly total Nile waters. Naturally, Ethiopia is cognizant of the hydraulic condition that allows it to maintain a degree of hydro-hegemony. As a result, the Ethiopian state believes it has the biggest claim to the Nile River's water earnings (Hagos, no date).

As a result, it aims to understand this hydro-hegemony as hydro-political and hydro-strategic on the Nile's regional network. In the Eastern Nile Basin, GERD is among the strategies used to accomplish this goal (Arsano, 2013; Akwei, 2015). Ethiopia planned to build three more dams on their part of the Nile as a statement of hydropolitical hegemony in order to have complete authority over the moving water entering the Egyptian state. These dams are known as Mendiya, Bako Abo, and Karadobi, and their purpose is to increase the volume of water in Lake Tana or to adjust the River's direction as needed (Nasr, 2016).

Secondly, according to studies, the GERD could have been a beneficial initiative for all Eastern Nile nations if the tactical requirements were altered, particularly regarding length, dimensions, and storing space; in this situation, this could have been an initiative shared by states in contention to reap from its total revenue using the profit-sharing strategy (Beyene, 2013; Tawfik, 2016). It states that the GERD, with those technological requirements, is being built to undermine Egypt's concerns and put significant stress on Egypt in order to prepare the way for Ethiopian hydropolitical

hegemony.

Since the late 1950s, Ethiopian policymakers have demonstrated a willingness to enforce a *fait accompli* approach via a series of initiatives launched in collaboration with the USBR. In the last years, there has been an upsurge in the number of proposals to build dams on the Nile tributary. Ethiopians constructed the Tekeze and Belesse hydropower dams. Subsequently, it began construction of the GERD without informing the downstream country (especially the Egyptian authorities). When a tripartite panel was constituted to review the dam in 2012, the policy was plainly revealed. The Ethiopians urged that the source papers indicate that the “Renaissance Dam is under development,” rejecting Egyptian and Sudanese’s recommended formulation altogether (Allam, 2014).

It is “a prospective dam,” as they phrased it. The Egyptian negotiator had no choice but to adopt the Ethiopian language. Ethiopia then sought to wage a psychological war by conveying messages to Cairo authorities and diplomats in an effort to persuade them to embrace the current status of the Nile, which means the GERD would be constructed irrespective of the Global Tripartite Committee’s proposals (Allam, 2014). The Egyptian team also committed the cardinal sin of ignoring the concluding resolutions of the International Committee for the Analysis and Review of GERD’s final report, which proved the harmful effect of GERD on Egypt and was released in May 2013. Furthermore, Egyptians did not take the proper political steps to promote the report’s findings at the international and regional levels, demonstrating the threat of GERD to Egyptians in all aspects, including economic, hydrologic, electric, sociological, and ecological.

Thirdly, Ethiopia’s actions are one-sided and are without teamwork with the other concerned countries. The Egyptian state, in particular, trusts not in the significance of the “earlier alert situation” just prior to the start of its water initiatives on the river watercourses. It also asserts that it has an unrestricted prerogative to manage the stretch of the water that runs through its territory with no collaboration from Egyptians or any interested nation (AQUASTAT, 2005). Professor Zewde Gebre-Sellassie of Addis Ababa University argued in a presentation given at Tel Aviv University symposium in May 1997 that Ethiopia has believed – since 1950 – that they have an entitlement to the Nile’s rivers and that they have the authority to carry out any initiative found in the US Bureau’s research (1964) to achieve the set goals (Dellapenna, 2002). While professor Harold G. Marcus of Michigan University addressed the Ethiopian water initiatives in a presentation given at the same conference, he stated that Ethiopia has warned to implement initiatives that will stop the flow of the Blue Nile waters in order to pressure Egypt into making compromises. While the technological advances required for this were not yet accessible, emperor Haile Selassie desired to implement these projects to start generating revenue.

Despite this, Haile Selassie was unable to impede the Nile water deals due to Ethiopian vulnerability. Marcus stated that the Emperor had given an engineering firm in New York the task of researching the feasibility of building a dam on Lake Tana in Ethiopia to regulate the stream of the Blue Nile for the objective of generating electricity and irrigating numerous sections of the country (Gobre-Sellassie, 1997)

Ethiopia's unilateral activities and refusal to collaborate with Nile Basin governments, particularly Egypt, may have a negative impact on not just the structure of hydropolitical responses in the basin but also Ethiopia's own objectives. The harmful consequences of GERD on Ethiopia's mining resources are proof of this. This lake that would form next to GERD will drown some of the nation's most significant mining sites, including substantial stockpiles of gold, platinum, metal, and brass, as well as some of the state's most significant stone mines (Turton, 1999). With the exception of two locations: one from the south near the Kenyan boundary and another – the wealthiest in resources – in the GERD area, the Ethiopian state is barren of minerals. As a result, Ethiopia will waste over half of its mineral potential on the GERD Lake (Alistair & Gebremedhin, 2003).

Fourthly upstream, Egypt is also accused of wanting to “fight a water battle” and “instigate Eritrea against Ethiopia.” Furthermore, Ethiopia determines – unilaterally and for as long as it likes – that “Egyptian objectives would not be hurt as a result of Ethiopian dams” (Assefa, 1985; Rahman, 2012). This means that the Ethiopian state wants to create a new regime in which it is “the regional player” or “regional dominator” in the regional system of the Nile Basin (Cascao & Zeitoon, 2010). It argues that Egyptian and Sudanese get 90% of the River flows and advocates for “equal” allocation to create this current paradigm and attain regional hydropolitical hegemony. Egypt, on the other hand, responds by stating the idea of equitable and just usage of river resources. The basin's annual precipitation is 1,660 billion m³; Egyptians and Sudanese receive just 84 BCM, or 5% of the total, while Ethiopian states and other countries up the river receive the waters that get stored under-ground and support natural grasslands. The amount of precipitation that falls on Ethiopia's parts of the Nile is over 900 billion cubic metres (Cascao & Zeitoon, 2010).

The Ethiopian state believes it is entitled to the quotas equivalent to what is acquired by Egypt since its population is comparable to Egypt's. However, as the Egyptian state is the sole state whose population dwell in the valley of the Nile, these charges are unfounded (96% of the Egyptians). As a result, it is nearly entirely reliant on the Nile, despite the fact that only 39.5% of Ethiopia's population resides in the Nile Basin, with the remainder living in other river basins that pass through its territory. In response to allegations of Ethiopia, Egyptians stated that it did not impede

growth in any basin state, which includes the Ethiopian state, and that it never objected to the Tekeze Dam. It was completed in 2009 and has a potential of 9 billion cubic metres, or the Tana Pelase energy production endeavour, which was completed in 2010 because both have a minimal effect on Egypt (Swain 2011; Gebreluel, 2014).

Lastly, Ethiopia takes use of global and regional situations in order to attain its strategic goals. On a global scale, it exploits the geopolitical clash of interests between Egypt in Africa and the present superpower (the United States). In view of the United States' desire to seek geo-strategic hegemony in Africa via alliances with regional powers - including Ethiopia- Ethiopia, under Prime Minister Meles Zenawi, has achieved in presenting itself as a prospective partner in the Horn of Africa over the previous two decades. This puts Egypt's interest in the Nile Basin in jeopardy, particularly given the lack of significant tactical ties between Egyptians and other superpower states that may be used for political manoeuvring with the United States.

On a regional basis, the Ethiopian state has achieved – to a degree – what it refers to as a “strategic relationship” with Israel. As a result, it takes advantage of Israel's hegemony in the Middle East with United States support, leveraging Egypt's preoccupation owing to domestic as well as foreign files, double the adverse effects and repercussions in Nile Basin hydro-political activities (Martens, 2011). As a result, Prince Khalid Ben Sultan, the director of the Arab Council for Water, assessed the Renaissance Dam's position in hydropolitics as follows: “The dam will wreak havoc on Egypt's Nile rights and imperil Egypt's and Sudan's water resources. Egyptians will be the primary losers as a result of the Renaissance dam's construction since it lacks water options comparable to the majority of the Nile Basin countries. The dam's construction is motivated by political animosity rather than economic benefit” (Abdelhady et al. 2015: 76)

3.3. Towards Cooperation

A sequence of simultaneous cooperative initiatives started to defrost the relations among the Nile riparian nations in the late 1960s, notably in the 1980s (Ali Taha, 2005: 161–179). The measures varied from unofficial alliances and cabinet discussions to the formation of sub-basin river organisations. Lake Victoria's riparian states, specifically, worked hard to build formalized engagement amongst states in conjunction with other attempts for basin-wide partnership. The initiatives were in line with a global trend to build more structures for long-term collaboration between riparian governments on the administration and utilization of their transboundary river. The Nile projects began with an emphasis on technical concerns, and they were frequently aided by technical and financial support programs from global institutions and other contributors. It encountered several obstacles, including persistent political upheaval, riparian state mistrust, a lack

of local financial and technical competence, and regional developmental and economic imbalances (Oloo, 2011: 160). The preceding subsection highlights the major regional Nile cooperation efforts and their general relevance in the scope of the basin.

Table 11: National Water-related Research Institutions

Country	Training/Research Institutions	Potential Areas of Specialization
Burundi	1. University of Burundi 2. Institut Des Sciences Agronomiques du Burundi (ISABU)	Water Resources Management and Engineering (could collaborate with Rwanda), Agriculture
DRC	1. University of Kinshasa 2. Centre Regional d'Etudes Nucleares de Kinshasa (CREN-K) 3. University of Kisangani	Water Quality Management, Environmental Management, Sanitary Engineering; Surface and Groundwater Hydrology, Soil Conservation; Hydrobiology
Egypt	1. Regional Training Center, Ministry of Water Resources and Irrigation (Host center for ATP) 2. Cairo University 3. Hydraulic Research Institute	Water Resources Management and Engineering ; Hydraulics Engineering; River Engineering
Ethiopia	1. Arbaminch Water Technology Institute 2. Addis Ababa University 3. Alemya University	Water Resources Management and Engineering; Hydraulics, Hydrology, Water Supply and Sanitation; Irrigation and Drainage
Kenya	1. University of Nairobi 2. Institute for Meteorological Training and Research 3. Kenya Water Institute	Water Resources Management; Meteorology, Hydrology
Rwanda	1. National University of Rwanda: Faculty of Science 2. Kigali Institute of Science, Technology and Management (KIST) 3. Institute of Agronomic Sciences	Water Resources Management and Engineering; (Could collaborate with Burundi); Science and Technology programs; Agricultural Sector, Water and Soil Conservation
Sudan	1. Institute for Water and Irrigation 2. University of Khartoum 3. The Hydraulic Research Station, Wad Medani	Water Resources Management and Engineering; Water Sector Assessment; Hydrology and Hydrogeology, Irrigation and Drainage
Tanzania	1. University of Dar-es-Salaam 2. Department of Research and Development 3. Institute of Resources Assessment	Water Resources Management; Soil and Water Management; Hydrology; Natural Resources Management.
Uganda	1. Makerere University: Department of Civil Engineering 2. Agricultural Engineering and Appropriate Technology Research	Water Resources Management and Engineering; Livestock and Fisheries

Source: www.iwmi.cgiar.org

3.3.1. The Colonial Rounds

The English controlled Egyptians from 1882 to 1956, Sudanese from 1889 to 1956, Ugandans from 1894 to 1962, Kenyans from 1895 to 1964, and Tanzanians from 1919 to 1960. Belgians ruled Burundians from 1916 to 1962, Rwandans from 1922 to 1961, and the Democratic

Republic of the Congolese from 1908 to 1960. Water's value, right, security, leveraging and usage, and long-term depth of understanding were all recognized during the Colonial days. While cotton was grown in Egypt throughout the Roman era (2nd century), it was not until Muhammed Ali's reign (1805–1848) that massive output began on the Nile delta (Schanz, 1913). Cotton's worth grew dramatically after the invention of the cotton spinner device in 1738 and the cotton gin in 1793. Cotton, Egyptians, the United Kingdom, and the Nile were intertwined, with implications for Nile water rights concerns. The British did everything they could to ensure Egypt and Sudan had access to Nile water. While contending with Ethio-Sudan border issues, the British established a pact with Ethiopian Emperor Menelik to keep the Nile flowing to colonial Sudanese and Egyptian countries' cotton plantations. "Emperor Menelik II, king of kings of Ethiopia, has agreed not to do work across the Blue Nile River, Lake Tana, and Sobat river, that could block flow to the White Nile or enable others to do tasks without contractual notification with the English government," says Article II of Ethiopia's version of the 1902 agreement. According to Mundy (2015), the agreement is unclear, and changes in situations underlying its implementation, such as the termination of colonization, have been grounds for rejecting colonial agreements. More critically, "stream from the three bodies of water may not be entirely halted" is how the Amharic version translates.

The British began appointing numerous commissions to promote Egypt and Sudan as early as 1884. With a proposal for two dams, Sennar on the Blue Nile and Jebel Aulia on the White Nile, the British Commission sought to bring cotton cultivation to the Sudanese lands (Degefu 2003). A British Commission was established in 1919 to reconcile conflicting opinions on whether the Sennar dam in Sudan will have an influence on Egypt's Low Aswan dam (constructed 1898–1902). The 1929 deal (notes exchanges) between the United Kingdom and the government of Egypt gave Egypt water rights, which includes upstream uncontested authority over Nile water usage and water control activities, while at the same time enabling Sudan to utilize water.

On March 30, 1937, the British monthly *Wonders of World Engineering* published an article titled "The Nile under Control," which glorified the engineering achievements of the Sennar dam and desert reclamation in the Anglo-Egyptian Sudanese state. Egyptians have the right to Nile water, notably the silt that fertilizes its soil, according to the document. The Nile's source, "Abyssinia," was mentioned lightly. It further asserted that Egypt's people had seized the sovereignty of Sudan in order to guarantee water rights. The British interest in building a dam near the Blue Nile's mouth, Lake Tana, fuelled the Ethio-British alliance from 1922 until 1935. Ethiopia's desire to satisfy foreign countries, as well as the project's inception, provided the groundwork for the Italian conquest of Ethiopia in 1935. (McCann 1981). After failing to reach an agreement with Italy and Ras Tafari of Ethiopia on the Blue Nile and having an American corporation build a dam, Britain turned to

unilateral administration of Nile flows. The British Foreign Office urged that Britain get a mandate from the League of Nations to regulate the Nile waterways independently of territories (Tvedt 2004).

3.3.1.1. The 1891 Protocol

The primary tenet of the pact is that member states must not construct or implement any water plans in Ethiopia–Sudan's River Atbara watershed before first consulting Egyptians. On April 15, 1891, UK and Italy inked a treaty in Rome defining their control regions over the countries of the East African basin going all the way to the Red Sea coastlines. This protocol's third article requires Italy, which at the time had jurisdiction over Habesha, to desist from carrying out any projects on Ethiopia's Atbara River that might adversely influence the Nile's stream (Protocol, 1891). This convention is the first Nile treaty to be approved, and it serves as the Nile's judicial structure. Although the treaty was not initially tied to the Nile, it demonstrates Britain's desire to manage all elements of the Nile (Egyptian Foreign Ministry, 1983).

3.3.1.2. The 1902 Treaty

An agreement was made on the 15th of May, 1902, between British and Ethiopian states, as well as Italian and Ethiopian states, respecting the frontiers of the Egyptians/British Sudanese on the one hand and Ethiopians and Eritreans on the other. By October 28, 1902, the approved paperwork was exchanged.

The agreement included three areas: Ethiopian-Sudanese boundaries, Ethiopian- Sudanese frontiers, Ethiopian-Sudanese frontiers, and Ethiopian-Sudanese frontiers, as well as Egyptian/English Sudanese and Ethiopian-Eritrean frontiers. Furthermore, the British and Sudanese authorities were given the right to build a railway connecting the Sudanese and Ugandan states. Emperor Menelik II, the Habasha's King of Kings. Under Article III of the agreement, the emperor Menelik II promised not to build or allow the construction of any projects on the Blue Nile, Tana Lake, or Sobat River that would impede the Nile River's flow before even reaching a memorandum of understanding with the authorities of Britain and the authorities Egypt/Britain's Sudan authorities (Egyptian Foreign Ministry, 1983).

This pact emphasizes the importance of prior notice before Ethiopia undertakes any initiatives on the Blue Nile, Tana Lake, or Sobat River that may affect the water streams. It also attempted to delineate the boundaries between Ethiopia and Sudan, as specified in the second Article, which indicated that this duty should be carried out by a committee whose representatives are

nominated by the signing sides (Treaties, 1902).

Because of the mistranslation of the original English version of the text into Amharic, this treaty has sparked – and continues to spark various arguments, particularly over its third article. Both the English and Amharic versions have official value while crafting the treaty, according to the English text. United Kingdom stressed that the English wording demonstrates the importance of the governments of the UK and Sudan's agreement on the work stated in Article 3. Eventually, the perspective of the UK was validated (Ibrahim, 1997).

The delineation of the Sudan and Habasha (Ethiopia) border was contained in the first article of the 1902 agreement. The latter gained substantial lands in Sudan as a result of the treaty, notably Bani Shanqool, a place where the "Renaissance Dam" is now being built (Negm, 2017).

3.3.1.3. The 1906 British and Congolese Treaty

The deal between the UK and the authority of the sovereign Congolese was formalized on May 9, 1906, with Belgium signing on the representation of the latter because it was, at the time, a private colony for the Belgian King Leopold II. Per the third article of the agreement, the Congolese government agreed not to construct or allow the construction of any structures near or on the Semliki River or the Isango River that would decrease the river from flowing into Albert Lake unless a consensus was reached (Egyptian Foreign Ministry, 1983). In actuality, as with Habasha before it, this pact protected the Nile's bank headwaters for Britain's benefit and hocked any action or activity on them to the authorities of Sudan's prior permission. This protected both Sudan and Egypt's acquired rights from any threat posed by governments in the region.

3.3.1.4. The 1906 Agreement of the British, French, and Italy

These three states ratified the pact on December 13, 1906. "In the case of conditions unsettling the existing situation described in Article 1, French, the United Kingdom, and Italians shall make every endeavour to ensure Ethiopia's security and cohesion," the fourth article's item (A) states. In all cases, those nations should inform and strike a deal with one another, based on the agreement referenced in the preceding Article, to safeguard: the aspirations of the United Kingdom and Egypt in the Nile region, particularly concerning the legislation of the river and its streams, while taking into account the regional aspirations and the objectives of Italy referenced in item" (Egyptian Foreign Ministry, 1983).

3.3.1.5. The 1925 Agreement

In December 1925, Eritreans and the British exchanged documents in Rome discussing the concessions of building a reservoir on Tana Lake and a railway from Eritrean state to Italian Somalia over Habasha. These memos state that the Italian authority recognizes Egypt's and Sudan's former obtained (and literary) water rights in the waters of the Blue and White rivers, promising not to build any structures in the upstream regions, on watercourses or branches, that would significantly alter the quantity of water pouring into the river (Egyptian Foreign Ministry, 1983).

Following the British petition, the memos agreed to abstain from carrying out any constructions on the primary waters of the Blue, the White Niles, and their tributaries in order to satisfy the growing demands of both Sudanese and Egyptians in an adequate manner while also honouring the water rights of the adjoining population. These documents and notes are explicit sufficiently to ensure Egypt's and Sudan's obtained water rights in the rivers of the Blue and White Niles, as well as their tributaries (Negm, 2017).

3.3.1.6. The 1929 Agreement

In 1929, a treaty was signed about the Nile between Egypt and the United Kingdom on behalf of Sudanese, Kenyans, Tanganyikans (now Tanzania), and Ugandans. All sides agreed to prohibit all activities on the Nile, its branches, and the lakes that supply them until Egypt had given its consent, particularly if the activities would affect the quantity of water gained by Egypt or the time of the water coming into Egyptian state. In reality, this arrangement — the exchanging of documents between Egypt and Britain — is regarded as a watershed moment in the Nile's history (Fahmi, 1967). It emphasized all parties' acknowledgement of the obtained rights (On January 25, 1925, Egypt's Prime Minister Ahmed Zeiwar Pasha wrote to the British High Commissioner in Egypt, it said: "The irrigation system in Sudan should not be a potential danger to the Egyptian irrigation system, nor should it be a threat to the potential projects which are essential for the accomplishment of the needs of the Egyptian citizens that work in fields whose scores are progressively growing rapacious (Negm, 2017).

"...I further guarantee your Excellency, from now on, the British government — in spite of being concerned in the welfare of Sudan — does not want to impair the historical and natural interests of Egypt in the Nile," the British reply declared the day after. We recognize these rights now, just as we have done in the past." On 7 May 1929, in response to Egyptian Prime Minister Mohamed Mahmoud Pasha's notes, the British commissioner wrote: "... Lastly, I'd like to remind

your Excellency that his highness the king's administration has already accepted Egypt's national and historical rights in the Nile, and I assure you that his excellency the king's authority regards safeguarding those rights as one of the key British values. and I guarantee your Excellency that this concept, as well as the terms of the agreement, will be followed at all times, regardless of the situation." (Egyptian Foreign Ministry, 1983).

"Egypt recognizes that the development of Sudan entails that it obtains a larger amount of the Nile waters than it already obtains; therefore, Egypt is ready to agree with the British government on an increase which will not harm the increase of the Egyptian natural and historical sights in the Nile or its agricultural expansion," asserted the Egyptian Prime Minister in a memo dated May 5th, 1929. (Krishna, 1995). It mentioned unequivocally that irrigation or energy production projects on the River, its branches, or the lakes that power it are not permitted, either in Sudanese or in the British-managed nations, if they decrease the quantity of water pouring into Egypt, change its flow periods, or lower its threshold in a way that harms Egyptians without the latter's prior consent. It further claimed that Egyptians have the authority to inspect the Nile's movement from upstream to downstream and that the Egyptian administration should be given all required instruments to research and supervise water investigations on the Nile in the Sudanese state (Negm, 2017). The 1929 agreement required the other basin governments to abstain from implementing any irrigation or power production projects without first consulting Egypt. Also, any treatments on the Nile, its tributary, or the lakes that supply it that diminish the quantity of water that comes into Egypt, change its flow periods or lower its volume in a way that harms Egypt should be avoided.

The treaty was focused on controlling the distribution of water between Egypt and Sudan, in addition to stressing the condition "prior notification" as a compulsory term for upstream governments when implementing any activities on the river course or on any of its subsidiaries. Egypt has reaped several benefits as a result of this arrangement. The most significant of them all is Britain's recognition of Egypt's historical and natural rights in the Nile. This gave Egypt greater control over the activities and projects that would be carried out on the Nile for irrigation reasons, not only in Sudan but in all the countries that were involved in the problem and were influenced by the UK, such as Ugandan, Kenyan, and Tanzanian states (McCaffrey, 1993).

3.3.1.7. The 1934 Agreement

On November 23, 1934, the UK (on account of Tanganyika, now Tanzania) and the Belgian state signed this agreement in London (on behalf of Rwanda and Burundi). The treaty's first article stipulates that both sides promise to return any amounts of water extracted from the Kagera River for power production objectives prior to its entry into the Tanganyika, Rwanda, and Burundi

borderline. The ability to use Nile River water to create electricity should not have an impact on the amount of water coming into the primary channel from upstream places (Krishna, 1995).

The 6th Article, on the other hand, requires a state that desires to utilize the Kagera River for irrigation reasons to inform other states six months before the implementation of such projects in order to enable adequate time for any state to raise and consider any possible reservations. We can see that this was the first agreement that went beyond prior agreements dealing with current irrigation difficulties to include industrial usage. This agreement's significance stems from its emphasis on previous notice (Abdo, 1965).

3.3.1.8. The 1949 Egypt & the UK Exchange of Notes

Between 19 January 1949 and 5 January 1953, Egypt and the United Kingdom (on behalf of Ugandans) exchanged notes concerning Egypt's involvement in the construction of a dam and reservoir on the Owen waterfalls by the Victoria Lake exit – work was accomplished in 1954 – to produce power from water in Ugandan state. Both sides promised to raise the peak of Owen Dam to elevate water thresholds in Lake Victoria Nyanza, as well as recompense Ugandans who may be hurt as a consequence of the lake's soaring water thresholds. This will boost Egypt's share of power and irrigation generation water, as well as provide Uganda and Kenya with more energy. This accord is a clear example of collaboration and coordination amongst various Nile network governments (Fahmi, 1965). Egypt agreed to assist monetarily with the construction of the reservoir, whose primary goal is to produce electricity for Uganda, in return for an increase in Egypt's portion of Nile water used for irrigation.

Egyptian, Sudanese, Ugandan, Kenyan, and Tanzanian states resolved in 1956 to continue studying the Keoga and Albert basins based on this accord. The treaty was signed in August 1967 in collaboration with the UNDP, and the project was overseen by the World Meteorological Organization. HydroMet was the project's name. Rwandans and Burundians joined the initiative at a later point. This is further discussed in the next subsection. The following two paragraphs contain a better understanding of the 1949 notes exchanges.

They traded notes on this accord, alluded to the 1929 agreement and pledged to uphold it. It further specified that the deal to construct the Owen reservoir would be realized based on the heart of the 1929 deal. As a result, the 1953 agreement represents – in part – a reaffirmation of the 1929 treaty, which is presently in dispute. As a result, it's a statement about how critical it is to ensure that water flows into Egypt at the same times and in the same amounts (Negm, 2017: 692).

The 1953 treaty, in which Britain promised on account of Uganda that the construction and running of the Owen power plant would not diminish the water that flows into the Egyptian state, change its arrival timings, or decrease its quantities in any way that would hurt Egyptian interests. In compliance with the Articles of this agreement, the Ministry of Irrigation constituted an Egyptian mission to check the functioning of Owen reservoir and the volumes of water streaming into it (Negm, 2017: 693).

There have been a number of remarks made about the above-mentioned treaties; the first is that Britain was a prevalent component in all of them, sometimes representing all of the participants. Secondly, these treaties are based on a number of concepts, the most important of which are Egypt's historical and natural entitlements to the Nile's water, as well as the need to avoid harming them direct or indirect. Thirdly, those treaties contained numerous precepts that are important components of existing global river law, such as basin state collaboration, equitable and just use, the responsibility not to affect other states, reparations caused by using the river, and prior discussion on prospective initiatives (Ibrahim, 1997).

3.3.1.9. The 1959 Agreement between Sudan and Egypt

It is the first treaty between two sovereign governments in the Nile Basin addressing the construction of the High Dam and the sharing of the advantages that would ensue. The pact is an instance of onshore governments cooperating for the sake of exploiting the global river's waters. It strives to achieve mutual objectives for both countries without jeopardizing the signing parties' ancient entitlements or the rights of other governments in the basin. The treaty was inked on the 8th of November, 1959, in Cairo, and went into effect on the 12th of November, 1959. It said that each party's acquired rights must be respected and that those rights must be recognized accurately in order to avoid any disputes. It acknowledged Egypt's gained rights, which amount to 48 billion m³ per year for Egypt and four billion for the Sudanese state, in its first article. In the realm of river management and the division of project objectives, both sides resolved – in the second Article – to construct the High Dam and share its objectives, as well as to pay 15 million Egyptian pounds to Sudanese residents who have been affected by this installation (Hassanein, 1997).

In essence, the pact marks Egypt's first collaboration with a sovereign state in the Nile Basin since the region's freedom. The partnership was based on Sudan's unwillingness to sign the 1929 treaties and Egypt's approval of a water allocation strategy with Sudan based on the 1959 agreement (1:3) rather than the 1929 agreement (1:12) as a practical application of the principle of fair and just utilize in light of all accumulated rights, on the one side, and the allocation of Nasser Lake share, on the other (Elkosal, 2004). It is a system that other governments should adopt rather than

fighting over what is remaining of the Nile's water after large volumes were wasted in swampy locations.

It's worth noting that the 1959 treaty incorporated recognition of the essential provisions of existing global river laws, which were referenced in the United Nations convention in 1997. As it maintained cooperative ties with others over the river, it also accepted the idea of "not harming other nations." It also accepted the idea of collaboration among onshore governments and explored compensation mechanisms in the event that a state is affected as a consequence of the High Dam's construction. The agreement recognized the rights of people who used the river's waters and established the requirement of prior notice for any private enterprise.

The 1959 agreement acknowledged the rights of the other governments in the basin and addressed the procedures for dealing with them. "In the event that a state situated on the Nile requires a quota of its water, Egyptian and Sudanese shall concur to study such state's demands together and concur on a cohesive viewpoint about them, if there was a likelihood to embrace the assignment of any quantity of water for a nation, this amount – estimated at Aswan – will be subtracted equally from the shares of both states," reads the 2nd item of the 5th Article of the treaty (Zeid, 2004).

It's worth noting that the Nile Basin states, with the exception of Ethiopia, had no objections to the Articles of the 1959 treaty as it was negotiated and approved, implying that they were all accepted. Ethiopia expressed a general caution, noting that the pact should not jeopardize its rights. The reply to this stance is that the agreement in question governs Egypt's and Sudan's traditional quotas, as well as their mutual duties for their utilization. The fundamental benefit of this agreement is that it is seen as an example of collaboration amongst basin states in terms of the utilization of traditional rights without jeopardizing others' objectives or entitlements. The deal does not imperil the upstream nations' traditional water quotas, so protecting their rights and rights, but it does control the Egyptian and Sudanese usage of their quotas, which they have previously benefited from (Negm, 2017).

Upstream nations, on the other hand, were quick to criticize the pact because they were not included in it and were not engaged. Furthermore, the referral to Egypt's and Sudan's historical and natural rights to the Nile water ensures that the status quo will be maintained. The accord on optimum exploitation of Nile water – inferred by the treaty's title: "Full Utilization of Nile Waters" – means, in these states' view, stripping other Nile Basin nations of any optimism about using it, in addition to the objections of several upstream nations implying that Egyptians and Sudanese decided

to act merely assigning water. The first country on the list was Ethiopia. The protests hit a pinnacle when it asserted on December 23, 1957, following Egyptian-Sudanese discussions over the accord, that it retains all existing and prospective rights in carrying out all essential processes for the utilization of its water reserves. The Ethiopian authorities expressed their displeasure in a note to its foreign office in Cairo. Ethiopia focused on its responsibilities to address the requirements of its economy and people because it is the legal owner of all rivers flowing through its territory while also adding to the necessities of surrounding governments (Negm, 2017).

In essence, the moral justifications for the Nile Basin governments' opposition to the accord are based on sand, and they cannot be recognized legally. In one vein, the countries are regarded as "the other" under the deal; therefore, there are no reciprocal responsibilities binding them to the treaty's signatories unless enforced by global law governing treaties in principle. In contrast, while establishing a partnership deal in the Nile Basin – like other global rivers – might be bilateral, not calling participants to the discussions or participating in the deal is not a legal infraction. Despite the necessity of achieving the greatest possible usage of river flows, there is no requirement that all onshore nations sign the treaty. However, the arrangement has been misinterpreted – ostensibly on design – because Egyptians and Sudanese would not be able to completely exploit the Nile's water if they were not upstream states receiving just a tiny portion of the water. A reasonable reading of the agreement's Articles – in terms of complete water use – is that it relates to the Nile segment that runs through their territory, which is a smaller portion of the entire Nile water (Badr, 2002).

In contrast to the 1929 treaty that pushed those governments to shoulder particular commitments both towards Egyptian and Sudanese states, the pact does not obligate other basin countries to conduct any duties towards them. The 1959 treaty is an explicit bilateral treaty including solely reciprocal duties between the parties; the provisions relating to other Nile nations are linked to Egyptian and Sudanese states' commitments to take a united stance in response to any requests made by other governments about Nile water. Furthermore, the everlasting joint working group established pursuant to the treaty's Articles is accountable for handling the implementation of any Nile-related project from outside Egyptian and Sudanese territory (Kliot, 1994; Negm, 2017).

3.3.2. Pre-NBI Cooperation

3.3.2.1. The Hydromet Survey Project

In 1967, Egyptian, Sudanese, Kenyan, Tanzanian, and Ugandan states consented to the Hydrometeorological Survey of the Catchment of Lakes Victoria, Kyoga, and Albert (Hydromet) Programme for hydrometeorological investigations at those waters (Ali Taha, 2005). Hydromet was

established in reaction to catastrophic floods around Lake Victoria with overseas aid to gather extensive hydrometeorological information (Waterbury, 2002). Rwandan and Burundians joined the five original core nations in 1970, while the Ethiopian state received observer status in 1971 (Godana, 1985: 260). The project's expert board was made up of the leaders of water management agencies of Kenyan, Tanzanian, and Ugandan states and the administrative representatives of the Permanent Joint Technical Commission created under the 1959 Nile Waters Accord, who represented Egyptians and Sudanese. In addition, the General Director of the then British East African Bureau of Meteorology served on the board as a co-opted participant. Hydromet's primary goal was to gather and evaluate meteorological and water-quality information for the equatorial lakes Victoria, Kyoga, and Albert (Taha, 2010: 215). Such interchange of data was supposed to foster a coordinated plan, but due to political upheaval in several basin states, this did not happen. Instead, Hydromet stayed a sub-basin-level tactical collaboration effort (Waterbury, 2002). A substantial amount of hydrometeorological information was gathered, and the tactical collaboration was widely seen as a success, despite the fact that Hydromet did not considerably lead to a convergence of downstream and upstream governments' concerns in the usage of the Nile in general (Taha, 2010). Apart from that, it was an effective venue for debates about establishing a feasible system for local collaboration within the Nile (Eleman, 2010: 227). Furthermore, Hydromet resulted in the signing of an accord in 1977 between Rwandan, Burundian, Tanzanian, and Ugandan to form the Kagera Basin Organization. The Hydromet project came to a halt in 1992 (Bosire, 2011: 206).

3.3.2.2. Kagera Basin Organization KBO

The upper White Nile's riparian governments, Burundian, Rwandan, and Tanzanian states, formed the Kagera Basin Organization (KBO) in 1977, and the Ugandan state participated in 1981 (FAO, 199: 7). Its goal was to foster collaboration among member countries in the Kagera Basin in the fields of hydropower production, management of water resources, agricultural production, fisheries, trade, tourism, and protection of the environment. As a result, their goals extend far beyond simply cooperating on water resources (Waterbury, 1987: 99).

The Organization's cornerstone deal established a control system encompassing the Kagera river basin area (Adar, 2011: 175). It included, first and paramount, the founding of an institutional structure for collaboration with respect to the Kagera Basin, without setting down regulations on the obligations and rights of the riparian nations involved or thorough mechanisms for the development of the project (Godana, 1985: 192). Among the development efforts developed by this body were the building of an 80.5-megawatt hydropower plant at the Rusumo falls on the Rwanda-Tanzania border, as well as several irrigated and agricultural programs. The majority of the

initiatives were not carried out, owing to a lack of money, political unrest in the area, and disagreements among memberstates (Nkurunziza, 2010: 24). The Society was officially folded in 2004 (Bosire, 2011: 208)

3.3.2.3. The UNDUGU Initiative

In 1983, Egyptian, Sudanese, Ugandan, Zaire (now the Democratic Republic of the Congo), and the Central African Republic, as the sole non-Nile-bordering nation, formed the Undugu (meaning, brotherhood in Swahili) unofficial partnership, which had yearly cabinet conferences (Collins, 2000: 260). Undugu functioned as a forum for informal conversations concerning the Nile Basin region's overall economic growth (Peichert, 2002: 121). Burundian, Rwandan, and Tanzanian states later joined, but Ethiopian and Kenyan were simply observers. The project's goal was to organize partnerships in certain sectors, such as efficient water management, power generation, and agricultural growth, as well as culture, telecommunications, and trade (Arsano, 2006: 345).

Undugu was the first endeavour to adopt a modicum of collaboration over the wholebasin area, but it was also chastised for being ineffective (Mekonnen, 2010: 426). Undugu's main concerns were power generation and collaborative hydroelectric initiatives to bridge the several national power systems. Pundits have also argued that Egypt's attempts to build and execute large-scale irrigated and land-reclamation schemes without involving the other riparian governments hampered the initiative's objectives (Mekonnen, 2010: 426). Undugu came to an end in 1993, following the 10th ministerial conference in Addis Abeba (Arsano, 2006: 346).

Undugu's intended goal of "fostering economic, social, cultural, and technological linkages among the Nile riparians" was not even met, but "it at least provided a venue for sharing of information." Undugu acted as a hub for knowledge transfer and as a group used to see the Nile as a whole, not just the sum of its national components" (Brunneeand Toope, 2002: 133). Nonetheless, the significant difficulties Ghali experienced in igniting genuine collaboration among riparians may explain his famous comment, "The next battle in this region will be fought over the waters of the Nile" (De Chatel, 2007: 144). The Undugu group had "fallen" once Ghali was elected UN Secretary-General in 1992. (Waterbury, 2002: 78). Nonetheless, the overall effectiveness of the Hydromet survey and Undugu's efforts created the door for foreign development allies to engage in forming a multinational organization that would include all Nile riparians, leading to the formation of the TECCONILE and eventually the NBI.

3.3.2.4. The 1991 Agreement

After strenuous talks between them related to the implementation of an electricity production station on Lake Victoria, Egyptians and Ugandans entered into an agreement in the manner of swapping notes between the deputy leader and the foreign affairs minister in Uganda on one side and Egypt's foreign affairs minister on the other on May 12, 1991. Uganda has sought the IMF to help fund a new station to produce electricity. It sent letters to the Egyptian, Sudanese, Tanzanian, and Kenyan embassies, as well as a general message containing all of the project's technical specifications. Because Egyptians and Sudanese have voiced concerns about the project, the IMF has put the project on hold until Egyptians and Ugandans can come to an agreement. Talks between the two countries began in 1991, and a deal was achieved in 1991). The agreement required Uganda to accept natural gas to pass at existing rates at the time of signing, as well as complete compliance with the second article, which dealt with storage capacity (3 m for Egypt). The third article specifies that adjustments can be made in Uganda's favour so that energy can be generated without damaging downstream states, while the fourth article indicates that the quantities utilized to create power should be able to deal with the normal flow (Eldin Amer, 2001). Ugandan state, which is a sovereign country, ratified the treaty to indicate its support for the Articles shown in the 1953 deal made on its behalf by Britain. Due to the agreement of 1953 – as indicated above – acknowledging the agreement of 1929 and proclaiming its terms and circumstances, this shows an implicit endorsement of the 1929 agreement by sovereign Uganda.

According to the 1991 treaty, Egyptians and Ugandans shall debate and modify the Victoria Lake water regulatory strategy in a way that ensures Egypt's water demands are met (Badr, 2002). This accord is seen as an accurate portrayal of Nile Basin governments cooperating. Uganda adhered to the concept of prior notice, which means it should tell the states that are likely to be impacted by the project. It also acknowledged the idea of the Global Treaty Transfer by recognizing the 1953 agreement pertaining to the Owen reservoir and storage in Victoria Lake that Britain inked on its account (Mahfouz, 2009).

3.3.2.5. The 1993 Agreement Between Egypt and Ethiopia

Egypt and Ethiopia's head of states inked "the Cairo agreement" on July 1, 1993, outlining the fundamental structure of relations between the two countries for the advancement of Nile resources and the furtherance of mutual economic and political objectives. The treaty's fifth article stipulates that both sides will abstain from any conduct that may jeopardize the other's aspirations in the Nile's waters. In the 6th Article, they also resolved to discuss and cooperate on projects of

common relevance with the goal of increasing flow and minimizing wasted water in the context of general and integrated planning. Furthermore, both sides agreed – in the 7th Article – to set up an advisory system concerning consensual elements, which include Nile waters, and in the 8th Article, they decided to form a partnership structure among Nile Basin nations to assist in augmenting shared interests in developing the river basin (Ouda, 1999). It's worth noting that the deal was confirmed by two independent governments, contradicting Ethiopian accusations that deals between Egypt and upstream nations were inked when those nations were occupied by foreign forces. Furthermore, Ethiopia agreed to avoid harming the objectives of the other party in relation to the Nile, implying that Ethiopia respects Egypt's traditional rights in those waterways.

Excluding the principles of the Helsinki international conference (1966), bilateral agreements decided to be entered by some of the basin states, and the principles of the UN framework agreement, there are no general global contracts that gather all Nile Basin nations to avoid any disagreements that may flare up around the consensual waters after the above-mentioned briefing of the agreements linked to the Nile's waters (1997). In this way, international norms are broad, flexible, and susceptible to a misunderstanding based on each state's objectives and actions (Hillel, 1994). The Nile's water is shared by 11 countries. No mutual understanding that covers all of them about the river basin; thus, a collaborative agreement based on the obtained rights of all stakeholders is urgently needed, as long as no other stakeholders are affected (Allan, 1995).

3.3.2.6. The TECCONILE Initiative

Egyptian, Sudanese, Rwandan, Tanzanian, Ugandan, and Zaire states founded the Technical Cooperation Committee for the Promotion of Nile Development and Environmental Protection (TECCONILE) in 1992, with Ethiopian and Kenyan states joining merely having observer status (Arsano, 2006: 345). TECCONILE was created as a three-year transitioning structure to sustain the operations of the Hydromet Project, which was completed in 1992 (Caponera, 1993: 659). The members anticipated that within three years, a sustainable organization spanning the full catchment area might be established (Mekonnen, 2010: 426). TECCONILE's primary mission was to help member nations in developing master plans and integrating them into a coordinated action plan for Nile Basin progress overall. Using basin-wide collaboration, the protracted objective was to assist member governments in the coordinated and sustainable growth, protection, and usage of the Nile Basin's natural resources (Arsano, 2006: 346).

The Nile River Basin Action Plan was prepared under TECCONILE and officially endorsed in 1995 by the Cabinet of Ministers of Water Affairs in Arusha. All Nile Basin nations contributed

to the formulation of this action plan, which included 22 initiatives with a total projected cost of US\$100 million. The participants unilaterally voted to include the D3 Project, a Nile Basin cooperation concept encompassing the whole catchment region, as one of the prioritised initiatives. This was the forerunner to the 2010 Nile CFA, which was eventually created under the NBI (Mekonnen, 2010: 427).

As with past agreements, just a few of the initiatives were ever realized in the years that followed. Moreover, TECCONILE's work was mostly technical in nature, which discouraged Ethiopians and Kenyans from becoming full members since they saw the Committee's work as insufficient because it did not tackle the core question of equitable water distribution; Ethiopians argued that an institutional and legal foundation for collaboration was substantial and that it should be established before any practical collaboration could be permitted (Brunnee & Toope, 2002: 133). Nonetheless, TECCONILE is widely regarded as a critical prelude to the future period of collaboration among Nile riparian governments, most especially via its Nile River Basin Action Plan (NRBAP) (Mekonnen, 2010: 427). In 1999, the Nile River Basin Action Plan and TECCONILE were superseded by the NBI and its inaugural plan, the Nile River Basin Strategic Action Program (NRBSAP) (Brunnee & Toope, 2002: 135).

3.3.2.7. The 2002 Conferences on the Nile

The Nile 2002 Conferences sequence was another endeavour to encourage reconciliation among Nile Basin governments and facilitate basin-wide collaboration. It was a program of non-governmental meetings that largely addressed tactical concerns with Nile water management. The meeting sequence was set to run for ten years, with one meeting in each of the then-ten riparian states (Brunnee & Toope, 2002: 135). Its inaugural conference was held in Aswan, Egypt, in 1993 (Ali Taha, 2005: 172). Following that, eight more meetings were held, each represented by officials from riparian governments, non-governmental groups, and industry and academic establishments (Oloo, 2011: 158). All Nile Basin governments sent representatives to these meetings, and while the sessions were intended to discuss mostly technical matters, legal questions concerning the use of the Nile's water were frequently the emphasis. An important topic of discussion was the prospect of forming sub-regional organisations in the Nile Basin. This meeting series was also significant in increasing common understanding amongst riparian governments and strengthening the political atmosphere along the Nile 1993 (Ali Taha, 2005: 172).

3.3.2.8. Commission of Lake Victoria Basin

The Lake Victoria Basin Commission was founded in 2004 by the East African Community (EAC) member states as a perpetual EAC apex organization entrusted with overseeing the sustainable growth of the Lake Victoria Basin. This board serves as a platform for coordinating the different actions adopted at Lake Victoria and in its drainage basin, as well as a hub for enabling capital investments and data exchange (Ward & Roach, 2012: 68). The economic importance of Lake Victoria to its riparian nations cannot be overstated, and the EAC member states share a shared aim in fostering economic growth in their own basins. As a result, they now have a tremendous motivation to resolve the long-standing legal concerns concerning the usage of the Nile's water in general (Kagwanja, 2007: 326). To that aim, they have decided to operate as a cohesive bargaining group in prospective Nile discussions under the framework of the EAC (Kagwanja, 2007: 321).

3.3.3. Nile Basin Initiative

The Nile upstream countries that had been marginalised by colonial water usage laws started to question the status quo at the time of independence and shortly afterwards. Tanzanian Prime Minister Julius Nyerere issued the first explicit appeal for a new system. Concerned with his nation's necessity for socioeconomic advancement and concerns about other free East African governments, Nyerere advocated for the renunciation of colonial accords that deprived their rights to the Nile water. On July 4, 1964, Nyerere sent a brief message to Egyptians, Sudanese, and the United Kingdom outlining his nation's position on the 1929 Agreement.

The accords, Nyerere believed, unfairly placed his nation at the whim of Egyptians because they required discussion prior to the start of any work upstream. He argued that such a demand was incompatible with his nation's newly acquired independent position. This Nyerere Doctrine, as it was afterwards called, had become a unifying force for the creation of a new water paradigm in which all riparian governments had equal accessibility to and utilization of water. The notion of a basin-wide organizational structure arose from there. Since Kenyans and Ugandans were already members of an extant agreement, Nyerere's appeal lured two additional East African countries: Kenyans and Ugandans. The East African Community was created in 1967 as an informal confederation. As a result, the Nyerere Doctrine was the driving factor for the establishment of an encompassing organizational system throughout the Basin.

A mixture of global water regulations and realities formed the second factor. For instance, the Mekong Committee was established in 1957 to handle water allocation and regulation with the

lower riparian governments. The U.S. And Mexico had already signed an agreement in 1944 covering the use of the Rio Grande, Colorado, and Tijuana River. The extent to which being members of the UN afforded the chance to learn of extant global regulations that regulated international water infrastructure was also significant. The shifting economic precepts inside the basin nations offered a third driver that pushed for a freshwater sharing agreement. The push for rapid economic expansion and demographic expansion, in particular, necessitated that the status quo had to go. As a result, the upstream countries are required to use their water resources, like Lake Victoria and its streams, for energy production and agriculture. Foreign demands from entities such as the World Bank on Egyptians and Sudanese to work with upstream governments and devise methods to reap shared advantages from this essential resource were another important factor (Swain, 2002a, b). Then followed a watershed moment: a sequence of substantial efforts that culminated in the establishment of the Nile Basin Initiative in 1999.

Following a number of meetings in 1993 and 1994, the Ministers Council established an action plan in 1998, which included a number of initiatives (Tesfaye, 2012). On February 22, 1999, the Nile Basin Initiative (NBI) was established as a result of that plan of action. Figure 2.1 depicts the Basin's geographic span as well as its component riparian nations. The founding of Hydromet and the approval of the TECCONILE action plan are the first major steps toward a complete and thorough basin-wide administrative structure for the River. The NBI, on the other hand, has ushered in a fresh and unparalleled age of collaboration among Nile Basin governments (Brunnée & Toope, 2002: 137).

This effort is an essential organization for Nile riparian nations' collaboration currently (Kaska, 2006: 255). This is also considered a sign of optimism by Egyptian analysts for the completion of a broader partnership deal encompassing all Nile riparian states that will end the century-long struggle between them (Maḥfuz Muḥammad, 2009: 485). For the first occasion, all of the Nile Basin governments got together as members of the Initiative and announced their sincere desire in a shared discussion. This Initiative began as interstate cooperation on February 22, 1999, in Dar es Salaam, Tanzania, during a meeting of the ministers in charge of water resources from the nine signatory countries at the time. It was formed by endorsing the reports of the cabinet conference instead of adopting a founding agreement (Ali Ṭaha, 2005: 175). Apart from Eritrea, which chose observer status, all extant riparian nations had become representatives of the NBI. South Sudan's bid to join the Initiative as the tenth signatory was accepted by the Initiative's Council of Ministers in its 20th meeting held in Kigali on July 5, 2012.

The Initiative's focus is to create the Nile in a cohesive style, distribute economic advantages, and foster regional security and peace (NBI, www.nilebasin.org). The Initiative's

overall purpose, which is intended as a bridging instrument, is to reach a consensus on a sustainable legal and regulatory framework for collaboration that encompasses all Nile riparian countries and integrates the NBI's values, institutions, and structures (Salman, 2013: 20). As a result, the Initiative should be thought of as a pathway instead of a typical framework of shared river administration (Vinogradov et al., 2003: 60).

Figure 14: Members of the Nile Council of Ministers



Source: NBI, www.nilebasin.org

The NBI is steered by the riparian countries' common perception goal of "achieving sustainable socio-economic progress via equitable use and benefit from the common Nile Basin water resources." (NBI, www.nilebasin.org). For the first time in the discussion of the Nile's usage, this proclamation established the notion of balanced usage (Tadesse, 2008: 18).

Adjustments to a number of variables that had previously been tripping barriers aided the Initiative's formation. Increased political calm and economic progress have prompted a substantial

shift in Ethiopia's previously reluctant stance. Economic expansion in Ethiopia needs water, and with growing political calm, efficient planning is now achievable. The requisite political and financial circumstances have been realized for long-awaited initiatives such as the building of the Grand Ethiopian Renaissance Dam. The transformation has also been aided and abetted by an increasing recognition among all riparian states that shared interests prevail in key aspects such as water quality preservation and hydropower development. Furthermore, riparian governments, especially downstream nations, are becoming progressively conscious that the current condition of Nile water consumption is unsustainable, considering the basin's high rates of population growth and growing requirement for irrigated agriculture (Brunnée & Toope, 2002:140–141). One important component was multilateral and bilateral funders' direct engagement. The formation of the NBI, for example, was predated by two years of discussions between the numerous Nile riparian states, in which the World Bank did play a significant function (Swain, 2008: 209).

3.3.3.1. Structure and financing of NBI

The Initiative's administrative framework encourages extensive communication and engagement amongst the governments that share the River (Arsano, 2006: 347). The Nile Council of Ministers (Nile-COM) leads the campaign, which is backed by the Nile Technical Advisory Committee (Nile-TAC) and the NBI Secretariat (Nile-SEC). Furthermore, each member country has a National NBI Focal Point Agency, known as the NBI Office, and also two project centres, one in Rwanda and the other in Ethiopia. The Initiative units are expected to be merged into the organizations that will be constituted under a prospective collaborative framework deal (Salman, 2013: 20).

Figure 15: Nile-Sec, Entro and Nelsap-Cu in pictures



Source: www.nilebasin.org

The Nile Council of Ministers, which meets once a year, is the NBI's supreme organizational and decision-making entity. It is made up of ministers in charge of water issues from

the different Nile riparian countries. The Council's responsibilities include providing policy direction and guaranteeing that the Initiative's interim provisions are followed. It approves the Initiative's operational budget and plans and adopts initiatives and programs (NBI, www.nilebasin.org). This Council was also heavily involved in the development of the CFA.

The Nile Technical Advisory Committee, as stated previously, supports the Nile Council of Ministers. This Committee, which meets at minimum twice annually, is made up of two top figures from each participating country's water department. This Committee supervises the NBI's operations, offers technical help to officials in charge of water management and the Nile Council of Ministers, and gives advice on water resource management and development in the Nile Basin. Lastly, it serves as a link between the Nile Council of Ministers and the Initiatives on the one hand, and relevant stakeholders, on the other (NBI, Governance, www.nilebasin.org).

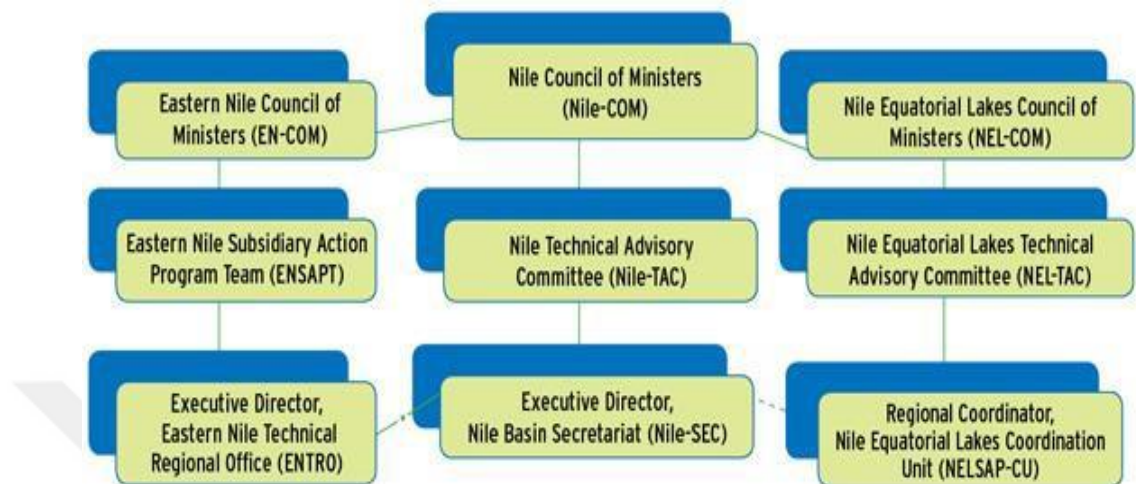
The NBI Secretariat, the Initiative's administrative entity responsible for all administrative operations, notably financing, provides organizational support to the Nile Council of Ministers and the Nile Technical Advisory Committee. This is led by an administrative director, who is appointed by the member nations every two years (NBI, Nile-SEC, www.nilesec.nilebasin.org).

It provides support to the Eastern Nile Council of Ministers (ENCOM) and the Eastern Nile Subsidiary Action Program Team (ENSAPT), as well as managing and coordinating ENSAP program preparation and secretarial services (NBI, ENTRO, www.entro.nilebasin.org). By 2015; the department was to become an Eastern Nile Sub- Basin Organization with its own legal framework for the eastern Nile's collaborative sustainability. Notwithstanding the office's performance thus far, Egypt and Sudan have temporarily suspended their involvement in its operations in reaction to the CFA's signature by numerous Nile riparian states in May 2010. Additionally, a desk for the Eastern Nile Basin sub-basin and another for the Equatorial Lakes has been created as part of the Project's two subsidiary action plans. The Eastern Nile Technical Regional Office (ENTRO) was established in Addis Ababa as the executive body of the Eastern Nile Subsidiary Action Program for the Nile's eastern sub-basin (ENSAP). Egyptian, Ethiopian, South Sudanese, and Sudanese states are all represented at this regional office.

The Nile Equatorial Lakes Subsidiary Action Program Coordination Unit (NELSAP-CU) for the Equatorial Lakes sub-basin in Rwanda is the second programme location. Burundian state, the Democratic Republic of the Congo, Egypt, Ethiopian, Kenyan, Rwandan, South Sudanese, Sudanese, Tanzanian, and Ugandan states are among the riparian governments that make up the Nile Equatorial Lakes Subsidiary Action Program (NELSAP). The Nile Equatorial Lakes Council of Ministers (NELCOM) and the Nile Equatorial Lakes Technical Advisory Committee (NELTAC)

entrust it with the secretariat function of the NELSAP bodies (NBI, NELSAP, www.nelsap.nilebasin.org).

Figure. 16: The structure of the NBI



Source: www.nilebasin.org

Additionally, each participant nation has its own state department, which is overseen by the Technical Advisory Committee's national representative. Each serves as a hub for state-wide administration of NBI activities and programs, as well as for coordinating and integrating these efforts with other state projects. The Project's structures and activities are supported by donations from riparian governments and development allies (World Bank, 2016).

3.3.3.2. The Programs of NBI

Partnership under the NBI framework is organized into modules. In 1999, the first Strategic Action Program was launched, with two complementary elements. They were the Shared Vision Program for initiatives that spanned the whole coverage zone and the Subsidiary Action Program for sub-basin-level local initiatives (World Bank, 2015: 20– 31).

The Shared Vision Program included a number of basin-wide projects aimed at fostering collaboration and creating capability for collaborative, integrated water governance. The programs focused on environmental preservation, stakeholder participation, regional power trading, and effective water usage for agricultural production, among other things (www.africanwater.org). The basin-wide programs aimed to decrease hostilities between downstream and upstream governments by facilitating conversation among riparian countries further than the question of water use (Check, 2011: 93). As a result, the initiative proceeded with the former D3 Project of the Nile River Basin Action Plan, which was implemented under TECCONILE in order to advance suggestions for an

institutional and legal framework for the Nile Basin (Ali Taha, 2005: 179). The D3 Initiative was introduced as a component of the Action Plan in an attempt to improve proposals for an institutional and legal framework for the Nile Basin, and the proposal was incorporated into the NBI in 1999.

The Institutional Strengthening Initiative extended the Shared Vision Program, which ended in 2009, for additional four years. Currently, the NBI Secretariat's Basin Cooperation Program is the only venue for all Nile riparian governments to communicate information and collaborate on basin-wide developmental strategy (NBI, Nile-SEC, www.nilesec.nilebasin.org).

The second element of the Strategic Action Program is the Subsidiary Action Program, which is aimed to build regional initiatives at the sub-basin stage. The Eastern Nile Basin and the Nile Basin of the Equatorial Lakes have been separated into two investment projects, one for each of the two major sub-basins. This subdivision is founded on the notion that decreasing the complexity of decision-making processes will increase collaboration (Elemam, 2010: 230). This Nile Equatorial Lakes Subsidiary Action Initiative, which includes Burundian, the Democratic Republic of Congo, Egypt, Kenyan, Rwandan, Sudanese, Tanzanian, and Ugandan states, is an investment program for the Equatorial Lakes sub-basin. This program is in charge of overseeing the execution of collaborative water-use projects in the Nile Basin.

It encourages investment in energy production and commerce, water resource management, lake and fishery management, and agricultural trade and production (NBI, NELSAP Projects, www.nelsap.nilebasin.org). The Eastern Nile Subsidiary Action Initiative, which includes Egyptian, Ethiopian, and Sudanese states as partners, is the second regional investment program for the Nile's eastern sub-basin. Eritrea would be a member of this initiative if it chose to formalize its involvement, which is now aimed at ensuring collaboration amongst the three participating nations. Flood and early warning systems, a power transmission line between Ethiopia and Sudan, an energy trading study for the eastern Nile, irrigation measures, and river basin management are among the projects on the table (NBI, ENTRO Projects, www.entro.nilebasin.org).

The NBI's fundamental accomplishment to present has been the strategic separation of action programs into two major sub-basins, each with specialized implementation organizations (Oloo, 2011: 159). As a result of the Initiative, a fresh organizational framework for riparian state partnership has been established that is centred on basin stewardship at the least suitable stage, in conformity with the principles of subsidiarity (Elemam, 2010: 230). The prospect of a confrontation between the Nile's downstream and upstream states is lessened as a result of its split into sub-catchment regions. (Ali Taha, 2005: 194). Though other basin nations continue to conduct

substantial water development projects independently inside their own jurisdiction, the Initiative has resulted in a surge in bilateral building initiatives in the Nile Basin.

3.3.3.3. The Cooperative Framework Agreement (CFA)

The Cooperative Framework Agreement (CFA), frequently referred to as the Entebbe Agreement, is a conceptual model agreement designed to manage Nile basin nations' interactions. It was formed in order to improve and foster collaboration, incorporate governance, sustainable growth, balanced river exploitation, preservation, and preservation. It also calls for the creation of a lasting Nile River Basin Commission, via which member nations will collaborate to enhance and improve the Nile's resources (CFA, 2010). It is made up of fifteen broad tenets and thirty-nine articles outlining riparian states' rights and duties. It is proposed as an international legal tool by the higher riparian states.

The Nile Basin governments created the CFA negotiating group in 2003 to draft a thorough, legally binding agreement for Nile water redistribution. The fundamental goal of such talks is to get an agreement or convention that will form a Nile River Basin Commission. This circumstance prompted the Nile CFA discussions to go further. The draft CFA was presented to the Nile-COM, which convened in June 2007 in Entebbe, Uganda. Notwithstanding long deliberations, no consensus could be achieved on the 'water security issue raised by Article 14 of the draft (Mekonnen, 2010).

This research reveals that the activity of the NBI mirrors the reality of Member State interactions around the Nile, which is separated between a political and a tactical route. These two threads will eventually converge, but for the time being, Heads of State are engaging quite heavily at the policy level, which means that NBI is forced to work around or change the objectives in place to guarantee balanced Nile River usage.

There have been some signs that this deadlock may be a gift instead of a burden in that it may open up a new page in the upstream-downstream discussion and result in a settlement. The Egyptian state is actively pursuing diplomatic relations with the upstream riparian countries (Salem, 2010). Its signing was a watershed moment in the Nile Basin's hydropolitical history, signalling the beginning of the demise of the status quo (Cascao & Nicol, 2011: 317- 325). For Egyptians, this implies losing its traditional hegemony over Nile use, as well as veto power over Nile matters dating back to the 1929 accord. Sudan must also consume more water than was allotted in the 1959 accord for hydroelectric power and agriculture in order to improve (Salem, 2010).

The CFA restricts governments from utilizing the Nile's stream in a manner that might affect downstream nations, a premise shared by other transboundary river accords. However, more critically, the new deal eliminates Egypt's veto authority over upstream initiatives. The completion of the CFA discussions is expected to result in the formation of a lasting Nile River Basin Commission. In addition to reflecting global water law principles, the CFA authorizes the NBI to be turned into a lasting Nile River Basin Commission (NRBC) with legal standing to engage in agreements and monitor CFA execution. Prior to the NBI, Egyptians largely dominated the Basin's water administration. Prior to the NBI, Egyptians controlled the progression of the Basin's water resources entirely through harassment, blocking monetary endorsement through its influences with the World Bank and African Development Bank, and relying on previous treaties that granted Egypt the biggest chunk of Nile Water. Such accords, meanwhile, have been ignored by the upstream nations.

In recognition of the Nile Basin's significance to the social and economic welfare of its citizens, almost every riparian nation established committees to assist in the preparation of a fundamental report of collaborative partnership, to be premised on principles of equitable and rational utilisation of water and sustainable growth based on global norms and trans-boundary River insights. The basin parties agreed to the Cooperative Framework Agreement (CFA) to regulate their interactions with respect to the Nile River Basin in order to enhance incorporated governance, sustainable growth, and amicable appropriation of the basin's natural resources, and also protection and conservation for a current and prospective generation. They have also served an important function in Nile basin partnership and local energy incorporation in specific (Jungudo, 2021).

3.3.3.4. NBI limitations and Challenges

As previously stated in the earlier section, the NBI was successful in establishing deployable frameworks to involve all Nile Basin nations in water relations discussions (i.e., Council of Ministers), participant involvement and building confidence, and the institution of a bureau capable of coordinating the mobilization of resources and the governance of two regional conglomerate schemes (NELSAP and ENSAP). Furthermore, the organizations have been able to apply the CFA's numerous requirements. Among the objectives include cultivating peace, guaranteeing universal access to safe drinking water, and establishing dispute settlement strategies for current and prospective disputes.

Notwithstanding its impressive accomplishments, the NBI program is encountering certain

hurdles. Legal underpinnings, getting the Egyptian state back to the NBI, Preserving the Progress, Control and Resources, and Partial Ratifying of the CFA among the Basin States are among the problems influencing the NBI's efficiency. Member states have progressively taken on responsibility for the NBI by increasing monetary and in-kind contributions to meet yearly core expenditures. However, not all have exercised the necessary caution in this regard. This must be addressed immediately, and the Member States must continue to allocate funds from national budgets or seek other funding sources to undertake jointly defined and planned cooperative water resources initiatives. There is also a need to begin the next wave of cooperative water resource management and development projects, and to that end, the international community, particularly development partners, must remain engaged and provide vital financial and technical support on an ongoing basis. Developing relationships with new development partners is also a goal, and in order to establish a stronger "family of partners," the NBI must continue to demonstrate its professionalism and competence in carrying out activities at all levels.

Another point of contention between the upstream and downstream basin governments is Article 14(b) of the CFA, which addresses the possibility of amending the colonial accords. The NBI was formed to aid the transition from unilateral to multilateral Nile resource management through the CFA. However, the CFA has yet to be approved by the majority of NBI members. While the upstream governments agree that the CFA should replace the colonial accords and establish a new legal framework to promote fair and efficient water management, the downstream states insist that the CFA acknowledge the legality of the 1929 and 1959 agreements. The NBI's operations have been hampered by the controversy concerning Article 14(b). Due to the CFA's impasse, two basin nations refused to pay their yearly fees to the NBI in 2010 and have refused to engage in some NBI-initiated initiatives. As a result, the NBI's main restriction is the lack of a legal framework.

Looking down the road, Egypt's re-entry into the NBI is a necessary precondition for future river cooperation and growth. Egypt has a large stake in all projects going place along the length of the Nile since it is the most downstream and most subject to river changes. Understandably, this is a critical issue for the nation's social, economic, and water security, and all representatives of the NBI acknowledge it as such. All Nile Basin nations, as well as the international community, have an interest in resolving the deadlock and encouraging Egypt to re-join the fold. Key Nile development concerns cannot be solved unless there is a common desire and capacity to do so.

Egypt requires the Nile and the Nile requires Egypt. Politics is the art of the possibility, and the Nile's hydropolitics are no exception. Breakthroughs are feasible if there is goodwill, ingenuity in seeking common ground, and a consistent effort. A stated intention to fix the issue is an important beginning point. Cascao stated in his interview with Jungudo (2021) that continued

unilateralism is not an option given the hazards that climate change poses to all Nile nations, as well as the finiteness and fragility of whole basin resources, including valuable ecosystems. Allowing a stalemate that jeopardizes collaborative action and collaboration to exist implies that issues and difficulties will continue to grow and replicate. There is a serious risk that the progress accomplished thus far through cooperation may be reversed.

Historically, one of the main impediments to regional cooperation in the Nile Basin has been the existence of historical legal agreements over water, specifically the 1929 agreement signed between Egypt and the United Kingdom (as the basin's colonial power) and the 1959 agreement signed between Egypt and Sudan. It should be emphasized that these agreements were negotiated. They are partial in scope, as they do not include all Nile riparians; they grant specific volumetric allocations to Egypt and Sudan alone; they are binding for signatories but are not legally recognized by other riparians; they have historically been the major stumbling block in the hydro-political relationship between the two downstream riparians and the upstream neighbouring states, and they continue to have a huge influence over the ongoing cooperation process. In reality, this has been one of the basin's greatest failures in previous cooperation efforts. It is based on the fact that the delicate topic of past agreements has not been addressed. The downstream nations assert that international collaboration is feasible without having to confront previous water treaties and what they regard as their "historical and acquired rights." Upstream nations believe that collaboration is impossible without revising previous agreements and approving a new global accord.

If the NBI is to become a permanent River Basin Commission, it will need to be founded on a Treaty. This was the parallel track pursued for years alongside the Cooperation Track under the NBI, which resulted in the negotiation's completion when the CFA was signed by six upstream nations. When the CFA is ratified, it will be transformed into a treaty, allowing the Nile River Basin Commission to be established.

Jungudo (2021) stresses that regardless of how hard nations try to negotiate agreements/treaties to find long-term solutions to issues, the fact is that these accords are never permanent, even after they are accepted and confirmed by national authorities. This reality has prompted Stephen McCaffrey (2003), a well-known international water specialist, to argue that treaties should be written to allow for future flexibility. This is due to the fact that changes in the domestic and external environments occur over the duration of an international agreement. As a result, it is only via this flexibility in treaty design that states in a compact can adjust to unpredictability, such as changes in climate and demands resulting from population and economic growth surges.

If an agreement is pliable or not, a number of factors need renegotiation. These situations can be used to confront currently underway and unsteady issues (legal and envisioned perks), ambiguous and newly emerging concerns (environmental, social, and economic), legal requirements (e.g., termination or renegotiation clause), regional stability and peace, numerous externalities, enhanced interaction, and the requirement to fortify co-riparian promises to reach win-win remedies.

3.3.3.4.1. Concerning NBI's member states political interests

Notwithstanding attempts to advance partnership among riparians, with the NBI being the essential catalyst, the two generally understood different factions pursuing their own different benefits are: the Ethiopian state, a rising economic authority and the nation where the Blue Nile begins, and the Egyptian state, which is highly reliant on the Nile because it is the state's only water supply, but has benefited for years from a greater location to make a decision on how to utilise Nile Water (Paisley & Henshaw, 2013).

Others support these two conflicting countries: Egyptians have long been supported by Sudanese, which is also a downstream nation, on the basis of a shared objective in preventing upstream advances and the concept of "solidarity of Arabs." Ugandan state, on the other hand, has agreed with Ethiopians, citing the same upstream worries about the dam's capacity to create energy. Sudanese have progressively started to recognize the significant engineering and commercial advantages that cooperation with Ethiopia can provide: it would gain greatly from purchasing affordable electricity from Addis Ababa, and it has thus gradually thrown its assistance behind the GERD (Di Nunzio, 2013; Cascao & Nicol, 2016) (Though current situation about the GERD demonstrates a withdrawing stance of Sudan on its initial position).

3.3.3.4.2. The defensive Hegemony of Egypt

Egypt's stance is unquestionably the most combative, fuelled by the potential harm of water scarcity. To properly comprehend Egypt's international affairs and geopolitics goals, it's crucial to remember that retaining access to the Nile is critical to Egypt's economic existence and state defence (Lie, 2010). Despite the fact that Egyptians use nearly all of the Nile's fresh water, very little of it comes within Egypt's national territory (like was earlier mentioned) (Obengo, 2016: 98). Due to the phrasing of colonial Nile-related accords and conventions, Egyptians, along with its "friend" Sudanese, have traditionally been given preference over other riparians. Egyptians not only received the largest portion of the Nile's water supply, but they also had power over upstream initiatives under the 1929 treaty.

Water concerns, on the other hand, grew highly politicized and securitized during the Arab Spring in 2011. Under President Muhammad Morsi's brief term, this entailed a reversion to a more aggressive attitude, with the warning of military intervention against Ethiopians being made public (Casco & Nicol, 2016). Even when a panel of specialists ruled that the GERD would not impair Egypt's security, Egypt continued to oppose it as a danger to national security. Nevertheless, Di Nunzio (2013) claims that these were only mere threats and that Egyptians, owing to domestic volatility, fiscal degradation, and economic catastrophe, lacked the necessary strength to interfere in the Ethiopian state and "destabilize the state," as suggested (Di Nunzio, 2013). Egyptians' Toshka New Valley Project (NVP), which began in the 1990s and is expected to be finished by 2020, is perhaps a "worthless project". It aspires to create a second Nile Valley to enhance agricultural output and fresh employment further from the Nile Valley. It would be accomplished by using canals to divert water from Lake Nasser to irrigate Egypt's the Western Desert. Yet, the initiative has been chastised for failing to adequately consider social and environmental consequences (Warner, 2013).

Regrettably, according to Di Nunzio (2013), Egypt's posture has deteriorated, and the nation is becoming progressively perilous as a result of a diverse array of imperatives: severe droughts, with forecasts predicting that Egypt will run out of water by 2025, powerful growth in population, and restricted agricultural land have indeed made Egyptian state the world's biggest cereal distributor (the nation imports 60% of its overall food requirements) (Di Nunzio, 2013). Egypt's perilous situation has prompted it to vehemently resist any project that threatens its water supply, notably the CFA and Ethiopia's GERD. Egypt stopped its membership in the NBI in 2010 while opposing the CFA on the grounds that it contradicts past colonial accords (Di Nunzio, 2013). Egypt's precarious posture has frequently been accompanied by a combative attitude, including warnings of military intervention. According to Lie (2010), Egypt eased its stance during the 1990s, officially abandoning the military solution (Lie, 2010: 16).

Egypt's President Abdel-Fattah El-Sisi has been seeking to rekindle Egypt's ties with African countries in recent times, going to visit Uganda and Rwanda and meeting with South Sudanese Leader Salva Kiir in Egypt to address the state's present situation ⁴³. In March 2017, the water ministers of Egyptian, Sudanese, Ugandan, and Rwandan states met to address Egypt's concerns over the CFA. The NBI is also planning a team to visit Cairo to examine the possibility of Egypt re-joining the NBI after a seven-year hiatus. ⁴⁴ Egypt's reconciliation may be understood by a series of events like its declining power to induce its neighbours, particularly since 2011.

Moreover, the accord might be viewed as a "critical juncture" in terms of Nile basin

coordination norms and procedures. In comparison to studies undertaken under ENTRO, for example, technical collaboration in the formulation of GERD is more particular and project-oriented. Moreover, GERD collaboration is mostly guided by national interests, with little engagement from foreign allies, relying on financial and technical assistance from the nations involved. Finally, the GERD is the product of a concept that began as a multilateral initiative, resurfaced as a national-level Ethiopian initiative, and was subsequently codified in an intergovernmental trilateral signed contract with Sudan and Egypt (Casco & Nicol, 2016: 566).

3.3.3.4.3. Is Ethiopian hegemony on the rise?

Simultaneously, the Ethiopian state has transformed itself from an impoverished nation to a powerful regional actor with significant negotiating power, owing to its hydropolitical aspirations. The unilateral decision to begin construction of the Grand Ethiopian Renaissance Dam (GERD) in 2011 exemplifies this enhanced power.

Demonstrations have erupted in response to the dam's development, particularly in Egypt. Sudanese, on the other hand, has remained a minor player in the GERD debate, "trying to downplay the dam's possible adverse impacts and rallying behind Ethiopian state" (Di Nunzio, 2013). However, because of the sheer size of its reservoirs, GERD is expected to destabilize the "hydropolitical established order," which has given Egypt disproportionate power in regional affairs for years (Woolfrey, 2016). Ethiopia's initiative is being described as a plot to "connect the area to Ethiopian state by sending several megawatts of power produced by dams on the Blue Nile and Ethiopia's rivers," according to experts (Verhoeven, 2015). The Ethiopian state says that the new dam will control flood management, minimise the threat of erosion and silting, and prolong the life of the dams beneath streaming as a provider of hydroelectric energy for the surrounding area.

This turn towards unilateral activities could perhaps be fuelled by unhappiness in the regional framework, in addition to Ethiopia's evident hegemonic objectives. Ethiopia's membership in the NBI, as per Cascao and Nicol (2016), was predicated on the expectation that a future CFA would allow for the development of multifunctional facilities in Ethiopia's mountains. Per the researchers, Ethiopia was the driving force behind upstream nations signing the CFA and attempting to form a new sort of upstream coalition with the equatorial Nile nations. Once regional investments were weakened or postponed again, its faith in the NBI as the correct framework for short-term initiatives evaporated, putting unilateral investment as the only viable option.

Considering Ethiopia's decision taken to proceed with the GERD, the NBI continues to operate, notwithstanding the unsettled legal and administrative status after 2010 and the absence of project execution. Ethiopians, on the other hand, have kept giving the NBI and ENTRO political, tactical,

and economic assistance without disruption while underlining the need for a fundamental holistic deal that would promote fair use of the River Basin's resources.

3.3.3.4.4. Other actors in the region

South Sudan's secession from the Sudanese state in 2011 altered the geopolitical situation in the area, and the South Sudanese state subsequently petitioned for membership in the NBI. This desire was likely sparked by the other CFA signatory nations who longed for South Sudan to join the CFA in order to offer the "directly required sixth nation for the CFA to function effectively and efficiently" (Salman, 2011: 165).

South Sudan's separation had ramifications for Sudan's status in the NBI. While Sudan quit the NBI with its long-time partner Egypt in 2010, South Sudan's secession and subsequent reduction in oil earnings, the 2008 world food crisis, and other circumstances forced Sudan to rethink its objectives. Sudan has opted to emphasise its economic growth on agriculture, relying on irrigation through the Blue Nile programs. As a consequence, Sudan's interest in discussing water as well as hydrological facilities has returned (Casco & Nicol, 2016). As a result, it renewed its affiliation in 2013 and encouraged Egyptians to do similar. Sudanese also began raising the Roseires Dam to improve water holding capacities, and it even sponsored Ethiopia's GERD project, anticipating that it would offer extra water for the nation's ambitious agricultural ambitions (Casco & Nicol, 2016). Sudan's longstanding diplomatic relationships with Egyptians have deteriorated, while relationships with Ethiopians have strengthened (Casco & Nicol, 2016).

In July 2016, Egyptian Irrigation Minister Mohamed Abdel Ati visited the Nile-Com 24th yearly convention in Uganda, where he announced Egypt's wish to return to the organization and seek to fix CFA issues. Furthermore, Egyptian, Sudanese, and Ethiopian states adopted the DoP on the GERD in Sudan in March 2015, with the goal of giving precedence to downstream nations for power produced by the project and compensating for any harm (Tawfik, 2015). The GERD DoP put an end to a four-year disagreement over Nile water pacts and recognized upstream nations like Ethiopia's right to prioritize energy development. Although not headed by the NBI, it is an initial draft of a CFA deal (Casco & Nicol, 2016), highlighting Ethiopia's elevated standing in the area (Woolfrey, 2016). The research reveals that the activity of the NBI mirrors the reality of Member State interactions around the Nile, which is separated between a political and a tactical route. These two threads will eventually converge, but for the time being, Heads of State are engaging quite heavily at the policy level, which means that NBI is forced to work around or change the objectives in place to guarantee balanced Nile River usage.

3.3.4. The GERD Talks beyond IPoE

3.3.4.1. The USA

The involvement of additional-regional powers, notably the United States, is one of the impediments to the GERD issue. After Egypt's President, Abdulfetah Alsisi, asked that US President Donald Trump arbitrated the GERD discussions in 2019, the US government sponsored a meeting between the three nations' Ministries of Foreign Relations and Irrigation, Energy, and Water (US Congress, 2020). To approve the deal document for the three nations, President Trump was stood in for by Treasury Secretary Steven Mnuchin. As a consequence of the water security priority, a number of foreign players, mostly superpowers, are interested in resolving issues between disputing parties' governments. They are attempting to impose authority throughout Africa (European Union, 2021). Conversely, superpower participation does not necessarily stem from a desire to resolve a conflict amicably. In a televised phone discussion with Sudan's Prime Minister in October 2020, for instance, US Donald Trump shouted "Blow It up" in favour of the Egyptian position in the Ethiopian-Sudanese conflict (John, 2020).

As a result, the United States' role in the GERD conflict has the aforementioned weaknesses: The three states could not come to an agreement on the participation of the United States in the talks. The Egypt side is primarily responsible for the Trump government's resolve to participate in this exercise. Ethiopians did not want a discussion that would take the place of the previous procedure. US Treasury Secretary Steven Mnuchin drafted a document on the dam's filling and functioning. The extent of US involvement, on the other extreme, was significant, and the Trump government and the World Bank's position on the issue evolved from mediators to arbiters. As a result, the summit was called off in February 2020 when the United States shifted its participation in negotiating the ultimate accord. Testing phase and completion must not occur without an understanding," Secretary Mnuchin remarked in a release. Despite the fact that the US authority, specifically the Treasury Office and the World Bank, did not receive official approval as a dealmaker from all three countries, the US authority, primarily the Treasury Office and the World Bank, introduced a deal regarding the filling of the GERD and the overarching functionality of the reservoir (Krampe et al., 2020). This problem plainly demonstrates that the United States' participation in the proceedings is biased against Ethiopia, a key partner in Middle Eastern affairs. Following this declaration, Ethiopia's government rejected the United States' involvement in the negotiations and emphasized its desire to see the deal implemented via African-led procedures (Public Service Commission, 2020).

Ethiopia has indicated unequivocally that the dam would be filled regardless of who

approves it (Mehari, 2020). This is in line with the notion of a fair and reasonable sharing of the water supply without inflicting serious harm to riparian countries. Egyptians and Sudanese have requested that the United Nations Security Council intervene to prevent Ethiopians from filling the dam before negotiations begin. The two nations have made separate appeals to the UN Security Council, claiming that until a binding deal is reached, the dam's filling and overall functioning will be halted, causing regional security issues. Ethiopia, on the other hand, asks that the wider Nile River Basin Agreement be ratified and that the procedure involve all NBI states, even though Egypt and Sudan have refused to embrace these conditions (Krampe et al., 2020).

As a consequence of the Washington prejudiced remark regarding the bargaining processes, the Trump government has opted to withhold \$100 financial assistance to Ethiopians. The Biden Government, nevertheless, reversed this judgment and shifted the attention to other issues (European Union, 2021).

Various players, in addition to the United States, have stated grave worries about the GERD negotiations. As a spectator, the EU participated in the GERD discussions and backed the AU-led initiative. The EU did not use budget freezes to exert pressure, just as the Americans did under the Trump regime. Ethiopian and Egyptian states are crucial allies for the EU in the Northeast African continent and its Horn. As a result, the EU backed the African Union's attempts to arbitrate the GERD problem and find a settlement among the riparian governments (European Union, 2021).

The Arab League is the other important player in the GERD negotiations (Egypt Today, 2021). This League of Arab Nations, which was founded in 1945 and is based in Cairo, Egypt, has 22 state parties. In its endless sessions, the League expressed solidarity for Sudan and Egypt in the GERD conflict and regarded Egypt's and Sudan's water security to be part of Arab security. Three Arab League members (Djiboutian, Somalians, and Qataris) have, nevertheless, opposed the Arab League's decision on the GERD conflict, which is dominated by Egyptians.

In general, the process of creating collaboration among the Nile Basin nations was hampered by the intertwining of past disputed discussions on river management, national interests between member nations in the basin, and the impact of outsider players. Furthermore, the combination of these three forces, which emanated from both domestic and foreign players, fostered a feeling of suspicion and competitiveness among the basin's governments.

3.3.4.2. Is African Union Losing its Essence?

Following the collapse of talks in the United States, the three nations proceeded to meet under

the auspices of the African Union. The heads of the three nations, Egyptian, Sudanese, and Ethiopian states, decided on July 21, 2020, to proceed with discussions via African Union channels. They are members of the Union, which gives them a deeper awareness of and closeness to the issue. The AU authorities accepted the obligation, and the United Nations Security Council applauded the AU's role as a facilitator in the GERD negotiations. Moreover, some authorities referred to this strategy as a "window of hope"(Public Service Commission, 2020).

A first session was presided by South African Cyril Ramaphosa, who was already approached by Ethiopia's Prime Minister Abiy Ahmed, who requested that the President facilitate the talks based on the precept of African concerns being solved by African-led mechanisms during his state visit to South Africa. The President of South Africa was the AU's Chairperson at the moment. He began to play a proactive role in the issue, and after consulting with the leaders of countries of the three disputing countries (Ethiopian, Egyptian, and Sudanese states), he interceded as a mediator (Mehari, 2020). The first resolution procedure was carried out via a virtual conference of the African Union's Directorate of Assembly (US Congress, 2020). Following the establishment of the AU's position in the discussions, inspectors (4 in total) were assigned to monitor the proceedings. The African Union (AU) hosted the first and second session discussions with the three riparian nations on the topic of GERD on June 26 and July 2-13, 2020, respectively. "90% of the concerns of the discussions between the three nations have been already settled," says the AU Chairperson, President Ramaphosa, and the AU Chairperson, Mousa Faki Mohammet, after the summit ends on June 27, 2020. Five significant resolutions were taken during this session: 1) The three countries (Ethiopian, Egyptian, and Sudanese states) shall avoid expressing any remarks or adopting any measures that might threaten or constrain the AU-led initiative to reach an amicable alternative to the unresolved issues. 2) It was resolved to "enlarge the Tripartite Committee trying to deal with GERD problems, which currently consists of Egyptians, Ethiopians, and Sudanese, with the involvement of participants, notably South Africans in its potential as AU Chairman, Representatives of the AU Agency, and specialists from the [AU] Bureau"; 3) "The enhanced Commission [is to] convey its document to the Chairman of the AU... in a week" from June 27 2020 (thus before July 5 2020); 4) The Agency resolved to reassemble the AU-led session in 2 weeks of June 27 2020 (i.e., prior to July 5 2020) and "take into account a document on the results of the bargaining of the exceptional matters regarding the GERD issue"; 5) Ultimately, the Agency asked the UNSC "to take account of the essence that the AU is issued of this issue" (Public Service Commission, 2020).

Ramaphosa will take over his position as head to the Congolese president, Felix Tshisekedi, at the conclusion of his tenure. As a result, on April 6, 2021, the three nations travelled to Kinshasa to

go ahead with their discussions (European Union, 2021). Despite the fact that the process is still in its early stages, it cannot provide tangible outcomes. The main sources of contention are the filling method, the yearly filling timetable, and the questions of future reconciliation of conflict. Egypt and Sudan requested that additional extra-regional players, including the United States, United Nations, and European Union, as well as continental actors, primarily the AU, be included in the mediation process. Sudan was the first to suggest, and Egypt was the first to support this quadrilateral method.

Sudan's Prime Minister, Abdullah Hamdok, issued a statement to the aforementioned institutions requesting the creation of the quad structures to head the GERD negotiations. This piece was issued on March 13, 2021, in response to Abdulfettah El Sisi's commitment to join the quadripartite parties in this exercise. The Union will continue to supervise the discussion procedure in the quartet group, with additional extra-regional players associated with the process to assist the discussion. Furthermore, the two nations reached an agreement for the GERD negotiations to the point of preserving their objectives in any way, even military force. Ethiopia, on the other hand, insists on the AU-led framework in the GERD negotiations and that other country be excluded from the procedure (Egypt Today, 2021; European Union, 2021).

Regarding the AU-led discussions, the legal and technical problems, primarily concerning the dam's long-term operations, resolving disputes processes, prospective Nile River initiatives, and associated matters, have already been mentioned in the accord. Egypt and Sudan's main worry is obtaining assurances that the outflow of water would remain consistent with their long-term average flow. It includes receiving recompense if the flow causes additional damage to upstream nations. Egyptians and Sudanese desire a definitive agreement well before the dam's completion based on this worry (Egypt Today, 2021).

Ethiopia, on the other hand, claims that the requirements of upstream nations, primarily Egyptian and Sudanese states, concern the discharge of the Blue Nile, which is absolutely unsustainable (European Union, 2021). Furthermore, Ethiopia claims that it has a right to use its environmental riches for prospective growth, which includes GERD. The main Ethiopian position is to keep the settlement process founded on the DoP agreed upon in March 2015 by the Ethiopian, Egyptian, and Sudanese states (Public Service Commission, 2020). According to the DOP, "the three nations shall resolve their problems arising from the reading or execution of this agreement by agreement via discussions and talks. The DoP's key concerns include the rational and fair utilisation of water resources, as well as the avoidance of substantial impact in the Nile Basin. It involves disseminating critical details about any river basin initiatives. According to the DOP, "the

three nations shall address their problems arising from the understanding or execution of this agreement by agreement via discussions and talks.” Despite the fact that the three nations ratified the DOP, they cannot agree on how to put the principles into action. Ethiopia is constantly urging the upstream nations to negotiate a deal based on the DOP and to establish a treaty that ensures an equal and fair sharing of Nile Water (Dessu, 2019).

During the negotiating procedure, domestic safety issues in Ethiopia, Sudan’s transitioning procedures, and boundary disputes between Ethiopian and Sudanese states exacerbated the problem of GERD discussions. Egypt and Sudan authorities have made unilateral declarations concerning the project and have even participated in a combined military drill (European Union, 2021).

Notwithstanding continuous attempts, the African-led initiative is hampered by a lack of a legislative framework governing the usage of natural resources in the region. The absence of legal and administrative competence to adjudicate river basin resource managing issues is also a key barrier for the AU-led talks. Furthermore, treaties should be comprehensive and incorporate all riparian countries. The GERD controversy has thus far mostly involved the three opposing nations (Ethiopia, Egypt, and Sudan), although the problem of utilizing the Nile for developmental reasons affects all upstream and downstream nations. The AU should have arbitration rules in place in order to maintain previous deals and avoid prospective disagreements. In addition to the legislative framework, the Union lacked the administrative ability to arbitrate water issues. Furthermore, the continent lacks significant expertise in dealing with water resources concerns and settling river conflicts. For instance, the Union or the former OAU has no proven record of resolving water problems, like the widely contested Nile River concerns. Because water conflicts have the capacity to create local and regional security, African self-reliance in managing conflict and arbitration should be backed up by solid organizational capability. The Union formed unstructured teams, so there is a general dearth of knowledge in all sectors connected to resolving Africa’s transborder resource management concerns (European Union; 2020, Public Service Commission). As a result, in order to build effective continental methods, these current issues must be addressed.

Table 12: Some mediation attempts by states

Countries	Intention	Date	Results
Russia	Mediation on GERD	June 2021	Withdrawn
Algeria	Mediation on GERD	July 2021	No results yet
USA	Mediation on GERD	May 2019	Failed
Turkey	Mediation on GERD	2021	No results yet
France	Tripartite Nile	1906	Failed
UK	Mediation on the Nile	1882, 1906, 1929	Failed

Figure 17: The main actors in the Nile Basin Talks

Actors			
Actor	Participation	Functional group	Geographical scale
Government of Egypt	●	Public	Internal international
Government of Ethiopia	●	Public	Internal international
Government of Sudan	●	Public	Internal international
Nile Basin Initiative (NBI)	●	Public	Internal international
European Union (EU)	●	Public	External
Government of Switzerland	●	Public	External
Government of the United States of America	●	Public	External
World Bank	●	Public	External
● Conflict Party ● Conflict Resolution Facilitator			

Source: www.climate-diplomacy.org

3.4. Conclusion

3.4.1. Can GERD bring about Cooperation

To begin, it seems that GERD has ushered in a new era of collaboration in the Eastern River Nile; the various sayings used by commenters, such as fresh legal arrange by Salman, game changer by Tawfik and Casco and Nicol, and a fair system by Yihdego, make this point plainly obvious. The bargaining procedure and the agreement reached between the three major nations are substantially distinct from the previous system. That, nevertheless, can be contested from two perspectives. One difference is that the latest agreement neither explicitly rejects nor endorses the regulations of the “former Nile framework.” As a result, as Tawfik demonstrates, Egypt is worried that the DoP does not really ensure downstream nations’ “traditional allocation.” On this, Yihdego and Salman have regarded the new cooperative structure as a new start that potentially opposes assumed claims based on prior accords. The opposing perspective is that GERD phenomena are the consequence of multilateral basin-wide activities that culminated in the NBI and the CFA, as well as post-2011 discussions (Casco & Nicol, 2016). However, GERD may have shattered the gridlock in collaboration between upstream and downstream nations, making post-GERD trends a significant milestone in the Nile’s hydropolitical ties (Salman, 2009).

Secondly, the regional and global ramifications of GERD ought not to be underestimated. Internationally, the DoP signature, which referred to a sophisticated sub-basin and happened to correspond to operations of the UN Waterways Agreement, demonstrates the interdependence of regional and global processes. Territorially, because the concepts enshrined in the DoP are congruent with the CFA and the UN Waterways Agreement, the three nations may be urged, based on a variety of regional and national variables, to raise or resume their basin-level partnership. It was considered as an especially fitting cure to the habit of unilateral action in the River Nile by Salman, Yihdego; some Nile nations have indeed been invited to enter and sign the CFA or to ponder embracing the UN Waterways Agreement. Following the introduction of the United Nations Economic Commission for Europe’s Convention on the Protection and Use of Transboundary Watercourses and International Lakes, as well as a devotion underneath the SDGS regarding incorporated water asset administration at the transborder stage, possibilities to make a significant impact on the efficiencies and dynamism behind such worldwide and basin-level procedures have become readily accessible.

Furthermore, this problem shows that nations push their objectives across local participative networks based on founded norms and practices. The Egyptian, Ethiopian, and Sudanese states are engaged in the GERD, IGAD, and NBI partnership procedures, as emphasized by Casco and Nicol. As with the efficiencies among worldwide and basin-level procedures, local attempts provide solutions that promote ‘cross-fertilization’ of accepted rules across a variety of distinct collaborating structures, as well as distinct areas for developing a common insight into the key legitimate laws and standards.

Thirdly, it is important to emphasize the acknowledgement of GERD as a useful enterprise for power generation and commerce, efficient water resource usage, possible socioeconomic advantages, and so on. As Tawfik puts it, the softening of tensions and advancement of cooperation, as well as evolving commerce, financing, and energy-sharing procedures in the sub-basin and, further than that, could be significant favourable steps against greater reward dissemination between bordering riparians and the advancement of the local process integration. Nevertheless, worries about the dam’s ecological as well as other downstream implications persist. The parties’ efforts to resolve their issues via local, regional, and worldwide specialist investigations are a step in the right direction. However, owing to GERD’s autonomous structure, along with being funded and operated by a single riparian, and the numerous worries about downstream hydroelectric as well as another water usage, the benefit-sharing conclusion is far from predefined (Tawfik). Whenever the two downstream nations spurned “initial Ethiopia’s suggestion of such collective responsibility,” the potential for this benefit-sharing plan was lost (Salman). Nevertheless, if the sides resolve numerous obstacles in order to tackle the perks and worries of all the states affected, like addressing problems involving the dam’s filling and functionality and developing already extant collaborative efforts like the NBI, GERD must result in ever more integration and cooperation in the region.

Lastly, among the pressing challenges in the immediate and long term is the Great Ethiopian Renaissance Dam reservoirs. Considerations in this respect are critical to comprehending how GERD could truly affect a fresh and equitable legal system or function as a gamechanger. A mediated deal must be developed to avoid damage to the Sudanese and Egyptian states throughout filling while maintaining a fair as well as an accurate filling for optimal GERD usage.

3.4.2. Failing Talks and the Prospects of Violence

In fact, given the current asymmetry of relations of power between Cairo and Addis Ababa, it is plausible for Egypt to threaten Ethiopia with war when its perspective of the upstream cannot be

changed. Even when Egypt was driven to the verge of war and chose to fight Ethiopians on the battlefields and destroy the GERD, such an attack would likely be short-lived. The protracted consequence implies that the tap's control cannot be shifted. Given the considerable range between the two countries, information suggests that implementing an alternative would be too expensive for Egypt. Though military experts believe the alternative is politically as well as militarily possible, the economic ramifications and organizational practicalities would place a significant load on a nation that has already been driven to its brink by the Arab Uprisings. Furthermore, the likelihood of such a clash expanding into a regional conflict is significant. It's because Egyptians might effortlessly draw power from partnerships in the twenty-two-member League of Arab States and, more likely, Western friends. According to hydro-alliances formed during and after the 2010 Cooperative Framework Agreement, Ethiopia, on the other hand, might find backing from chosen basin countries upstream of the Nile. Furthermore, states like Israeli, Turkish, and Qatari, which were all accused of supporting Ethiopia's Dam, might express their solidarity for Ethiopia.

Sudan, while tough to predict, might go either direction. Before the resignation of President Al-Bashir, the Sudanese authorities had moved their historical allegiance with Egyptians over water allocation to Ethiopians due to the projected advantages of the electricity trade after the Renaissance Dam was completed. Furthermore, Sudanese and Egyptians have had a tense on-again, off-again relationship over a disputed area, the Halayeb Triangle. When previous President Al-Bashir was deposed in a military takeover, the country's political balances shifted in relation to its neighbours. For instance, its brief but cordial relationship with the Ethiopian regime deteriorated once the new leadership gained power in 2019. Between 2020 and 2021, Khartoum blamed Ethiopia for illegally occupying the Al-Fashqa area located between their two countries. In an effort to outsmart Khartoum on its conflict about the Halayeb Triangle, Cairo promptly expressed its backing for the Sudanese administration's efforts to regain the Al-Fashqa area from the Ethiopian state. By a media story, on March 2, 2021, Egyptians and Sudanese authorities inked a military pact in Sudan (Hendawi, 2021). One of the stipulations of the treaty was that Egyptians would send military assistance to Sudanese at any moment if necessary. Another condition is for cooperative army military drills to safeguard the country's borders with the Ethiopian state. It was also alleged that the Egyptian administration had spent the very last six years acquiring military weapons capable of fighting faraway battles.

It must be noted that, while Egyptian President Abdel Fattah al-Sisi has continuously urged for a diplomatic resolution to the situation, he has never ruled out the potential of violence. In truth, a military confrontation was on the table at the start of the war in 2011, if only momentarily. Although Egypt subsequently chose diplomatic discussion as its next best option for minimizing the

costs of violent war, it is my conviction that Egypt will not renounce these military operations in the near future. It should be noted that in previous conversations, Cairo was said to have deployed part of its armed soldiers and equipment in Eritrean and South Sudanese. Both nations have common borders with Ethiopia, with Eritrea on the northern and South Sudan on the southwestern. Also, with the Egyptian and Sudanese just signing a military treaty, any forecasts of a future conflict cannot be disregarded. Sudanese state acts as a shield between Egypt and Ethiopia, two possibly belligerent states.

This writer also believes that, from a realist standpoint, there really is nothing problematic with the existence of such “military superiority” or hard power or with conducting training operations in the vicinity of an adversary state as a display of might. These dangers manifested evidently in 2020. Ethiopia’s publications, for instance, claimed Egyptians attempted to access Ethiopian state computer systems. There were indications of threatening words and posters uploaded by anonymous Egyptians on media platforms. They filed a lawsuit against the forums to caution of the potential repercussions if the dam building continued.

Again, from the standpoint of the Ethiopian state, whose right to construct the GERD on a Blue Nile stream is based on the concept of complete sovereign territory, the likelihood of deploying armed actions to protect the dam is impossible to argue. In reality, it was revealed in an October 2020 news item that Ethiopia’s Air Force was conducting 24-hour monitoring over its territory to defend the dam (Tekle, 2020). Brigadier Yilma Merdasa, Chief of the Air Force, warned stakeholders that his nation was prepared to prevent an opponent who would intend to strike the project.

Notwithstanding their repeated declarations of willingness to protect the dam and region, the Addis Ababa leadership, too, recognized the huge costs and indirect harm that may result. As a result, both Cairo and Addis Ababa chose to negotiate as the most practical and cost-effective option.

The period of Egyptian hydro hegemony is seemingly coming to an end in the twenty-first century. The English supremacy, created in 1929 through the Water Basin Accord and maintained in 1959 with the Full Usage of the Nile Treaty, is now gradually becoming inapplicable, appropriate, or moral in today’s world. Ongoing and prospective agreements will determine the power balance in the next years, but current geopolitical shifts end up making it evident that Egypt’s hydro hegemony is under threat while Ethiopia’s hydro hegemony is building up. If Egypt loses its attractiveness and hydro-hegemony over the Nile, it will serve as a warning storyline for contested river systems all over the world: outright supremacy of a waterway through coercion or

forcible control would not be embraced as a valid way of asset appropriation in the twenty-first century, no matter how deep-seated such institutions may be.

British utilized a variety of methods to gain complete authority over the Nile, with the containment tactic of establishing normative treaties and hence moulding institution practice being the most efficient. Moreover, it was via normative consensus techniques that the British and, subsequently, Egyptians were capable of setting the “game rules,” therefore securing Egypt’s hydrohegemony in the region. To give an example, the 1902 deal between British and Ethiopian states, the 1929 accord between Britain and Egypt, and the 1959 agreement between Sudan and Egypt not only barred upstream States from using Nile waters but also successfully founded Egypt’s ‘ancient’ right and thus established the current regime.

Egypt’s repressive hegemonic strategy has not changed in the twenty-first century. The global community has made any resort to violence illegal in today’s society. As a result, Egypt is employing less apparent coercive measures advocated by Werner Munzinger, who claims that “Ethiopians... poses a menace to Egypt.” Egyptians must be kept in turmoil and despair.’ At the moment of writing, analysts and political figures are arguing that Egyptians participate in clandestine and proxy actions in order to distract Ethiopia’s focus and dedicate its scarce resources to addressing domestic problems.

Egyptians have a great purpose in destabilizing the Ethiopian state and preventing it from focusing its finances on exploiting the Blue Nile’s riches. Regarding the 2016 public strife in the Ethiopian state, for example, the head of state of Ethiopia asserted in his message to Legislature that factions and individual people whom our nation describes as terrorist groups, like the Oromo Liberation Front and the Ginbot 7, the team have teamed up with Egyptian organizations and are directly to blame for the notable obliteration in their state.

Another popular coercive tool which Egyptians routinely employ to guarantee adherence and maintain their hegemonic role is war rhetoric. For example, erstwhile Egypt’s President Hosni Mubarak famously warned to ‘blast Ethiopian state’ if it constructed a reservoir on the Nile River. More lately, Mohamed Morsi, that succeeded President Mubarak, openly disclosed that Egyptians would exchange their blood for their share of the Nile. Furthermore, Egyptians, as being the most developed in hydrological competence, have historically attempted to influence the “widespread notion [of] contributors and riparian adversaries to cement [their] dominance on natural resources.” Throughout the 1980s and 1990s, for example, numerous of Egypt’s experts were capable of holding crucial environmental and political posts at the World Bank. This led to the formation of the World Bank Operating Directive that enables the transfer of funds of World Bank funds intended

to advance river systems only when those very initiatives meet the minimum requirements [outright acceptance] of water-sharing political factions favouring the established order. In addition, Egyptians were poised to effectively deny an African Development Bank loan to Ethiopians for a proposed project, claiming that the project would restrict Nile discharge. Global financial institutions have been unwilling to finance anything upstream on the Nile that would impair the crucial supply of water to Egypt...’ However, Ethiopia lacked the finances to build its own extensive irrigation network. As a result, one of Africa’s harshest paradoxes emerges the country that supplies the River is incapable of sustaining itself.’

In brief, Egypt has, in an effective manner, formed an ‘overbearing’ hydro-hegemony in the River Nile by trying to enforce its asset acquisition and containment techniques via coercion (armed services troops, secret missions, and political rhetoric), normative deal (ratification of pacts), and knowledge construction and sanctioned debate techniques. As a result, the upstream states have been unable to use the Nile’s waters.

Below are some processed data this thesis has gathered regarding the major events, dates and their categorization of whether the historical trends in the Nile Basin have been positive or negative. An effort has been made to put together dates and major occurrences regarding the Nile. These include major and minor treaties, agreements, pacts, protocols, and talks. Meetings, discussion attempts, understandings, tensions (both minor and major), political moves, and others. The thesis has categorized them and put them under dates and events as follows.

Case Summaries

		DATE	
CATEGORY	Activism	1	26 January 1915 – 30 October 1918
		Total	N
		1	1
	Agreement	1	06-May-1906
		2	07-May-1929
		3	12-Dec-1959
		4	21-May-2010
		5	Nov-2010
		6	28-Feb-2011
		7	09-Jul-2011

	8	14-Jul-2012
	9	06-Apr-2013
	10	03-Jun-2013
	11	04-Dec-2013
	12	04-Jan-2014
	13	24-Apr-2014
	14	26-Jun-2014
	15	23-Mar-2015
	16	16-Aug-2020
	17	27-Oct-2020
	18	25-Feb-2021
	19	05-May-2021
	20	15-Jun-2021
	21	15-Jun-2021
	22	09-Jul-2021
	Total	N 22
Conflict	1	Jul-2007
	2	06-Jan-2021
	3	08-Mar-2021
	Total	N 3
Conflict	1	01-Jul-1942
	2	Oct-1956
	3	1958
	4	2011-2018
	5	25-Jan-2011
	6	Apr-2012
	Total	N 6
Conflict Threat	1	26-Mar-1979
	Total	N 1
Convention on the		21-May-1997

Law of the Non-Total N	1	
navigational Uses		
of International		
Watercourses		
Disagreement	1	23-May-2010
	2	10-Feb-2014
	3	12-Feb-2014
	4	19-Feb-2014
	5	09-Dec-2019
	6	04-Aug-2020
	7	28-Aug-2020
	8	19-Apr-2021
	Total N	8
Disagreement	1	04-Nov-2013
	Total N	1
Dispute	1	1978
	Total N	1
Draft	1	2007
	Total N	1
Initiative	1	22-Feb-1999
	Total N	1
Law	1	20-Aug-1966
	Total N	1
Partnership	1	19-Sep-2011
	Total N	1
Politics	1	1985

Table 14: Frequency, percentage and events

CATEGORY

Frequency			%	Valid %	Cumulative %
Valid	Activism	1	1.1	1.1	1.1
	Agreement	22	23.2	23.2	24.2
	conflict	3	3.2	3.2	27.4
	Conflict	6	6.3	6.3	33.7
	Conflict Threat	1	1.1	1.1	34.7
	Convention on the Law of the Non-navigational Uses of International Watercourses	1	1.1	1.1	35.8
	Disagreement	8	8.4	8.4	44.2
	Disagreement	1	1.1	1.1	45.3
	Dispute	1	1.1	1.1	46.3
	Draft	1	1.1	1.1	47.4
	Initiative	1	1.1	1.1	48.4
	Law	1	1.1	1.1	49.5
	Partnership	1	1.1	1.1	50.5
	Politics	2	2.1	2.1	52.6
	Project	4	4.2	4.2	56.8
	Protocol	2	2.1	2.1	58.9
	Report	1	1.1	1.1	60.0
	Tension	33	34.7	34.7	94.7
	Treaty	4	4.2	4.2	98.9
	Water framework	1	1.1	1.1	100.0
	Total	95	100.0	100.0	

Figure 18: Pie chart of case category.

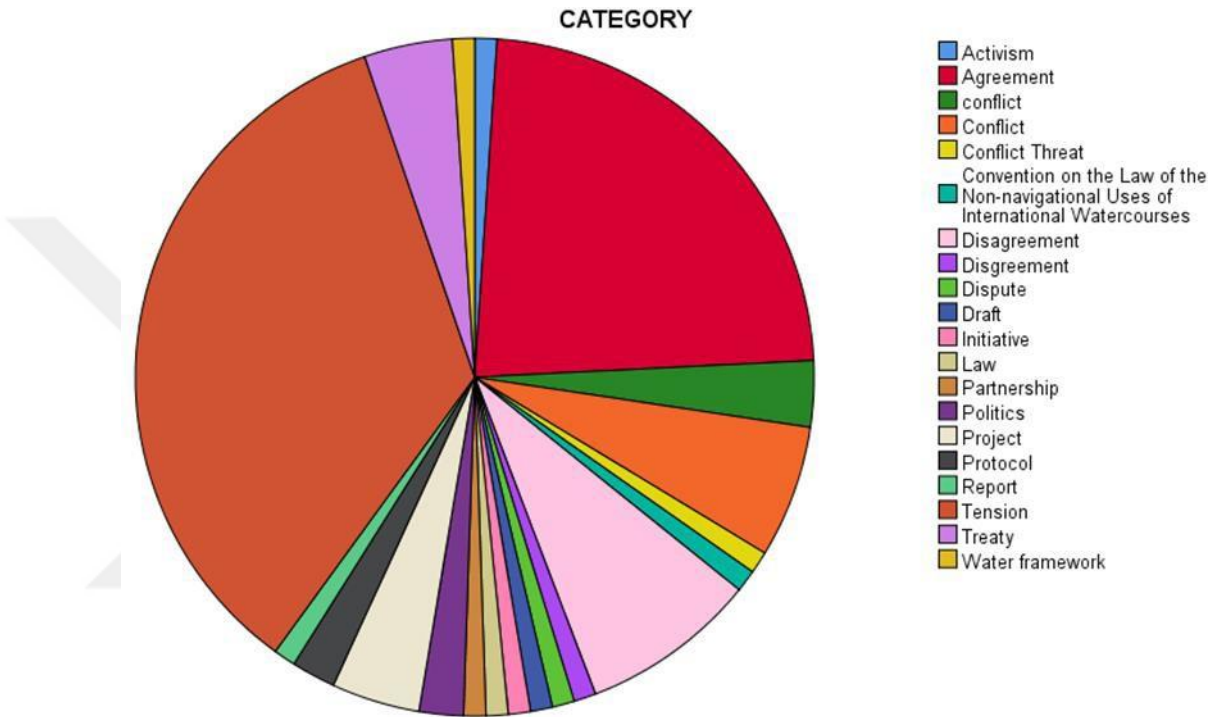
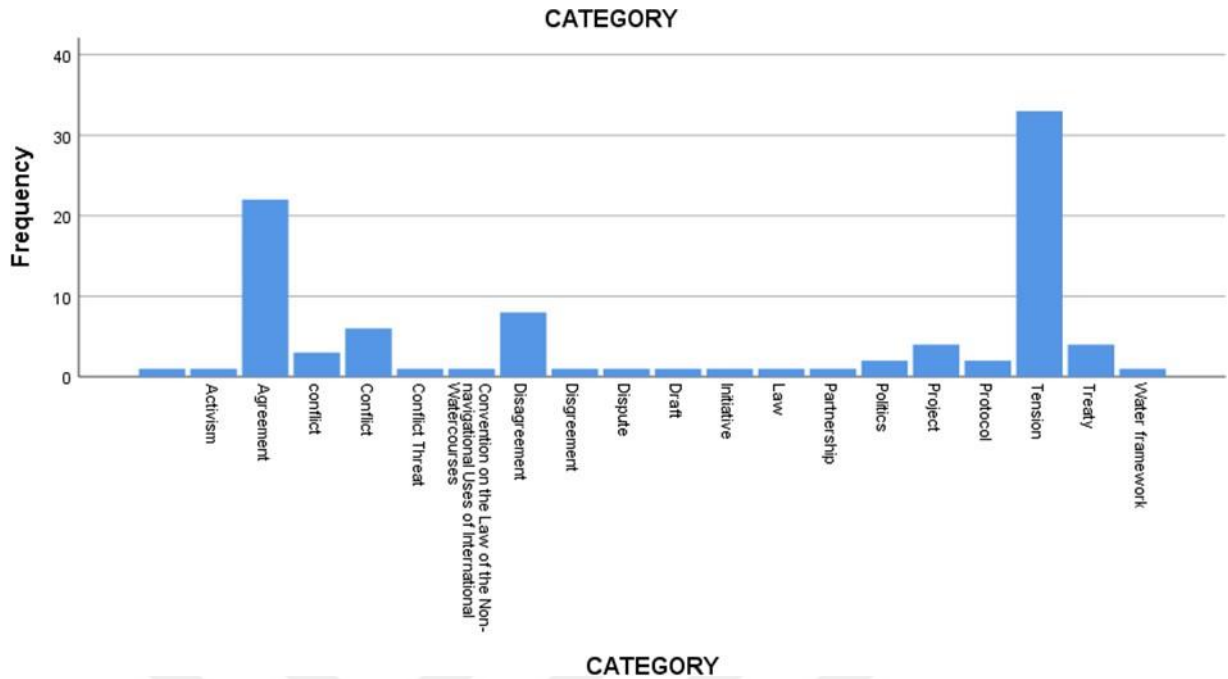


Figure 19: A bar of events



A bar graph, and a pie chart show higher agreement and a much lower disagreement, with the highest being “tensions”, which this thesis project that, if it continues, could erupt as a violent conflict the middle east has not seen before. It is not the objective of this study to stress conflict instead of cooperation but recent and historical events, war drums and rhetoric following failing talks and the waning of the Egyptian hegemony coupled with Ethiopia’s inapparent objective of hydro-hegemony only make war more inevitable.

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APPENDIXES

Appendix 1: IPOE 2013 implementation plan

Implementation Plan

Implementation Plan The project owner is the Ethiopian Electric Power Corporation (EEPCO) which is a semi autonomous body under the Ministry of Water and Energy. The GERDP is planned, designed and executed under Engineering, Procurement, Construction (EPC) arrangement. The EPC contractor is Salini Costruttori S.p.A along with his designer Studio Pietrangeli who jointly have designed and constructed over 200 large dams arot the globe. The owner's representatives are TRACTEBEL Engineering S.A and COYNE ET BELLIER who also have extensive experience in similar projects in the region and Ethiopia . The construction of the Project begun in January 2011 and will take more than seven years to complete and will be in operation by the end of the year 2017. However, it will take some 3 years to commencement of generation of 216 MW from the first two units. Final installation and commissioning of all turbine - generator is anticipated to require 7.5 years from commencement of construction.

Appendix 2: DoP Agreement Between Egypt, Ethiopia and Sudan

**Agreement on Declaration of Principles between
The Arab Republic of Egypt,
The Federal Democratic Republic of Ethiopia
And
The Republic of the Sudan
On The Grand Ethiopian Renaissance Dam Project (GERDP)**

Preamble

Mindful of the rising demand of the Arab Republic of Egypt, the Federal Democratic Republic of Ethiopia and the Republic of Sudan on their transboundary water resources, and cognizant of the significance of the River Nile as the source of livelihood and the significant resource to the development of the people of Egypt, Ethiopia and Sudan, the three countries have committed to the following principles on the GERD:

I. Principle of Cooperation

- To cooperate based on common understanding, mutual benefit, good faith, win-win, and principles of international law.
- To cooperate in understanding upstream and downstream water needs in its various aspects.

CURRICULUM VITAE

His first degree was in Theological studies at the Islamic University of Ghana. He has an MPhil in Philosophy of Religion and another in Middle Eastern Studies, both from Sakarya University. He started his PhD in International Relations at Karadeniz Technical University in 2017. His main research interest is in African Politics, Religion and Politics, Foreign Policy, the Middle East and International Relations.

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