

Construction of Grand Ethiopian Renaissance Dam on the Nile: Cause for Cooperation or Conflict among Egypt, Ethiopia and Sudan

By: Ejigu, Natan Aslake

Supervisor: Dr. Benedikt Schoenborn

*University of Tampere
School of Social Sciences and Humanities
Master's Degree Program in Peace, Mediation
and Conflict Research (Peace and Conflict
Research)
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Abstract

At the time of writing this thesis, the construction of Grand Ethiopian Renaissance Dam (GERD) is advancing. The controversies and cooperation over matters related to GERD are still up in the air amongst Ethiopia, Egypt and Sudan. This study investigates whether the construction of GERD induces more cooperation or conflict amongst these states. When Ethiopia initiated the GERD project in 2011, the reactions from the two downstream countries (Egypt and Sudan) were totally variegated in a way that Sudan avowed and reaffirmed its support whilst Egypt vociferously opposed the project by alleging that the dam would infringe her historical water share rights. As a result, political tensions and war threat interactions were rampant between Egypt and Ethiopia. This scenario mounted at the peak following Ethiopia's tapping of the Nile water for the dam's purpose. Later, the signature of the 2015 tripartite agreement and perpetual water diplomacy replenished their interaction. Hence, hydro-political relations amongst these states fluctuate from cooperation scenario at a time to conflictive situation at another time. That is why this study aimed to clarify the main research question- "is construction of GERD causing cooperation or conflict among the Eastern Nile Basin Nations?"

To entertain this question, the study employed a methodology called Framework of Hydro-hegemony as developed by Zeitoun and Warner (2006) and later updated by Cascão and Zeitoun (2010). The analysis of this framework centers itself on refining and capturing two water conflict predictions together Frey's (1993) power-analytic framework and Yoffe et.al's (2001) scale of water conflict event intensities into one so-called the framework of hydro-hegemony. The hydro-political power positions of these nations have been analyzed according to the four pillars of power positions: geographic, material, bargaining and ideation. The delve study of this research verified Egypt as the basin hydro-hegemon in material, bargaining and ideational powers while Ethiopia is leading the geographic power position owing to her upstream location. The study also reveals that Ethiopia and Sudan are progressively altering their power positions, which guaranteed them to contest Egypt's incessant hydro-hegemony. Beyond the socio-economic benefits of the GERD, it is also served as one of Ethiopia's counter-hegemony strategies in the basin.

Moreover, the bilateral and multi-lateral interactions of these states have also been evaluated per to Yoffe et. al's water intensity scale measurement and their outcomes display moderately positive correlations.

The result of the study constitutes that the construction of GERD is progressively sprouting to open dialogue, trust building and cooperation on water share matters among these nations. This contributes a positive asset to the durability of peace and security, and integration in the Eastern Nile basin rather than provoking dispute and friction in the time period the study extends.

Keywords: Ethiopian Grand Renaissance Dam, GERD, Framework of hydro-hegemony, hydro-politics, Eastern Nile Basin, Conflict and Cooperation, Egypt, Ethiopia, Sudan, Nile River.

Table of Contents

CHAPTER ONE 1) INTRODUCTION

1-1) General Discussion on Relevant Literatures, Background and Methodologies of the Study	1
1-1-1) General Discussion on Relevant Literatures.....	1
1-1-2) Backgrounds of the Study.....	7
1-1-3) Framework of Hydro-hegemony	12

CHAPTER TWO 2) INTERNATIONAL WATER LAW AND FRAMEWORK OF HYDRO-HEGEMONEY

2-1) General Discussion on International Law.....	20
2-2) International Water Law	24
2-3) Fundamental Principles of International Water Law.....	26
2-4) International Water Laws and Framework of Hydro-hegemony.....	31

CHAPTER THREE 3) HYDRO-RELATIONS IN THE EASTERN NILE BASIN: HISTORICAL, POLITICAL AND LEGAL PERSPECTIVES

3-1) General Historical and Political Discussion on the Nile Basin.....	35
3-2) Legal Agreements on the Nile River during Colonial Period.....	36
3-3) Post-colonial Hydro-relations in the Eastern Nile Basin	41
3-4) Future Water Demand and Hydro-relation Prospects in the Eastern Nile Basin.....	44

CHAPTER FOUR 4) CONSTRUCTION OF THE GRAND ETHIOPIAN RENNAISSANCE DAM (GERD) ON NILE RIVER: CAUSE FOR COOPERATION OR CONFLICT AMONG ETHIOPIA, EGYPT AND SUDAN.

4-1) General Discussion about the GERD.....	52
4-2) Is there a Change in Hydro-hegemony because of the Construction of the GERD?.....	57
4-2-1) Hydro-hegemon Positions in Eastern Nile Basin.....	57
4-2-2) Strategies of Hydro-hegemony in Eastern Nile Basin.....	70
4-2-3) Counter-hegemony Strategies in the Eastern Nile Basin.....	72
4-2-4) Eastern Nile Basin Nations Major Political Event Interactions after the Start of GERD Construction	74
5) CONCLUSIONS	92
BIBLIOGRAPHY.....	97

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ACRONYMS and ABBREVAITIONS

BAR	Basin at Risk Database
BCM	Billion Cubic Meter
CFA	Cooperative Frame of Agreement
CIDA	Canadian International Development Agency
GERD	Grand Ethiopian Renaissance Dam
GDP	Gross Domestic Product
GNP	Gross National Product
HDI	Human Development Index
ICJ	International Court of Justice
ILA	International Law Association
IPoE	International Panel of Experts
MW	Megawatts
NBI Nile	Basin Initiative
Nile-COM	Nile Committee
Nile-TAC	Technical Advisory Committee
Nile-SEC	Nile Basin Initiative Secretariat
PCIJ	Permanent Court of International Justice
PPP	Purchasing Power Parity
SIPRI	International Peace Research Institute Report

TECCONILE Technical Cooperation Committee for the Promotion of the Development and Environmental Protection of the Nile

UN United Nations

UNDP United Nations Development Program

UNEP United Nations Environment Program

UNESCO United Nations Educational, Scientific and Cultural Organization

USD United States Dollar

WB World Bank

CHAPTER ONE

1) INTRODUCTION

1-1) General Discussion on Relevant Literatures, Backgrounds and Methodologies of the Study

1-1-1) General Discussions on Relevant Literatures

Now and in the future, in line with the modifications in technology, economy, social and political status of the Nile basin nations, change in natural resource demand and water access right contestations, especially on the Nile river water resource, is inevitable. The Nile basin will accommodate a variety of demands or water utilization interest rights across historical periods to come amongst its riparian states. Depending on the circumstances, these modifications might prone these nations either to more cooperation or tensions. Ethiopia initiated to construct the Grand Ethiopian Renaissance Dam (GERD herein under) in 2011 and the reactions from the lower riparian countries range from a threat of war based opposition to official avowals of support. This thesis scrutinizes whether the construction of GERD induces cooperation or dispute amongst Ethiopia, Egypt and Sudan.

The United Nations World Water Development Report (2015) expounds, in many parts of the globe, an increasing demand and misuse of water resource is resulting in acute pollution and severing water resource urgency. This also have a congruent repercussion on the frequency and intensity of local water crisis that in turn have a serious negative “implications for public health, environmental sustainability, food and energy security, and economic development”¹. Moreover, the report further explicates that the presence of adequate amount of water resource to meet the overall global demand provided that an alterations have made on current water resource use, management and share techniques.²

The fact of the matter is that there are more water resources that are unequally and unfairly distributed than paucity of water resource. Both water scarcity and mismanagement of water abundance are further affected and exacerbated by political changes, mismanagement and climatic anomalies. These phenomena create massive upheavals, demographic transformations and stiff contestation on access to water. At the same time, the competition for water is manifested in demands between different uses: urban versus rural, present uses versus future demands, competing regions or countries, water quantity versus water quality and water concerns versus other social priorities. This competition is further convoluted by “traditional values and customs, cultural and

¹) United Nations Educational, Scientific and Cultural Organization(UNESCO), “Water for a Sustainable World,” 2015,7.

²) UNESCO (2015), 7.

religious considerations, historical factors and geographical variations”³. Hence, this asserts that the current thinking of water resource management detracts from the main notion of the “equitable utilization” of the aquifer system among the upstream and downstream nations in trans boundary or international rivers.⁴

Consequently, “international or trans-boundary rivers”, like most other social science terminologies has no uniformly concurred connotation. Phrases that are usually used in synonym with these words in various researches are “shared rivers” and “watercourse”. Those words are applied interchangeably in this study and holding Benveni’s definition for international rivers as:

*“... exclusively of navigational uses all fresh water resources that traverse political boundaries that are a collective good to which only the riparian states enjoy access. Even though other states are excluded from using them, the riparian states still need to regulate their respective rights and obligations.”*⁵

Globally, the principal source of fresh water for human consumption is the river runoffs. There are 263 major river systems or basins that cross national boundaries and 85 percent of the river runoffs stem from those major international rivers.⁶ Additionally, Trans-boundary Freshwater Dispute Database of Oregon State University conveyed that approximately half of the global fresh water is available through international basins and 145 countries have territories that encompass at least one shared river basin.⁷

Moreover, when two or more countries rely on the same basin, the use, withdrawal, pollution, or management of the upstream countries over the shared river, have both positive and negative impacts on the lower riparian countries that could lead to conflict or cooperation depending on the circumstances.⁸ This thesis examines the act of one of the upper Nile basin riparian country (Ethiopia) by constructing the so-called GERD and assesses its implication on the intensity of the peace and security situations of trans-riparian countries especially amongst Eastern Blue Nile Basin nations: Ethiopia, Sudan and Egypt.

³) United Nations (UN), "The United Nations World Water Development Report 2–Water, a Shared Responsibility," 2015, 373.

⁴) United Nations (2015), 373.

⁵) Eyal Benvenisti, "Collective action in the utilization of shared freshwater: The challenges of international water resources law," *American Journal of International Law* 90(3) 1996, 385.

⁶) Ashok Swain, "Mission not yet Accomplished: Managing Water Resources in the Nile River Basin," *Journal of International Affairs* 61 (2) (2008), 201.

⁷) Ashok Swain, "Water Wars," *International Encyclopedia of the Social & Behavioral Sciences*, 2nd (ed.), 25 (2015), 444.

⁸) Swain (2015), 444.

Before continuing, it is necessary to shed some lights on the general reasons why “trans boundary rivers are more triggering conflict than cooperation at the international level?” Different scholars in the field have a variety of positions with respect to this query. This is crucial to this study since the dam is being constructed on one of the longest international river in the world.

First the conflict scenario, according to Morrisette and Borer (2004), water is dubbed as “the oil of the twenty-first century”⁹. There is a presumption that in water scarce regions especially in the Middle East and North Africa, the war over water will replace the pre-existed war over oil. Besides, developing countries reliance on the international river water resource system obliges them to reorient their national security concerns in order to protect or to preserve supply of water resource.¹⁰ The challenge of competition to control and construction of infrastructures over international water resource is not only confined to the recent history of the world but it is also extended to the ancient societies of the Sumer and Assyria in Mesopotamia, Pharaonic Egypt, Empire of Peru, and China and India, of which the taming of rivers was the catalyst of their evolution.¹¹

According to the United Nations Environment Program (UNEP herein under) 2009 Report, since 1990 among the violent conflicts rampant in the globe, at least eighteen of them are fueled by the exploitation of natural resources. In the last decades, intrastate conflicts that have a nexus with natural resources encompassing fresh water and fertile land are intensifying alarmingly.¹² The US intelligent services assessed that there were at least 10 places in the world where war could potentially break out over the shortage of fresh water supplies, with the majority located in the Middle East and North Eastern Africa.¹³

Furthermore, the terminologies “water” and “war” or “conflict” has been indicated conjointly in numerous water related researches frequently. The assessment of this terminology emanates from the nature and distribution of the international water resource at the global and regional level. Water is the most fundamental resource to human survival. It doesn’t have any demarcation or limitations in traversing the political boundaries of nations that might have conflictive or cooperative demands

⁹) Jason J. Morrisette, and Douglas A. Borer. “Where oil and water do mix: environmental scarcity and future conflict in the Middle East and North Africa,” *Parameters* (Winter 2004/2005), 92.

¹⁰) Morrisette and Borer (2004/2005), 88.

¹¹) Eyal Benvenisti, *Sharing Transboundary Resources: International Law and Optimal Resource Use*, (Cambridge: Cambridge University Press, 2002), 39-40.

¹²) United Nations Environment Program (UNEP), "From Conflict to Peace building The Role of Natural Resources and the Environment," (2009), 6.

¹³) UNEP (2009), 6.

over it. Besides, the international law that governs the states and the management of international basins is rudimentary, incongruous and unforeseeable, (see on chapter two).¹⁴

Pursuant to the 1986 World Resource Institute report, Africa is designated as the poorest continent in terms of annual renewable water resources. In comparison to the global renewable water resource, Africa's share embodies less than 9% of which 20% of it constitutes the total rainfall that designates the continent as the poorest continent in terms of annual renewable water resource. Large parts of the African continent (approximately 66%) lie in the zone where at least part of the year is arid and semi- arid. That is also true to the Eastern Blue Nile nations where recurrent droughts severely disturb agricultural productions.¹⁵ The projected increment of number of population and the poor management of water resource in African countries will galvanize the likelihood of water scarcity and strain in the time to come. These features also have a direct implication on "food insecurity, poor health and damaged ecosystem in many parts of the continent".¹⁶

Scholars who contend water is a source of conflict justify their claim in two ways. First, the notion of its vitality to all aspects of the nation's survival from its inhabitants' biological need to the overall economy of states pervasively. Second, the scarcity of water in arid and semi-arid environment leads to intense political pressure, often referred to as 'water stress'. They insist that the fierce competition to secure access to water resources among the riparian countries would broaden the likelihood for potential interstate conflicts amongst the sharing nations. It is such potential for conflict that transfers global water issues to the arena of 'high politics' at the international level.¹⁷ United Nations (UN) officials and World Bank analysts regularly proclaim that "the previous war was about oil, the next war will be about water"¹⁸.

Haftendorn, sorts out the type of conflicts that might arise from the common water resource disputes point of view as: conflict arising through the use and conflict arising through pollution. The first case is related to conflicts based on the utilization of the common water resource by the upper riparian countries, for instance, construction of power stations by the upper riparian states that might have a harmful effect on the lower riparian countries' water resource interests.¹⁹ Utilization based conflicts are also further divided in to two sub-categories: a relative conflict of distribution that exists when there is an abundant common water resource but there will be

¹⁴) UNEP (2009), 6.

¹⁵) United Nations (UN), "The United Nations World Water Development Report 4–Water," 2012, 177-179.

¹⁶) United Nations (UN) (2012), 178.

¹⁷) UNEP (2009), 6.

¹⁸) UNEP (2009), 6.

¹⁹) Helga Haftendorn, "Water and international conflict," *Third World Quarterly* 21(1) (2000), 51-53.

inequality over the use of the water resource between the upper and the lower-riparian countries. An absolute conflict distribution occurs when there is no enough water resource to satiate the legitimate needs and interests of the riparian countries.²⁰

Thereupon, one can recite any conflict that might arise because of the construction of GERD for hydroelectric purposes as utilization based conflict. Egypt's position towards this dam is based upon the allegation of the obstruction of the normal water flow of the River and diminishes her historical water share right (see on chapter four). In other words, the dam might minimize the amount of water reaching to the lower riparian countries in general and Egypt, in particular that catalyzes conflict of water share right interests. Whether the construction of this dam is causing water resource use type of conflicts or cooperation among the three Eastern Blue Nile basin nations, is the main question of this study that will be addressed at its last chapter.

The other case of conflict transpires when rivers are taken as the means to dispose the wastes of industrial products and the quality of water diminishes. Controversies caused by the contamination of the river by itself and cleaning the water will put those nations that share the river into contestation and tension.²¹ This category is beyond the scope of the purpose of this thesis and further discussion is not provided in this regard. The reason behind is that the thesis limits itself to the utilization aspect of the trans boundary river water resource that does not incorporate the pollution of the river water.

However, after discussing the categorization in detail Haftendorn hold that:

*“In contrast to a conflict arising over pollution, which can result in tension between the states, a conflict of distribution can lead towards violence or military threats. In relative distributional conflicts, the situation is aggravated if the lower riparian cannot prevent a detrimental action by the upper riparian. In this case, the survival of the lower-lying state comes into question and this can lead to its use of military action. In the past, conflicts between Syria and Iraq over the Euphrates, between Israel and its Arab neighbors over the Litani and the Jordan water flow have led to violence on these grounds.”*²²

The adherents of this tenet hold that there are several countries that are in dispute over the sharing of their common rivers. Furthermore, the Nile, Jordan, Euphrates-Tigris, Danube, Indus and Ganges

²⁰) Haftendorn (2000), 53.

²¹) Haftendorn (2000), 54.

²²) Haftendorn (2000), 57.

recited as international rivers that induce conflict in the future.²³ With the exception of the Jordan basin, most international water conflicts have not led to physical violence. However, the threat of the use of arms in these cases is not unusual. Water as a sole cause for major war at state level is arduous to prove till now except small skirmish cases. There are also feasibilities that water scarcity might indirectly contribute to food scarcity and then population displacement and ethnic alignment, which can lead to internal disturbances and political instability and ultimately result in intrastate war.²⁴

Second, the wider school of thought alleges that shared water or international rivers are not only creating competition and conflict or tension among the sharing riparians but also they are playing a crucial role in establishing cooperation and dual or multiple engagements. The plain justification for this cooperation is riparian mutual dependence as the withdrawal or pollution of the river water at one of the stream countries will have repercussions on the water source of the other sharing state that might be prone to dispute and tension among those nations. To curb such disputes, cooperation and mutual understanding among the stream sharing countries is mandatory and inevitable. Scholars attempt to substantiate their position with the signing of 145 water related treaties in the last century and procreation of many regional and international water regimes and institutions among the riparian nations across the globe particularly to address water pollution and water share management matters. Additionally, they hold that the absence of war over water resources is one of the manifestations of the eminence of the assertion that water is creating more cooperation than tensions as a shared resource.²⁵

As a result, a competing theory that discards the sole principle of water mainly causes war, has emerged. According to this new tenet water will fuel greater interdependence –thus it is the means to peace rather than conflict. Although water as a ‘pathway to peace’ is a simplistic slogan, “the challenges of optimal water planning have brought some of the world’s most implacable enemies to the negotiation table and led to agreements and institutions that survived strained relations”²⁶. Tvedt (2010) further explained that for the Nile Basin countries, both options (conflict or cooperation) have been available and continue to be available, and the Nile issue will never be settled once and for all. He further alleges, “...the Nile waters might become a pathway to peace or a currency of war, or both, at different history”²⁷. This is one of the lacunas that fascinated the writer of this study

²³) Swain (2015), 444.

²⁴) Swain (2015), 444.

²⁵) Swain (2015), 444.

²⁶) Terje Tvedt, *The river Nile in the post-colonial age: conflict and cooperation among the Nile Basin countries* (London, New York: IB Tauris, 2010), 237.

²⁷) Tvedt (2010), 238.

to ponder on examining the intensity of the interactions amongst those selected Eastern Nile basin nations especially after the construction of GERD on the Nile river (is it leading more to conflict or cooperation?).

1-1-2) Backgrounds of the Study

The Nile is the 2nd longest river in the world crossing 6,700 kilometers through eleven north-eastern African countries; Rwanda, Burundi, Zaire, Tanzania, Kenya, Uganda, Eritrea, Ethiopia, the Sudan, Egypt and South Sudan. Its two main tributaries are the White Nile and Blue Nile. The former comprises 14% of the Nile river and starts flowing from Burundi and through the Equatorial Lakes, provides, a small but steady flow that is fed by the permanent snows of the Ruwenzori (the ‘rain giver’) mountains. While the latter, contributes 86% of the Nile River descending from the lofty Ethiopian ‘water tower’ highlands. The Blue Nile is characterized by a seasonal fluctuation and its tributaries are the Blue Nile, Baro-Akobo (Sobat) and Tekesse (Atbara) contributing 59%, 14% and 13% respectively of the whole river content.²⁸

To systematize the study, this research also employs two sub-basin categorizations: the Eastern Nile basin encompassing Ethiopia, Sudan, Eritrea and Egypt and the Nile Equatorial Lakes Basin comprising the rest of the Nile riparian countries (mentioned above) plus Sudan and Egypt. As the title of this thesis states, the focus of this study is on the Eastern Nile basin countries with the exception of Eritrea due to its minimal water resource contribution and involvement in the basin system. Beyond that the construction of the GERD is undergoing close to Ethio-Sudanese border that has insignificant interlink to Eritrea’s water resource interests in whatsoever way. The new independent nation of South Sudan is not also incorporated in this study owing to the encumbrances of getting relevant sources though it is part and parcel of the Eastern Nile basin. Hence, in this study the term “Eastern Nile Basin ” states indicates the three countries that embrace Ethiopia, Sudan and Egypt.

Among the 300 million populations of the Nile Basin countries more than half rely on the Nile River for survival. The population growth in the Eastern Nile basin countries will reach to 340 by 2050 according to the current population growth rate projections. This phenomenon will have an alarming impact in minimizing the per capita water availability in the basin.²⁹

It is believed that the River also enabled the development of ancient civilizations in the region such as Meroe and Axum. It is traditionally considered as a holy river in most of these regions. From

²⁸) Ashok Swain, "Ethiopia, the Sudan, and Egypt: The Nile River Dispute," *The Journal of Modern African Studies* 35(04) (1997), 675; Ashok Swain, "Challenges for water sharing in the Nile basin: changing geo-politics and changing climate," *Hydrological Sciences Journal* 56, no. 4 (2011), 688.

²⁹) Ashok Swain, "Mission not yet accomplished: managing water resources in the Nile River basin" *Journal of International Affairs* 61 (2) (2008), 202.

ancient times onwards, Egypt has relied on the Nile River. Owing to the importance of the river in the arid and semi-arid areas of the region, it has been the cause for a number of previous conflicts such as the Egyptian war to control the source of the Nile River with Ethiopia at the battles of Gundet and Guta in 1875 and 1876, respectively.³⁰

After European colonization in Africa, a number of multi-lateral and bilateral treaties were signed regarding the share of water resources. In April 1891, Britain and Italy signed a protocol that prohibited the construction of any irrigation projects on one of the tributaries of the Blue Nile called the Atbara. Ethiopia and Britain (on behalf of the Sudan and Egypt) made a bilateral treaty stipulating, “nothing should be built across the Blue Nile, Lake Tana, or Sobat, that might impede the flow of the Nile”.³¹

Furthermore, colonial powers of France, Britain and Italy in 1906, and Britain and Italy in 1925 made an agreement curbing any upstream diversions of water on the Nile River. In 1929 the Nile Waters Agreement affirming the Egyptian historic and established right on the River was reached. According to this agreement, Egypt and Sudan allocated 48 Billion Cubic Meter (BCM herein under) and 4 BCM of the river water, respectively. This agreement granted Egypt the right to monitor the Nile flow utterly including the right to veto on the construction of any projects by upstream nations. This agreement evidently explicated that ‘no works were to be constructed on the Nile or its tributaries or the equatorial lakes, so far as they were under British jurisdiction, which would alter the flows entering Egypt without her prior approval’³². The 1959 agreement between Egypt and Sudan reassured the resettlement of the water share controversy by increasing their water share to 55.5 BCM and 18.5 BCM, respectively.³³

Recognizing the need for immediate cooperation, nine of the ten Nile Basin countries launched the Nile Basin Initiative (NBI) in May 1999. The main objective of the initiative was to develop the Nile’s water resources in a sustainable and equitable way, ensure efficiency of management and resources, promote cooperation and joint-action, target poverty and promote economic integration, and to guarantee that NBI plans are acted upon, as lucidly stipulated in its initiative plans. The initiative encompasses three bodies, Nile-COM, the Technical Advisory Committee (Nile-TAC), and the NBI Secretariat (Nile-SEC).³⁴ As we can infer from the above explanations, legal

³⁰) Swain (2008), 202.

³¹) Swain (2008), 202.

³²) Swain (1997), 676.

³³) Swain (1997), 676.

³⁴) Nile Basin Initiative, “Corporate Report –2010,” www.nilebasin.org accessed on March 28, 2015.

apparatuses dating back to colonial times have sustained Egypt's regional hegemony over the river water. Evidently, when Sudan asked for a renegotiation to increase its apportion of the water share on the river owing to its growing population, Egypt refused.³⁵

Conversely, from the very start, Ethiopia has denounced most of these agreements made during the colonial era and the bilateral water share agreements of Egypt and Sudan. Ethiopia alleges that none of those agreements incorporate her legitimate water share interests though the country is the source of the Blue Nile and contributes about 86% of the river water. In 1957, Ethiopia proclaimed the unilateral developments of projects on the Nile that was contested by both Egypt and Sudan. In 1963, when Ethiopia claimed 6 BCM of water per year, her claim was totally abated by those downstream countries of the basin.³⁶

Following Ethiopia's unilateral declaration of water projects on the Nile in 1979, Egypt's President during that time, Anwar Sadat replied "If Ethiopia takes any action to block our right to the Nile water, there will be no alternative for us but to use force". The Egyptian Prime Minister Boutros Boutros-Ghali while he was serving as the Minister of State of Foreign Affairs of Egypt (from 1977 till 1991) once said, "the next war in our region will be over the waters of the Nile, not politics". Other upper riparian countries such as Kenya, Tanzania and Uganda, claim their right to a share of water resources on the river but were repeatedly quashed by Egypt.³⁷

In the middle of this long process, increasing water share demand request, historical ups and downs that Ethiopia have started to construct its giant hydroelectric power dam called the Grand Ethiopian Renaissance Dam (GERD herein after) in 2011. This ambitious project is planned to generate over 5,000 Megawatts (herein under MW) of electricity by creating a lake with a volume of over 60 BCM of water. The dam will cost Ethiopia opportunities around \$5 billion and upon completion will supply electricity domestically and also distribute surplus energy to neighboring countries. This certifies the wider objective of the dam in benefiting the neighboring countries from the hydroelectric power. However, Egypt and Sudan are suspicious that the volume of water reaching to countries downstream would diminish as a result of the construction of the dam.³⁸

³⁵) Swain (1997), 677.

³⁶) Swain (1997), 677.

³⁷) Ashok Swain and Isabel Nanton, "Nile: The Troubled Waters," *The Africa Report*, May 25, 2009, <http://www.theafricareport.com/ashok-swain-and-isabel-nanton.html> accessed on March 8, 2016; Peter H. Gleick, "Water and conflict: Fresh water resources and international security," *International security* 18, no. 1 (1993), 86.

³⁸) Dale Whittington, John Waterbury, and Marc Jeuland, "The Grand Renaissance Dam and prospects for cooperation on the Eastern Nile," *Water Policy* 16(4) (2014), 595-96.

In September 2011, the three countries established a team of experts to assess the effects of the dam on the flow of the Nile River. This team reported that the dam would not have a substantial effect on the flow of the river. However, Egypt's authorities rejected the report. The Sudanese government on the other hand, agrees with Ethiopia's assertions as it "would get many benefits from the dam, including better supply of electricity and year-long regulation of the Blue Nile's flow" and called upon Egypt to stop provocations of a "water war" in the Nile Basin nations.³⁹

When Ethiopia started to divert the water for the purpose of the dam, political controversies and tensions increased, particularly between Egypt and Ethiopia. Water is a national security issue for Egypt as most of the country's farmers depend on the Nile River for agricultural irrigation.⁴⁰ Egyptian politician, Sheikh Abdel-Akher Hammad (Egypt's Islamic religious political leader), argued the construction of the Dam as tantamount to 'a declaration of war by Ethiopia on Egypt'.⁴¹ There were political discussions in Egypt with suggestions of military action. Despite these political threats and tensions, Ethiopia has continued the construction of the dam.⁴²

On the contrary, there are still ongoing efforts in making multilateral and bilateral agreements so as to achieve cooperation between Eastern Blue Nile countries. One of these developments is an agreement declaring to end the water dispute on the Nile River signed on March 2015. This agreement mainly focuses on the GERD signatories have reached a 'Declaration of Principles' on regional cooperation, sustainable use of the water resources on the Blue Nile, peaceful settlement of disputes, and principle of developing trust among those nations. This agreement is based on general principles and lacks detailed information. Some scholars, however, have indicated that this is one step in the right direction to resolve widespread water dispute tensions in the region, especially after the construction of the GERD.⁴³

As the study showed above in the general discussion, international rivers could be a cause for conflict or cooperation. Particularly, the construction of infrastructures on the shared river might lead to utilization-based conflict as it might have some impact on the lower riparian countries as the Egyptian authorities alleging on the GERD case. Pursuant to Gleick, there are features of water to be considered as a source of strategic competition among the basin countries:

³⁹) Zeray Yihdego, "The Blue Nile dam controversy in the eyes of international law," *Global Water Forum*, (2013), <http://www.globalwaterforum.org> accessed on March 20, 2015.

⁴⁰) Yihdego (2013).

⁴¹) Ahramonline, "Ethiopia dam is 'declaration of war': AL Gamaa Al-Islamiya," <http://english.ahram.org.eg/NewsContentPrint/1/0/72730/Egypt/0/Ethiopia-dam-is-declaration-of-war-AlGamaa-AlIslam.aspx> accessed on March 12, 2016.

⁴²) Yihdego (2013).

⁴³) International water law Project, "Declaration of Principles of Agreement' signed by Egypt, Sudan and Ethiopia," <http://internationalwaterlaw.org/documents/africa.html> accessed March 14, 2015.

“(1) the degree of scarcity, (2) the extent to which the water supply is shared by more than one region or state, (3) the relative power of the basin states, and (4) the ease of access to alternative fresh water sources. Perhaps the clearest example of a region where fresh water supplies have had strategic implications is the Middle East.”⁴⁴

In this regard, the current Nile water dispute between Egypt and Ethiopia conforms to the water based strategic competition yardsticks of Gleick as one can deduce them from our upcoming discussions of this thesis.

Moreover, the hydro-politics relations of these nations have been categorized by many scholars in the field as a manifestation of a clear imbalance of power whereby the water resource interaction is considered to be competitive but stifled (as Egypt emerged instructive in riparian circumstances to establish negative or dominative form of hydro-hegemony in the region). In this aspect Waterbury holds:

“Egypt is by far the most powerful riparian . . . it still has formidable veto power. It has been successful in imposing the status quo for four decades and it will surely shape any change in the status quo. It cannot dictate terms, but no riparian, including Ethiopia, will seek, let alone welcome, confrontation with Egypt when its well-known national interests are at stake.”⁴⁵

However, the recent hydro-hegemonic political developments in the region following the construction of the GERD query the historically unbridled status of Egyptian negative hydro-hegemonic domination in the region. Owing to this reason, the implications of GERD project on the hydro-politics, and the peace and security of the region, is worth studying. Hence, the frameworks of hydro-hegemony and counter hydro-hegemony will be employed to examine the intensity of the conflict or tension or cooperation among the selected countries. Focus will be given to studying the shift in hydropower relations and counter-hegemony scenarios and their implication on the peace and security of the region after Ethiopia’s unilateral decision to construct the GERD. Regarding the methodologies applicable and the details of what kinds of sources will be employed, are iterated in the following sub-sections.

⁴⁴) Peter H. Gleick, “Reducing the Risk of Water-Related Conflict in the Middle East,” in *Practical Peacemaking in the Middle East*, ed. Steven L. Spiegel and David J. Pervin, (New York: Routledge, 2012) Chapter 8.

⁴⁵) John Waterbury, *The Nile Basin: National determinants of collective action* (New Haven and London: Yale University Press, 2008), 167.

1-1-3) Framework of Hydro-hegemony

Zouiton and Warner's (2006) hydro-hegemony framework, focuses on assessing how powerful riparian states subtly maintain their control of trans-boundary water resources. Moreover, combining the political power relations, hydro-hegemony and intensity of conflict, the research will analyze the current level of water based conflict or cooperation in the region specifically after the construction of the dam initiated.⁴⁶ Water as a scarce resource, ecological factors, and securitization and identity concepts will also be used as ancillary approaches to augment the research.

The competing interests of these riparian countries mostly do not lead to war as it is suppressed by the imbalances of power and has little to do with the seemingly perceived cooperation among them as well. For instance, Turkey has an upstream position on the Tigris and the Euphrates River and can build the GAP (Güneydogu Anadolu Projesi) dam on the River by employing her geographical location as an advantage. Analogously, what is preventing the upstream Ethiopia from doing the same on the Nile? Those scholars replied "power play" is the principal determinant factor for how much and why the water resource in a riparian state could be accessed in international rivers?⁴⁷ Ethiopia is constructing the GERD on the Nile without consulting the lower riparian nations while the latter especially Egypt, is opposing it. What is the implication of this act on the hydro "power play" in the region? requires further examination.

Before elaborating the framework of hydro-hegemony, it is crucial to define and in what sense the word "hegemony" is applicable in this study. The root of the word hegemony is the Greek "hegeisthai" meaning "to lead" or "someone who is guiding the way"⁴⁸. There are differences between leadership buttressed by authority called hegemony vis-à-vis leadership reinforced by coercion known as dominance. And hence, the concept of hegemony attempts to expound, "how groups with power (also known as hegemons) can maintain their pole position (control)" without employing despotism or repression by defining the rules of the game. The "hydro-hegemony" is the

⁴⁶) Mark Zeitoun and Jeroen Warner, "Hydro-hegemony—a framework for analysis of trans-boundary water conflicts," *Water policy* 8(5) (2006); Warner J and Zeitoun M, "International relations theory and water do mix: Hydro- hegemony and international water relations," *Political Geography* 27(7) (2008), 802–10; Ana E. Cascão, "Changing power relations in the Nile River Basin: Unilateralism vs. cooperation," *Water Alternatives* 2(2) (2009); Ana E. Cascão, "Ethiopia Challenges Egyptian Hegemony in the Nile Basin," *Water Policy* 10(S2)(2008), 13-26; Alan Nicol and Ana Elisa Cascão, "Against the flow -- new power dynamics and upstream mobilization in the Nile Basin," *Review of African Political Economy* 38 (128) (2011), 317-325; Mirumachia N. and K. Chana, "Anthropocentric Hydro Politics? Key Developments in the Analysis of International Trans boundary Water Politics and some Suggestions for Moving Forward," *Aquatic Procedia* 2 (2014), 9–15; Naho Mirumachi, *Transboundary Water Politics in Developing World*, (New York: Routledge 2015).

⁴⁷) Zeitoun and Warner (2006), 436.

⁴⁸) Zeitoun and Warner (2006), 438-439.

term used to refer to the particular application and manifestation of this power in the international water sector relations.⁴⁹

Depending on the provision of advantages of the riparian countries, hydro-hegemony could be classified as: positive or negative (dominative). Positive hydro-hegemony exists when the hegemon plays a guiding role and takes actions that are beneficiary for all or most of the riparian countries. Whilst negative hydro-hegemon aggravates the preexisted gaps between the powerful and the weak that in turn results in inequality within the basin system. Pursuant to Zeitoun and Warner, most of the hydro-hegemony in international rivers overlies between those two extreme poles of leadership (positive) and oppressive domination (negative) positions. And the latter one more utters Egypt's hydro hegemony in the Nile Basin.⁵⁰

Warner and Zeitoun (2006) explained that the analysis of this framework bases itself on refining and capturing two water conflict predictions together Yoffe (2001) scale of water conflict event intensities and Frey's (1993) power-analytic framework into one so-called the framework of hydro-hegemony. Moreover, the reflection of the power asymmetries and conflict intensities concurrently on this framework will add up the accuracy of the analysis of the stability of the riparian countries in general and the Eastern Blue Nile countries in this study context.⁵¹ Just as Frey, "the least stable situation is when the downstream nation is most powerful and has most interest in water but the upstream nations also having considerable interest"⁵². Analogues with this context, Egypt's water interest in the Nile river and her powerful hydro hegemony on the one hand and other riparian nations (Ethiopia's and Sudan's) unrelenting demand to secure their water share in the basin on the other hand, might lead to the most volatile situation in the region. With the same analysis, the situation whereby the unilateral construction of the GERD by the non-hegemon Ethiopia while the hydro hegemon in the Basin (Egypt) is opposing it, surges the tendency to the least instable circumstance in the region. By pondering at the actual circumstances and measuring the event interactions of intensity scale of Yoffe et al, this study will scrutinize the accuracy of such views under the last chapter.

Thus, the thesis aims to elucidate how historical laden extreme power asymmetries contribute to hydro-hegemony dynamics in the region plus examines the current status and changes of power by emphasizing on the construction of the GERD. Framework of hydro-hegemony (that also incorporates both 'overt' and 'covert' power) as will be assessed from the perspective of its four

⁴⁹) Zeitoun and Warner (2006), 439.

⁵⁰) Zeitoun and Warner (2006), 438.

⁵¹) Zeitoun and Warner (2006), 437.

⁵²) Zeitoun and Warner (2006), 437.

dimensions of power as defined by Zeitoun and Warner (2006) and more updated by Cascão and Zeitoun (2010).

First, geographic power is related to an overt power that could be earned because of the nation's riparian position on the river. In this case, a country in the upstream position has a relatively more influential power position than the lower riparian countries. In other words, the hegemonic power relies on the distinct advantage that geography provides to an upstream state to manipulate the flows of the shared river.⁵³

This is true in the case of most of international rivers; one can take the case of Turkey's hegemonic power over the Tigris Basin due to her upper stream position. However, our previous premise appears to be futile when interlinked to the Nile basin as a downstream country Egypt has a dominative hydro hegemony power over the upstream countries (including Ethiopia).⁵⁴ Detail historical, legal and geopolitical justifications will be provided for Egypt's hegemony in the region in the upcoming chapters of this thesis. The unilateral decision and construction of the GERD by the upstream state (Ethiopia) could be seen from the angle of its geographic position of the country. That indicates locational power play a key role in determining hegemonic or counter-hegemonic power in the Nile basin as well (see on Chapter Four).

Second, material power, being the most visible and overt type of power, it encompasses "economic power, military might, technological prowess and international political and financial support"⁵⁵. It is much more influential especially when it is cumulatively availed with bargaining and ideational dimensions of powers. The recent material powers of the Eastern Nile countries will also be studied under the last chapter to show changes and the gaps or the status quo paradigms in detail.⁵⁶

Third, bargaining power is about the ability of a riparian state to regulate the "rules of the game and set agendas" in matters of the shared water resources. Terms of treaties and negotiations, and the parties of the treaties, will also be defined by those hegemon nations by influencing the weaker nations through incentives to comply with their decisions and positions. At least for the past forty years after her independence, Egypt has managed to keep her bargaining power incessantly. According to Buzan, Egypt has made the Nile issue into a "national security issue" by declaring, "Egypt is the gift of the Nile and the Nile is the gift of Egypt"⁵⁷. Can this argument hold water after the GERD? (I.e., will the bargaining power of Egypt continue or will it be disrupted by the latest

⁵³) Cascão and Zeitoun (2010), 31; Zeitoun and Warner (2006), 442-443.

⁵⁴) Zeitoun and Warner (2006), 439.

⁵⁵) Cascão and Zeitoun (2010), 31.

⁵⁶) Cascão and Zeitoun (2010), 31.

⁵⁷) Cascão and Zeitoun (2010), 31.

developments in the basin? And what are the implications of this disruption (if there is any) on the peace and security of the region? How about Egypt's securitization of the shared water resource vis-à-vis the development of international water law principles like the equitable utilization of water resource?

Fourthly, ideational power denotes 'power over idea' and construction of knowledge that "represents the capacity of a riparian to impose and legitimize particular ideas and narratives"⁵⁸. Cascão and Zeitoun (2010) has stated:

*"..ideational power allows the basin hegemon to control the perceptions of the allocative configuration of the societies both in its own country and in the neighboring riparian countries, thereby reinforcing its legitimacy. An abstract conception, ideational power may be exercised through knowledge structures, sanctioned discourse and the imposition of narratives and storylines"*⁵⁹

To what extent is this power practically employed by the hydro hegemon (Egypt) towards the Eastern Nile basin countries? What are their implications on the recent developments, and the peace and security of the region?

The strategies and tactics employed by the hydro-hegemons to secure its status quo power interests are also part and parcel of the framework. Those tactics and strategies generally incorporate coercive, utilitarian, normative agreement and ideological hegemony. The interactions over the trans boundary hydro hegemony ranges from the shared control (cooperative control), consolidated control (competitive but stifled) and contested control (competitive and cut throat). Egypt's hydro hegemony is categorized by full of competition over the water share but this contestation has been stifled by the hydro hegemony in the region and that is the main justification behind Egypt's hegemony is to be dubbed as "consolidated control" type.⁶⁰

The other core issue that will be entertained with the concept of hydro hegemony is counter – hegemony principle that emphasis on the states' perceived as a non-hegemon takes counter strategies to mend their previous situation and to achieve the "shared control" of the resource for the whole basin states with the hydro-hegemon. The other paradigm of this principle lies on the resort of the non-hegemonic states directly to agenda framing. Such counter power includes "recourse to morality and international law, delay, de-securitization, issue linkage, economic

⁵⁸) Cascão and Zeitoun (2010), 32.

⁵⁹) Cascão and Zeitoun (2010), 32.

⁶⁰) Zeitoun and Warner (2006), 444; Cascão and Zeitoun (2010), 30-31.

development, alternative funding sources, negotiations and generation of positive-sum outcomes”⁶¹. Related to this tenet, chapter four addresses whether the construction of GERD tantamount to one of counter-hegemony strategies of Ethiopia against Egypt historical hydro hegemonic power in the Nile basin or not?

Obviously, Egypt has been the most powerful riparian among the Eastern Nile Basin nations in each of those dimensions of hydro hegemony discussed above for ages. However, the recent developments in the basin, particularly, the construction of the GERD is raising doubts as to what extent Egypt’s hydro hegemony keeps intact without disruption? Do those developments by the upstream countries affect the intensity of conflict or cooperation in the region and what are their implication on the general peace and security of the region?

Hence, the foundation of this framework of hydro hegemony overlies on the principle that powerful riparian states determine the management and control of the water resource in trans boundary rivers. It also tries to address the queries such as “who gets how much of the water resource, how and why?” which is mostly the reasons for conflict on water sharing stream countries. According to Zeitoun and Warner (2006), “there are dozens of destructive but largely silent water conflicts lie somewhere between the much feared but non-existent water wars and the much lauded examples of trans-boundary water cooperation”⁶². Within those extreme ranges of interactions of the riparian states, one could infer numbers of intensities of conflict that are silent water conflicts in lieu of violent conflicts among basin nations. By way of explanation, the hydro hegemony framework is a systematic way of conflict analysis by “examining the implications of varying intensities of conflict and the dynamics of hegemony at the river basin level”⁶³. This thesis will also systematically analyze water related conflict intensities in the Blue Nile Basin after the unilateral decision of Ethiopia to construct the GERD on the River and its implication on the peace and security for the region.

Shira Yoffe and Kelli Larson studied the Basin at Risk Database (BAR) by identifying historical indicators of the international freshwater conflict from which they evaluated the future potential risk of these basins. They also compiled the event data from news articles by using electronically searchable news database within a specified time frame.⁶⁴

⁶¹) Cascão and Zeitoun (2010), 32; Zeitoun and Warner (2006), 454.

⁶²) Zeitoun and Warner (2006), 437.

⁶³) Zeitoun and Warner (2006), 436.

⁶⁴) To study the details of the methodology and systematize and customize it to this particular study the author consulted the Oregon State University Basin at Risk Database (BAR) and number of documents such as :Introduction of the database by *Shira Yoffe*, Water event database Methodology by *Shira Yoffe and Kelli Larson*, Use of GIS for Analysis of Indicators of Conflict and Cooperation Over International Freshwater Resources by *Shira Yoffe and Greg Fiske*,

Likewise, in order to measure the intensity of interactions among these riparian nations following the construction of GERD and to research whether these political interactions are leading to conflict or cooperation, the study will interpret and analyze the data gathered from governmental based media source (<http://www.waltainfo.com> from Ethiopian government, and <http://www.sis.gov.eg/En/> from Egyptian government source and <http://gmsudan.sd/en/> from Sudan government source), two international medias (BBC-<http://www.bbc.com> and Aljazeera <http://www.aljazeera.com>) and one private media (Sudan Tribune <http://www.sudantribune.com>). Private, governmental and international based medias are also employed so as to ascertain the diversification of media sources. The major interaction events of those media sources between the year when Ethiopia declared the construction of the GERD (2011) until December 31, 2015, will be considered and registered. The contents of this data are studied thoroughly so as to evaluate and quantify them under the Yoffe's measurements. To articulate the study of the possible event interactions the study categorized the states as bilateral (between Ethiopia and Egypt, Egypt and Sudan, and Sudan and Ethiopia) and multilateral (interaction among those three nations: Ethiopia, Egypt and Sudan). The source of the data will also be mentioned and the events will be designated with numbers in line with the conflict intensity scale developed by Shira Yoffe and Kelli Larson in the BAR analysis. The scale ranges from +7 denoting the most cooperative event, 0 neutral event and to -7 which represents the most conflictive scenario (for the details see Table-1 below).

Table-1) Water Conflict/Cooperation Intensity Scale

	Scale	Event Description
Cooperation	7	Voluntary Unification into one nation
	6	Major Strategic Alliance (International Freshwater Treaty)
	5	Military, Economic or Strategic Support
	4	Non-military Economic, Technological or Industrial Agreement
	3	Cultural or Scientific Support (non-strategic)
	2	Official Verbal Support of goals, values, or regime
	1	Minor Official Exchanges, Talks or Policy Expressions
	0	Neutral or non-significant acts for the inter-nation situation
Conflict	-1	Mild Verbal Expressions displaying discord in interaction
	-2	Strong Verbal Expressions displaying hostility in interaction
	-3	Diplomatic-Economic Hostile Actions
	-4	Political-Military Hostile Actions
	-5	Small Scale Military Acts
	-6	Extensive War Acts causing deaths, dislocation or high strategic costs
	-7	Formal Declaration of War

Conflict and Cooperation Over International Freshwater Resources: Indicators and Findings of the Basins at Risk Project, Shira Yoffe, Aaron T. Wolf, and Mark Giordano. Additionally, appendices from the same database: Field Descriptions for Event Database, Changes to TFDD Basin Coverage, GIS Data Calculated By BAR, Events By Basin, Events by Dyad, Approach to Initial Indicator Selection, List of GIS and Other Data Layers, Precipitation Data Methodology, Derivation of Climate Zone By Basin, Codes and Regional Groupings, Active Nationalist Movements, Statistical Graphs, Data Tables Identifying Basins At Risk accessible at http://www.transboundarywaters.orst.edu/research/basins_at_risk/index.html, on March 29, 2016.

Source: Yoffe *et al.* (2003).

This water event intensity scale is so detail that it demonstrates each of the different conflict and cooperation levels. That also makes easier to evaluate the level of water-based interaction of the Eastern Nile states. Consider for example, the difference in the effect on relations provoked by a “formal declaration of war” with those provoked by a “mild verbal expression”. Secondly, the scale demonstrates that even the less-intense conflicts, are still forms of conflict. In other words, the absence of war does not mean the absence of conflict. This is relevant for addressing the research question of this study as one can witness until now there is no manifest war fought among the aforementioned Eastern Nile Basin countries upon the construction of GERD but there are divergences and agreements. In clarifying the tension or cooperation levels of these nations, the event intensity scale measurement is so detail and vital in addressing detailed water political and diplomatic relations in the basin.

Conflict will be interpreted in a vast range of degrees. For example, the five ranges of NATO (conflict-development scale of 1999 identified as durable peace, stable peace, unstable peace, crisis and then war. These ranges are also examined cumulatively with the Yoffe et al’s water event intensity scale (for details see on table 2 below).

Table 2-Conflict Intensity Frame

Water Event Intensity Scale (Yoffe 2001)	Stages of Conflict Development (NATO 1999)	Type of Interaction	Form of Conflict
7	DURABLE PEACE	No Relations	NO CONFLICT
6		↕	
5		Warm Relations	
4	STABLE PEACE	↕	COLD CONFLICT
3		Cold Relations	
2		↕	
1	UNSTABLE PEACE	Cold War	
0		↕	
-1		Military Occupation	VIOLENT CONFLICT
-2	CRISIS	↕	
-3		Low-Intensity War	
-4		↕	
-5	WAR	High-Intensity War	
-6		↕	
-7			

Source: Zeitoun and Warner (2006)

Accordingly, designating the interactions in terms of numbers of scales from +7 down to -7 to measure the level of intensities of conflict will help one to define the current relations among those nations that will also serve as a component in evaluating the hydro hegemony contestation level and asses the peace and security situation in the region. Thus, the conflict intensity frame indicates that

the discrepancies in intensity of different conflicts and the trending of the degree that same conflict has gone through over time.

These methodologies are combined to provide a powerful and insightful analysis on the possible drivers of conflict or cooperation in the construction of the GERD in the Eastern Nile basin. The theorization of hydro hegemony and counter hegemony principles and the tactics of the Eastern Nile nations to protect their water share rights dealt cumulatively with the analysis and quantification of major event interactions so as to reach the final conclusive remark (whether the unilateral decision of Ethiopia to construct the GERD on the Nile river, is becoming the means to wider peace or triggering conflict among or between Eastern Nile nations?)

Moreover, this research accommodates horizons of sources including speeches of political leaders, press conferences provided by the highest authoritative figures, parliament addresses, interviews, political debates, pacts and agreements, international water organizations' reports, researches in the area, governmental institution based political views of these countries, international and local media reports, and international impact assessment reports about the GERD. The thesis attempted to specify and limit these sources by relying on issues related to the thesis and directing on the influential political leaders in those nations.

Finally, the study will be augmented by the prior elaborations on international trans boundary laws (chapter two) as they are part of so-called soft (ideational and bargaining) power component in hydro hegemony, and the general historical, legal and geopolitical discussions at (chapter three) that in aggregate demystify hydraulic power relations in the region. Entertaining these issues equips the reader to understand the governing international legal precepts and the general hydro hegemony circumstances in the region so as to prepare for the detailed elaboration and address of the main research questions in the last and fourth chapter. At the end, the material, geographical, bargaining and ideational powers of those nations will be discussed in detail to elucidate power interactions among themselves and what kind of effect it might have on the peace and security of the region after their major interactions are gauged with Yoffe's intensity scale. This study entertains its final analysis, conclusive remarks and recommendation by taking all theories discussed and data collected above in *toto*.

CHAPTER TWO

2) INTERNATIONAL WATER LAW AND FRAMEWORK OF HYDRO-HEGEMONEY

2-1) General Discussion on International Law

Presently, the advancement of technology and the growth of population are paving the way for an incremental and susceptible utilization of natural resources such as fresh water, clean air, fisheries, hydrocarbon and mineral deposits, forests nature reserves, and imperiling species of flora and fauna en masse. The entire ecological system is under strain and scarcity of these natural resources is becoming an inevitable phenomenon. As a result, the competitions for accessing these resources are becoming more frequent and stiff. In addition, their control and management have been subjected to certain domestic political borders and delineations. However, the repercussions of the mismanagement or defective utilization of these natural resources is not confined to a particular state instead it is pervasive and sometimes outreaches to the whole globe. For instance, the pollution of a trans boundary river in one state will have an impact on access to freshwater to other neighboring nations that the river crosses. The deforestation of forest in a certain locality will have an impact on global warming.⁶⁵

According to the 2002 UNEP report, if an alteration is not made on the current utilization and development arrangements of water resources, more than half of the world's population will suffer as the result of water scarcity. This situation is more acute in the case of developing nations including of the Eastern Nile Basin countries.⁶⁶ Moreover, many sovereign nations consider water resource development as a pertinent vehicle to alleviate poverty and stimulate their economic growth. These nations wish to obtain economic benefits, such as flood control, irrigation and hydropower development activities.⁶⁷

Hence, the inevitability of the scarcity threat of water resource on the one hand, the major problem in the management of the international rivers by sharing sovereign states on the other, makes the trans boundary water conflicts a more ubiquitous phenomenon. Water conflicts both in developed

⁶⁵) Benvenisti (2002), 15.

⁶⁶) United Nations Environment Program (UNEP), "The greening of Water Law: Managing Freshwater Resources for People and the Environment," (2002), 1.

⁶⁷) Benvenisti (2002), 15.

and developing nations are becoming the cause for political, economic, environmental and social insecurities.⁶⁸ The Eastern Nile Basin region is not an exception to this rule.

At the international level the United Nations is in charge of the maintenance of peace and security as stipulated under Article (1) paragraph (1) of the UN Charter. In order to achieve this objective, the UN and its bodies devised a customary international water law, the two best known international legal instruments dealing with shared water courses: the United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses of 1997 and Helsinki Rules on the Uses of the Waters of International Rivers and Comments of 1966.⁶⁹

This section of the study is devoted to examining the relevance and the role of international water law principles in governing the peace and security of sovereign states that share trans boundary water resources. The inter-link between the principles of international water law and hydro-hegemony will be explored. The main justifications for encompassing these international water law discussions in this part of the study are manifold. First, most of these principles are employed widely in this study providing the reader with the clues and a better understanding about these international water law-governing principles. Second, when the thesis addresses its main research question in the fourth chapter, these principles are used by the contesting states (particularly, Ethiopia and Egypt) to assert their water share rights. Lastly, but not least demystification of the correlations between international water laws and the frame work of hydro-hegemony will enable the reader to brainstorm to what extent international water law is employed for achieving peace and security among trans boundary nations by supporting its soft laws and in augmenting the bargaining power of the weaker trans boundary states' claims. In other words, to what extent the international water law principles are clear and defined to apply in trans boundary water resource disputes among nations and preventing the feasible disputes among states that share international rivers and manage hydro-hegemony scenarios.

Before proceeding with international water law, it is mandatory to explain the main principles and sources of the public international law to elaborate how international water law works in the global domain. According to Shaw, general international law could be defined as "a system of principles and rules of general application governing the conduct and relations of states"⁷⁰. International law governs states' and international organizations' actions or omissions of their date-to-date

⁶⁸)Muhammad Mizanur Rahaman, "Principles of international water law: creating effective transboundary water resources management," *International Journal of Sustainable Society* 1, no. 3 (2009), 208.

⁶⁹) Rahaman (2009), 208.

⁷⁰) Malcolm N. Shaw, *International law (5thed.)*, (Cambridge: Cambridge University Press, 2003), 2.

interactions.⁷¹ In addition, the maintenance of peace and security by accommodating the interests of the contemporary international life has been the primary objective of international law. Its scope also ranges from the “the regulation of space expeditions to the question of the division of the ocean floor, and from the protection of human rights to the management of international financial system”⁷². From this we can infer that international law encompasses the regulation of trans boundary rivers water use state practices under its auspices.

The difference between international law and domestic law lies on their legal subjects: the subjects of international law are the states while in the case of domestic laws- it is individuals. Additionally, their discrepancy extends to their governing bodies of which the laws are enacted, entertained and executed. There is no single body responsible for enacting, interpreting and executing the laws in the case of international law while domestic laws have their own well organized legislature, judiciary and the executive structures in the sovereign states. Hence, it is arduous to identify the laws in the case of international law when there is clash of competing sovereign states’ interests and this aggravates the confusion. However, it is fully ascertainable that the existence of international law and its “sources”.⁷³

The UNs’ quasi-judicial body the Permanent Court of International Justice (PCIJ) was established in 1921 at The Hague and succeeded by the International Court of Justice (ICJ) in 1946. As an authoritative statement, Article 38(1) of the Statute of this UN organ stipulates the source of international law the court could apply in entertaining cases as:

*“(a) International conventions, whether general or particular, establishing rules expressly recognized by the contesting states; (b) international custom, as evidence of a general practice accepted as law; (c) the general principles of law recognized by civilized nations; (d) subject to the provisions of Article 59, judicial decisions and the teachings of the most highly qualified publicists of the various nations, as subsidiary means for the determination of rules of law.”*⁷⁴

Thus, the source of international law incorporates the rules that have long been developed and emerged through the interstate relations and practices. Until recently, the rules of customary –or unwritten –law have been the widely used source of international law. This law emerged from the practices of states particularly when there is an absence of formal and written agreements amongst

⁷¹) Shaw (2003), 43.

⁷²) Shaw (2003), 43.

⁷³) Shaw (2003), 66.

⁷⁴) Peter Malanczuk, *Akehurst's modern introduction to international law* (Routledge, 2002), 35.

themselves. These types of state practices become a binding customary law; there must be a “demonstrable general and widespread practice that shows that the states consider this rule governing their activities in particular”⁷⁵. As will be elaborated in the upcoming sections, the principle of equitable and reasonable utilization of water resources as international water law was initially developed as rules of customary international law. International customary laws are characterized by imprecision and mostly open to conflicting interpretations. Owing to this absurdity, international customary laws are inadequate to address the increasing advanced and multifaceted cases that are widespread in today’s state interactions.⁷⁶

Over the last half-century, the codification and the development of international customary rules have become a priori actions taken by the states and the international community in general. Today, state rights and obligations are more defined by international treaties than international customary laws. International treaty incorporates also international convention, agreement, protocol, charter, accord and statute, binding state parties.⁷⁷ Relatively speaking, international treaties have many merits over customary rules in terms of clarity, precision, accessibility and their ability to deal with cases of highly technical character. As an international rule, a state is bound to a treaty that expressed its consent. Depending on the number of parties involved treaties may be bilateral (between two state parties), multilateral (more than two state parties) with limited participation (open for signature by a restricted number of countries), and universal (open for participation by all states). The other point worth mentioning here is the international law tenet called *pacta sunt servanda*, which is part of both international customary law and the UNs Charter and this principle requires every nation to be abide by the agreements they make. Its moral origin is sprung from the precept that international agreements are binding and must be performed in good faith. All disputes concerning the implementation, interpretation, or breach of an agreement must be resolved peacefully through a range of dispute settlement mechanisms available to states, both diplomatic (negotiation, mediation, fact-finding and inquiry, conciliation, etc.) and legal (adjudication and arbitration).⁷⁸

Moreover, where there is a legal void, customary rules and treaties are insufficient, general principles of law could be employed as another source of international law to determine the respective rights and obligations of states. The origin of general principles of law is the national

⁷⁵) Sergei Vinogradov, Patricia Wouters, and Patricia Jones, *Transforming Potential Conflict into Cooperation Potential: the role of international water law*, (UNESCO (2003)), 9.

⁷⁶) Vinogradov et al. (2003), 10.

⁷⁷) Ian Brownlie, *Public international law*, (Oxford: Oxford University press, 2003), 11-13; Malanczuk (2002), 36-38.

⁷⁸) Vinogradov et al. (2003), 11.

practice of the majority of legal systems across the globe and they encompass rules that are accepted by all, such as the prohibition of slavery and the principle of good faith. The decision of international courts and arbitral tribunals, and legal doctrines (the teachings of the “most highly qualified publicists” of various nations) are also used to determine the applicable rules of law and they are recognized as “subsidiary” sources of international law.⁷⁹

Under international law, in order to adjudge a state is responsible for breaching a law, two yardsticks should be cumulatively met. There must be an action or omission attributable to the state and simultaneously that particular conduct must be an identified violation of one of recognizable international laws reiterated above.

Finally, International treaties also play a crucial role in regulating state controversies and interactions sharing trans boundary rivers under its other branch of legal system as will be discussed in detail in the upcoming sections.

2-2) International Water Law

International water law (that is also known as-international watercourse law or international law of water resource) is a branch of public international law that deals with the non-navigational uses of international watercourse. In other words, the term refers to the legal rules that regulate the use of water resources shared by two or more nations.⁸⁰ The prime objective of international water law is:

*“... to determine a state’s entitlement to the benefits of the watercourse (substantive rules) and to establish certain requirements for states’ behavior while developing the resource (procedural rules)”.*⁸¹

As an integral part of public international law, the basic tenets and concepts of international law such as the sovereign equality of states, non-interference in matters of exclusive national jurisdiction, responsibility for the breach of state’s international obligations, and peaceful settlement of international disputes, equally operates and extends to international waters law as well.⁸² The fundamental principles amenable to international water law are: “equitable and reasonable utilization” of water resources located in the territory of the state, and a correlative duty to ensure

⁷⁹) Malanczuk (2002), 50-53.

⁸⁰) Julio Barberis, “International Rivers,” in *Encyclopedia of Public International Law* ed. R.Bernhardt (Amsterdam: North-Holland, 1986), 212.); Richard Paisley, “Adversaries into Partnerships: International Water Law and the Equitable Sharing of Downstream Benefits,” *Melbourne Journal of International Law* 3 (2002), 281.

⁸¹) Vinogradov et al. (2003), 12.

⁸²) Vinogradov et al. (2003), 12.

similar rights are enjoyed by co-basin states also known as the principle of causing “no harm” to other riparians.⁸³

Similar to public international law, customary law is the primary source of international water law. The two basic pillar precepts of customary international water law that grants rights and impose duties on trans boundary states are: the right to use communal water resource in an “equitable and reasonable” manner, and to avoid causing significant harm to other riparian states. Since 1911 an attempt to incorporate these principles by the Institute of International Law (IDI) (an authoritative professional organization of international lawyers), could not have been realized. However, the codification of these keystone principles were incorporated under Article IV of the Helsinki Rules on the Uses of the Waters of International River of 1966 by the International Law Association (ILA), which is a professional non-governmental organization created in 1873 for the purpose of “study, elucidation and advancement of international law.”⁸⁴

Treaties made between trans boundary states are also the primary source of international water law and they play a pivotal role in creating cooperation and peaceful co-existence amongst the sharing states. Hence, more than 3,600 international, multilateral and bilateral accords have been made underlining the use of water resources. The first general treaty dealing with international watercourses was the 1923 Geneva Convention that incorporates ideas in connection with the Development of Hydraulic Power affecting more than one state. The treaty failed, however, since only ten states without common borders ratified the agreement.⁸⁵

Currently, there are a large number of multilateral - regional and basin-wide – agreements, the most significant being the 1997 UN Convention on the Law of the Non-Navigational Uses of International Watercourses (1997 UN IWC Convention). There are also a multitude of bilateral agreements in the allocation of the shared water resources.⁸⁶ The 1959 agreement concluded between Egypt and Sudan to share the Nile water resource could be mentioned as an instance here. This thesis will address the details of these types of treaties made on the Nile River under its third chapter.

International judicial decisions made by the international Court of Justice (ICJ) took another platform in the interpretation and augmentation of the international customary water laws. The ICJ

⁸³) Vinogradov et al. (2003), 12.

⁸⁴) Vinogradov et al. (2003), 12.

⁸⁵) Vinogradov et al. (2003), 13.

⁸⁶) Joseph W. Dellapenna, "Rivers as Legal Structures: The Examples of the Jordan and the Nile," *Natural Resources Journal* 36 (1996), 231.

entertained a number of cases arising from trans boundary water resource disputes and rendered decisions. In the case of river Meuse, the Netherlands and Belgium submitted their dispute to the Permanent Court of International Justice (PCIJ) in 1930s over the diversion of the flow of water from their trans boundary river (Meuse). In this case, the court mainly pondered on providing the interpretation of their preexisted bilateral water share accord and diversion agreement. Most water scholars referred to the limited roles of this decision in the evolution of water laws but underlined the concurrence of the two parties to take their cases to the Court. By itself this was a significant step in an attempt to resolve water related disputes by international tribunals.⁸⁷ In connection with this study, this case provides a clue that there are still international settlement mechanisms in case of disputes on trans boundary water resource share claims arising between Nile basin states.

2-3) Fundamental Principles of International Water Law

In this section, the study expounds the competing principles of international water law before and after the development of the equitable utilization of water resources principles in 1960s. Sovereign states including the Eastern Nile Basin countries have been citing these principles to validate and assert their utilization of the shared water resource of the Nile.

First, the Harmon Doctrine or the principle of absolute territorial sovereignty was named after the Attorney General Judson Harmon of the United States of America who reflected this idea on the use of shared water resources on the Rio Grande River after a dispute arose between the United States of America and Mexico. According to this precept, “a state has the right to use the fluvial waters which lie within its territory without any limitation whatsoever, regardless of the effects of this utilization on other states”.⁸⁸ Hence, the repercussions due to the use of the river water by the upstream state in the lower riparian countries, is a matter often ignored or not taken under consideration by the upstream countries. Consequently, the amount of water the downstream countries could access from the trans boundary river is mostly to be allotted by the upstream countries upon their water needs. This doctrine has often been adhered by the upper riparian states as it guarantees full sovereignty over their territory and to utilize its resources as they think fit to their own interest regardless of the consequences of their acts on other co-riparians. In the Indus river dispute between India and Pakistan, the upstream country India adopted this principle against downstream country-Pakistan.⁸⁹

⁸⁷) Vinogradov et al. (2003), 13.

⁸⁸) Nurit Kliot, *Water resources and conflict in the Middle East* (New York: Routledge, 2005), 4; Julio Barberis, “International Rivers,” in *Encyclopedia of Public International Law* ed. R.Bernhardt (Amsterdam: North-Holland, 1986), 213.

⁸⁹) Kliot (2005), 4; Barberis (1986), 213.

Moreover, the upper riparian countries usually try to employ this principle in order to affirm and practice their hydropower advantageous positions particularly to justify their tactics such as “diversion, overuse, contamination and flow delay of the shared water resource”⁹⁰. This principle was rampant particularly before the emergence of other international water law principles and states were entitled to use their resources without any kind of legal restrictions. However, with the advent of international water law this principle began to be criticized and discredited by international tribunals and writings of experts in water field as it contradicts with one of the cornerstone of international law tenet (I.e., proscription of riparian states from causing harm to other states). As a result, states including the author of this principle-the USA, banned this theory.⁹¹

Second, the principle of “absolute territorial integrity or the principle of prior appropriation” that bases its assertion on the waters of the international rivers must be allowed to flow downstream substantially unchanged in quality and undiminished in quantity. In other words, no state may utilize the waters of a trans boundary river in a way that might cause any detrimental effect on other co-riparian territory. In other words, the lower riparian of an international river has the right to a full flow of water with natural quality and any interference with the natural flow by the upstream state require the consent of the downstream riparian.⁹² The principle is more interlinked to the prior appropriation of water resources according to which the pre-existing water rights of the lower riparian countries entitlements should be protected and fulfilled prior to accommodating new water share interests of other riparians. Downstream countries favor this dogma as it grants them a veto power over any major utilization of water by upstream states. Currently, there are instances where the Egyptian government attempts to justify to secure their preexisted water share on the Blue Nile by advocating this doctrine and reciting the 1925 and 1959 agreements against the Nile Commission and Ethiopia’s GERD construction (as this paper will entertain it in detail on its upcoming chapters). In the 1940s and 1950s in relation to the Indus River dispute, Pakistan invoked the principle of prior appropriation against India to assert her water share claim while India employed the Hermon doctrine.⁹³

According to Salaman, this principle imposes a duty on the upstream countries and does not tolerate slight uses of the shared water by the upstream countries. He further noted that this principle is the exact opposite of the Hermon Doctrine as it benefits the downstream countries solely. Owing to

⁹⁰) Klot (2005), 4.

⁹¹) Klot (2005), 4.

⁹²) Klot (2005), 4; Barberis (1986), 213.

⁹³) Klot (2005), 4.

those reasons, this principle has also been criticized and failed to become part of customary international water law as it has a limited state practice and jurisprudence adherences.⁹⁴

Third, intermediate theories developed as a result of the polar position of the above tenets. In other words, the Harmon Doctrine and the theory of absolute territorial integrity represent two extreme positions of water share principles that incline completely to the benefits of either the downstream or upstream states. It was the irrationality of these doctrines that directed the development of a more accommodative and mitigating water principles called the theory of Condominium or common jurisdiction and the limited sovereignty principles or theory of sovereign equality and territorial integrity-together called intermediate theories.⁹⁵

Theory of condominium or common jurisdiction that presupposes the recognition of International River as community property of all riparian states under international water law. The main source of this principle is considering the entire river basin as one economic unit and “rights over the waters of the entire river are vested in the collective body of the riparian states, or divided among them either by agreement or on the basis of proportionality”⁹⁶. Its main objective is limiting a state’s freedom of action over the utilization of international rivers by requiring a state to get a prior consent from other stream countries for all types of projects involving the utilization of the trans boundary river by taking the rights of the river as a collective body.⁹⁷ Salman argues this principle did not gain a vast backing from the state practices as it compels the riparian states to enter into an agreement by compromising their sovereignty and nationalism that in turn undermines their competing demands of their water resource interests.⁹⁸ As a result, the principle of limited territorial sovereignty that is based on the equality of all riparian countries with regard to using the shared water resource survives.

The “theory of sovereign equality and territorial integrity” pursuant to this theory,

*“.... every state is free to use shared rivers flowing on its territory as long as such utilization does not prejudice the rights and interests of the co-riparians. In this case, sovereignty over shared water is relative and qualified. The co-riparians have reciprocal rights and duties in the utilization of the waters of their international watercourse and each is entitled to an equitable share of its benefits.”*⁹⁹

⁹⁴) Salman MA. Salman, "The Helsinki Rules, the UN Watercourses Convention and the Berlin Rules: perspectives on international water law," *Water Resources Development* 23, no. 4 (2007), 626.

⁹⁵) Rahaman (2009), 208; Salman (2007), 627.

⁹⁶) Kliot (2005), 4.

⁹⁷) Kliot (2005), 4.

⁹⁸) Salman (2007), 627.

⁹⁹) Rahaman (2009), 210.

That is to say, this principle entitles every riparian country equal rights to use the international waters. This right to use is not an absolute right. It also bears a duty on every riparian state to confirm their utilization is not causing harm to other co-riparian states.¹⁰⁰ The merits of this theory is that it encompasses the rights and interests of both the upstream and downstream countries in a way by limiting the use of water resource by upstream countries equitably and reasonably without hampering the equitable access rights of the downstream countries. Principles of equitable and reasonable utilization and obligation not to cause significant harm are part of the theory of limited territorial sovereignty. This theory has gained worldwide acceptance and formed the basis of modern international water law.¹⁰¹

Primarily, the principle of “equitable and reasonable utilization” underlies the “reasonable and equitable” use of trans boundary rivers by the states in their territory. According to scholars in the field, the permits of the use of water under this principle is to limit utilization so as it does not cause harm to other co-riparian states. This tenet has a wider support from the international water law legal system as it could be easily inferred from the water treaties both bilateral and multi-lateral, judicial decisions, academics, and other international bodies.¹⁰² Though the Helsinki Rules are not formal legal binding documents per se, they serve to manifest as guidelines for the state practice of water utilization worldwide. Article V states the criteria to be taken into consideration to determine the states’ utilization of an international river is reasonable and equitable as:

*“ (a) the geography of the basin, including in particular, the extent of the drainage area in the territory of each basin state; (b) the hydrology of the basin, including in particular the contribution of water by each basin state; (c) the climate affecting the basin; (d) the past utilization of the waters of the basin, including in particular, existing utilization; (e) the economic and social needs of each basin state; (f) the population dependent on the waters of the basin in each basin state; (g) the comparative costs of alternative means of satisfying the economic and social needs of each basin state; (h) the availability of other resources; (i) the avoidance of unnecessary waste in the utilization of waters of the basin; (j) the practicability of compensation to one or more of the co-basin states as a means of adjusting conflicts among uses; and (k) the degree to which the needs of a basin state may be satisfied, without causing substantial injury to a co-basin state”*¹⁰³

¹⁰⁰) Salman (2007), 628.

¹⁰¹) Salman (2007), 628.

¹⁰²) Klot (2005), 5.

¹⁰³) International Law Association, (Committee on the Uses of the Waters of International Rivers), *Helsinki Rules on the uses of the waters of international rivers* (International Law Association), 1967.

Likewise, the UNs Watercourse Convention under its Article 6 Sub-Article (1) prescribes the equal and reasonable utilization of international rivers and Article 5 of this Convention also lists circumstances that should be taken into account to evaluate whether the utilization of the water resource by a certain state is equitable and reasonable or not, in the following manner:

*(a) geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character; (b) the social and economic needs of the watercourse states concerned; (c) the population dependent on the watercourse in the watercourse state; (d) the effects of the use or uses of the watercourse in one watercourse state on other watercourse states; (e) existing and potential uses of the watercourse; (f) conservation, protection, development and economy of the water resources of the watercourse and the cost of measures taken to that effect; and (g) the availability of alternatives, of comparable value, to a particular planned or existing use.*¹⁰⁴

The factors mentioned under the Helsinki Rule and the UNs' Watercourse Convention provisions are alike in determining whether state water utilization is reasonable and equitable or not. Weighing of these factors on the economic and social needs of co-riparian states is identified as reasonable and equitable by granting the maximum benefits for each riparian country. This doesn't mean that the damages a state could incur or prevent could completely be curbed by the applications of these principles but it will play a crucial role in diminishing it.¹⁰⁵

The principle of "duty not to cause significant harm" is another basic international water law principle that imposes an obligation on states not to cause significant harm. This principle is not treated separately under the Helsinki Rule but the duty is encompassed as part of the criterion in the equitable and reasonable utilization factors that specify the prohibition of the injury that may result from the use of the river by one riparian as one of the factors for determining equitable utilization.

106

Under the UNs Watercourse Convention, this principle commends states to take all appropriate measures to inhibit a significant harm to other co-riparian states. Under Article 7 of the convention, states obligated not to cause significant harm to others. The new language of Article 7 expounds the state that causes significant harm to take measures to eliminate or mitigate such harm "having due

¹⁰⁴) United Nations General Assembly, *Convention in the Law of the Non-Navigational Uses of International Watercourses*, General Assembly of United Nations, 1997.

¹⁰⁵) Kliot (2005), 7.

¹⁰⁶) Salman (2007), 629.

regard to Articles 5 and 6”.¹⁰⁷ From the perspective of the state practices, lower riparians are more inclined to favor the no harm rule, as it protects existing uses against impacts resulting from activities undertaken by upstream states. Conversely, upper riparian states adhere to the equitable and reasonable utilization principle, because it grants more scope for states to utilize their share of the watercourse for activities that may impact on downstream states.¹⁰⁸

However, in both the UN Convention and the Helsinki rules, the duty not to cause harm principle is taken as ancillary to the precept of equitable and reasonable utilization. This conclusive argument derived from Articles of 5, 6 and 7 of the Convention. Article 6 enumerates a number of factors for determining reasonable and equitable utilization. Those factors include: (i) “the effects of the use or uses of the watercourse in one watercourse State on other watercourse States”, and (ii) “existing and potential uses of the watercourse”. Those same factors will also need to be used, with other factors, to determine whether significant harm is caused to another riparian.

Article 7(1) obliges states, when utilizing an international watercourse in their territory, to take all appropriate measures to prevent causing significant harm to other states. Nevertheless, when significant harm is caused to another watercourse state, Article 7(2) of the requires the state causing the harm to “take all appropriate measures, having due regard to Articles 5 and 6, in consultation with the affected State, to eliminate or mitigate such harm, and where appropriate, to discuss the question of compensation”.¹⁰⁹

The other core point worth mentioning in international water share law is the concept of the duty of cooperation. This principle originates from the community of interest principles of riparian countries. The meaning of this precept and its implementation at the international sphere is open to controversy. It plays an important role in an obligation to share information, consultation and negotiation among the riparians on water project developments on international rivers. This promotes the cooperation of the riparian states in implementing the long-term, systematic planning of the utilization of the shared water resource that in turn paves the way to protect the ecology of the river and realize the sustainable use of the international watercourse.

2-4) International Water Laws and Framework of Hydro-hegemony

Public international law regulates the utilization of freshwater by imposing some duties on a state towards its riparian neighbors through ‘soft laws’, non-binding and without the need of executive

¹⁰⁷) United Nations General Assembly (1997).

¹⁰⁸) United Nations General Assembly (1997).

¹⁰⁹) Salman (2007), 640.

organs in case of breach. Because contesting states interests and the scarcity of the water resource, it has been arduous to draft an internationally recognized binding convention governing international waters. Though that is the case till recently, the international community could manage in making core international customary water laws as we have elaborated it above. Unlike the binding treaties of international law to a certain states that signed the agreements, the customary international water laws applicability is wider and includes all states.

The bedrock tenets of international water law hold the right to use equitable and reasonable utilization, the obligation not to cause harm on the other co-riparian and the procedural duties like the obligation to cooperate with other states in providing the appropriate information and notification about project developments on the shared water resource. These fundamental principles are included in many water related international treaties, documents and agreements including the Helsinki Rules of water resource and the UNs Watercourse Convention.

Development of the concept of ‘counter-hegemony’ to describe the work of non-hegemonic states in their resistance against hegemonic control of water resources in international rivers is so crucial. Various studies suggest that soft forms of power are particularly, useful tool for non-hegemons. International law as a soft law will grant soft power for non-hegemons and this is the main indicator of the inter-link between international law and questions of hydro-hegemony.¹¹⁰

Cascão and Zeitoun (2010) divided the hydro-hegemony powers into four categories as stipulated in the previous chapter. First, geographic or location power. Second, the most discernible form of power called ‘hard’ power that is mainly related to the material power of economic, technological and military capacity of the trans boundary states. Third, bargaining power, which concerns the ability to control the “rules of the game”, influencing the agenda, determining what is and is not on the negotiation table. State appeals to the international law in general are mostly categorized as this type of power dimensions. Legal principles governing trans boundary watercourse access are a source of bargaining power for states in the sense that they provide a body of rules reflecting broad consensus that states can appeal in relation to their conduct to the international legal system. Fourth, the ideational power is the ability “to create, uphold and destroy narratives, perceptions and knowledge”. As a repository and creator of ideas, it is a device and actor in ideational power. As an author of international ‘rules’, it is a tool and actor in bargaining power as well. Thus, international

¹¹⁰) Cascão and Zeitoun (2010), 34.

law exerts notable soft power – and thus influences hydro-hegemonic relations – even when it does not carry with it a strong global police force with hard power.¹¹¹

The Framework of Hydro-hegemony is developing as an increasingly cogent argument for describing, analyzing and demonstrating state practice over trans boundary water issues, which determines to a significant degree by the use of power. The international legal system at present appears to be ‘blind’ to such causes of skewed water sharing arrangements and focuses instead upon realizing a remedy to its effects.¹¹² International law is effectively weakened when one state dominates another and particularly when treaty law is seen as the only legal means to achieve reasonable and equitable utilization of a shared water resource. The development and practice of treaty provisions for water sharing are certainly modified by the hegemonic behavior of a powerful state. It appears that, for the ‘carrot’ of international law to be attractive, the ‘stick’ of hegemony has first to be removed. Hegemony clearly diminishes the effectiveness of international legal principles.¹¹³

To conclude, the framework of hydro-hegemony may have a fairly specific field of applicability with respect to international watercourse law. This concept arises from a simple ‘three case’ model in which properly consenting states will ‘self-execute’ treaty provisions and achieve reasonable and equitable utilization of water, whereas unreasonable states will resort to conflict to capture a share of water. Between those two extremes lies a ‘lacuna’ for the law, yet much of the world’s inequitable sharing of water may be practiced in that grey area. To date, the law on shared waters has been largely defined by these ‘extreme situations’. By describing and analyzing state practice in this grey area, it may be possible to identify new and more effective regimes of legal responsibility and remedy, and address the most likely scenarios where inequitable water sharing is found. This approach will also be employed to address the disputes and cooperation of the Eastern Nile Basin nations. The GERD is the result of Ethiopia’s continued contestation of Egypt’s hydro hegemony through the international legal domain (claiming equitable share of the Nile River), which is the strongest one to confront the status quo of Egypt’s hydro hegemony as per to Cascão (2009).¹¹⁴ In this case, Ethiopia is insisting on her position that the dam will not cause any significant harm on

¹¹¹) Rebecca L. Farnum, Stephanie Hawkins, and Mia Tamarin, “Transboundary Water Interaction IV: The Role of International Law in Hydro-Hegemonic Arrangements”, Concept Paper prepared for HH8 24-25 of October 2015, <https://lwrq.files.wordpress.com/2015/05/hh8-concept-paper-transboundary-water-interactions-iv-farnum-hawkins-tamarin-working-draft-8-october-2015.pdf> accessed on April 12, 2016.

¹¹²) Farnum et al. (2016).

¹¹³) Farnum et al. (2016).

¹¹⁴) Cascão (2009), 256.

the downstream countries by citing her right to equitable and reasonable utilization of the Nile while Egypt is attempting to secure her historical treaty based right of the water share on the Nile. This thesis will explain it under its fourth chapter the palatability of water laws in strengthening their ideational and bargaining powers of these states by averring on the international customary laws.

CHAPTER THREE

3) HYDRO-POWER RELATIONS IN THE EASTERN NILE: HISTORICAL, POLITICAL AND LEGAL PERSPECTIVES

3-1) General Historical and Political Discussion on the Nile Basin

One of the crucial techniques to understand the current hydro hegemonic nature of the basin is discussing on the previous periods of historical, legal and political relations among those nations. The Nile Basin system that covers the Northeastern and part of Central Africa incorporates not only countries that have diversified hydrology, climate, and geography, but their heterogeneity also extends to political, historical and economic backgrounds. Scholars attempt to interlink these differentiations with the extreme asymmetrical power relations of these nations especially in the utilization of the river Nile water resource. This chapter will go through the historical, political, legal and future utilization prospects of the Nile to clarify the asymmetrical power positions persisted in the region. Additionally, it serves as a stepping-stone for the detailed discussions of the hydro-hegemony and counter-hydro hegemony contestations among the Eastern Nile Basin countries regarding the GERD.¹¹⁵

In the Middle East and North Africa, the management of water has been the core issue for the development of the human society over the ages. This is affirmed by the legal documents that govern the ancient Mesopotamia-called the Code of Ur-Nammu (ca. 2100 BCE) and the Code of Hammurabi (ca. 1750 BCE) and imposed a duty on the respective society to utilize and preserve the common water works and resources.¹¹⁶ For centuries, the people of Egypt and Sudan also have been dependent on the Nile as their sole water resource. Additionally, none of these courtiers in the region catch up with Egypt in terms of the highly developed irrigation system and relatively proper utilization of water resource of the river. The Nile was even the crucial water source for Egypt during the Arabs, Turkish Mamelukes, and Ottoman Turks conquests of 641,1250 and 1517, respectively.¹¹⁷ These conquerors contributed a lot to improve the irrigation system in Egypt,

*“...it was the Arabs that made improvements in the irrigation practices with new types of water-lifting devices, building embankments and canals, and monitoring the Nile flow with about 20 Nilometers (devices that allowed them to measure river levels, compare flow over years and predict the oncoming floods). While the Mamelukes were warriors with periods of fighting, they were also builders, as evidenced by several beautiful mosques in Cairo”*¹¹⁸

¹¹⁵) Haftendorn (2000), 58.

¹¹⁶) Haftendorn (2000), 58.

¹¹⁷) Seleshi B. Awulachew and others, *The Nile River Basin: Water, Agriculture, Governance, and livelihoods*, (London and New York: Routledge, 2012), 8.

¹¹⁸) Awulachew et al. (2012), 9.

During the colonial period from early 1700s till the 1800s, Europeans were eager to locate the source of the Nile as well as, mapping, measuring, clearing canals for navigation in the Sudd. Colonial powers had a keen interest in mechanized cotton and sugar cane plantations in the region. The United Kingdom conquered Kenya and Uganda and entered a number of legal water agreements to secure and protect their aspirations on the Nile River in Egypt and Sudan.¹¹⁹ British control over the river continued until other European colonial powers such as Italy and France emerged in the region at the beginning of the 20th century.¹²⁰ This alerted the British to ensure their interest over the river through negotiations and agreements with different parties.

3-2) Legal Agreements on the Nile River during the Colonial Period

Ethiopia was the only independent nation in Africa in the 1890s excluding her, the colonial powers of Great Britain and Germany made a treaty in 1890 that assigned the full control of the Nile to British influence. Following that year, Great Britain also signed a protocol with Eritrea's colonizer Italy that also imposed a duty on the latter not to build any irrigation scheme that might have a significant effect on the empties of the Atbara River into the Nile River. Great Britain expanded her sphere of influence in the region by controlling Sudan in 1898. Cotton became the main agricultural crop produced in the region and exported to the British textile mills.¹²¹

A protocol was also signed between Italy and Great Britain on April 15, 1891 the main aim of which was the demarcation of their respective spheres of influence in Eastern Africa. In this treaty only provision III refers to the Nile in a way that the "Government of Italy undertakes not to construct on the Atbara any irrigation or other works which might effectively modify its flow into the Nile."¹²² This gave the United Kingdom the permission to maintain full control over the Tekeze (Atbara) river.¹²³

On May 15, 1902 an agreement was signed between Ethiopia and Great Britain and the main aim of this agreement was defining the border between Ethiopia and Sudan, the latter was under the British colony. However, Article III of this agreement stipulates about the use of the river Nile. This specific provision has mistranslated issues between its English and Amharic version. The English version of the treaty reads "His Majesty the Emperor Menilik II, King of Kings of Ethiopia, engages himself towards the Government of His Britannic Majesty not to construct or allow to be

¹¹⁹) Awulachew et al. (2012), 9.

¹²⁰) Awulachew et al. (2012), 9.

¹²¹) Awulachew et al. (2012), 9.

¹²²) Christina M. Carroll, "Past and future legal framework of the Nile River Basin," *Georgetown International Environmental Law Review* 12 (1999), 248.

¹²³) Carroll (1999), 248.

constructed any work across the Blue Nile, Lake Tana, or the Sobat, which would arrest the flow of their waters except in agreement with His Britannic Majesty's Government and the Government of Sudan". While the Amharic version, 'arrest' had been translated into 'stop'. In other words, so long as Menilek did not stop the flow of the waters of the river completely, the agreement could not prevent him from utilizing and diverting Blue Nile water as per to the Amharic version. Some scholars recited this agreement as the most contentious Nile agreement in history and its effect on the diplomatic and political relations of the two nations was so pervasive and still persists today. This disagreement also extended to Ethio-Sudan hydro political relations according to which Sudan alleges that Ethiopia could not use the Nile river water without the permission of Sudan and this position was also backed by Egypt for protecting the latter's water interest while Ethiopia renounced this agreement as void by querying its legitimacy and mistranslation of the Amharic vis-à-vis the English version of the pact.¹²⁴

Another tripartite agreement entered among Britain, Italy and France in 1906 especially on its provision IV (a) states that these three colonial powers are committed: "to act together... to safeguard; ... the interests of Great Britain and Egypt in the Nile Basin, more especially as regards the regulation of the waters of that river and its tributaries (due consideration being paid to local interests) without prejudice to Italian interests"¹²⁵. Hence, this agreement affirmed the non-interference of the flow of the Nile tributaries such as Atbara, Blue Nile, and Sobat Rivers. In accordance with this protocol, the colonial powers of Italy and France ceded their water claim or interest entirely on the Basin in favor of Britain. Likewise, this agreement has also been rejected by Ethiopia as it violates its sovereign right. While the parties to the treaty acknowledged that almost all the tributaries of the Nile river originate from Ethiopia, Ethiopia was not a party to this agreement.¹²⁶

A formal agreement between independent Egypt and Anglo-Egyptian Sudan was concluded on the 7th of May 1929. This treaty awards an overwhelming water access rights for Egypt. The agreement also specifies Egypt's acknowledgement of the allocation of more water rights for Sudan's development saving that it did not "infringe Egypt's natural and historical rights in the waters of the

¹²⁴) Yacob Arsano, "Institutional development and water management in the Ethiopian Nile Basin," *The river Nile in the post-colonial age: conflict and cooperation among the Nile Basin countries* ed. Terje Tvedt, (London, New York: IB Tauris, 2010), 163; Treaty between the United Kingdom and Ethiopia, and between the United Kingdom, Italy and Ethiopia relative to frontiers between the Sudan, Ethiopia and Eritrea, Addis Ababa 15 May 1902.

¹²⁵) Arsano (2010), 165.

¹²⁶) Arsano (2010), 165.

Nile and its requirements of agricultural extension” as per to the clear stipulation of the agreement.

¹²⁷ The main tenets of this agreement states:

“A) Egypt and Sudan utilize 48 and 4 billion cubic meters of the Nile flow per year, respectively. B) the flow of the Nile during January 20 to July 15 (dry season) would be reserved for Egypt. C) Egypt reserves the right to monitor the Nile flow in the upstream countries. D) Egypt assumed the right to undertake Nile river related projects without the consent of upper riparian states. And E) Egypt assumed the right to veto on any construction projects on the Nile that would affect her interests adversely”¹²⁸

The 1929 Agreement apportioned only the partial use of the Nile water and provided the established rights of the parties as 48 BCM for Egypt and 4 BCM for Sudan.¹²⁹ In doing so, the United Kingdom recognized and assured the natural and historic rights as “acquired rights” to Egypt. None of the upstream nations were even mentioned or considered in this assertion of presumptive ‘rights’. In effect, this put severe restrictions on upstream countries’ water use. The agreement is mainly meant to be to secure and maintain the Nile water for Egypt by restricting the rights of Sudan and totally discarding those of the rest of upper riparians’ interests. None of the upstream states, including Ethiopia, were part of this agreement. After independence, all upper riparian states rejected this treaty.¹³⁰ Egypt and Sudan considers it binding with reference to the principle of universal state succession principle till the present time. The upstream states refute this principle and vow to discard the agreement under the auspices of the “Nyerere Doctrine” of selective succession to treaties, arguing that international agreements dating back from colonial times should be renegotiated when a state becomes independent. The notion behind this doctrine is that any nation should not be bound by deals made while the state was not in its sovereign position. Despite this, the agreement guaranteed the foundation for Egypt’s hydro hegemony and opened a door for the acquired rights claims and absolute command of the Nile water resource management. Further it was exerted as a basis for the 1959 Nile water agreement.¹³¹

After independence, Sudan sought modifications on the 1929 agreement by alleging that the agreement didn’t accommodate her rising water demand. Owing to the economic and technical

¹²⁷) Carroll (1999), 5.

¹²⁸) Exchange of Notes between Her Majesty's Government in the United Kingdom and the Egyptian Government on the Use of Waters of the Nile for irrigation 1929, http://internationalwaterlaw.org/documents/regionaldocs/Egypt_UK_Nile_Agreement-1929.html accessed on February 10, 2016.

¹²⁹) Kliot (2005), 70.

¹³⁰) Jon Harald Sande Lie, “Supporting the Nile Basin Initiative: a political analysis ‘beyond the river’”, *Norwegian Institute of International Affairs* <https://www.academia.edu> accessed on 28 February 2016.

¹³¹) Patrick Loch Otieno Lumumba, "The Interpretation of the 1929 Treaty and its Legal Relevance and Implications for the Stability of the Region," *African Sociological Review/Revue Africaine de Sociologie* 11, no. 1 (2007), 10-12.

developments the country was experiencing during the 1950s, Sudan complained about the unfair allocation of the water resource. Due to this reason, Sudan officially repudiated the 1929 agreement, citing it as obsolete and called for renegotiation in 1958. Consequently, a new agreement on the Full Utilization of the Nile waters was concluded in 1959 between the two nations. This agreement affirmed two nations as the only countries that have the right to utilize the Nile river water as one can infer it from the preamble of the agreement itself¹³² that states:

*“Whereas the Nile Waters Agreement concluded in 1929 has only regulated a partial use of the natural river and did not cover the future conditions of a fully controlled water supply, the two Republics have agreed as follows.”*¹³³

The 1959 agreement provided no alternative basis and the detail agreements of this negotiation mainly incorporate that the quantity of the average annual Nile yield to be 84 BCM measured at Aswan High Dam, in Egypt. The average annual flow of the Nile to be partaken was agreed solely between Sudan and Egypt as 18.5 BCM and 55.5 BCM, respectively. The annual water loss due to evaporation and other factors were agreed to be about 10 BCM. This quantity would be deducted from the Nile annual yield before their share is apportioned to Egypt and Sudan. The two nations also agreed to adopt a unified view in any other negotiations concerning the Nile waters. The agreement manifestly declares that if any claim would come from other riparian countries over the Nile water resource, both the Sudan and Egypt shall, together, handle the claims to the extent that accommodating that claim by deducting from their own share apportioned as per this agreement. The agreement also permitted Egypt the right to construct the Aswan High Dam that can store the entire annual Nile River flow and it also granted Sudan the full right to construct the Rosaries Dam on the Blue Nile and, to develop other irrigation and hydroelectric power generation until the country fully utilizes its Nile share quota. Moreover, the agreement set up a dual Permanent Joint Technical Commission in order to secure the technical cooperation between the two downstream countries.¹³⁴

This treaty armored the previous claims of “natural and historical rights” to the Nile waters and the two nations have been recited it as a redline set aside for further negotiations. According to Brunnee (2002), the agreement deviates from the normal legal treaties in a way that the treaty was bilateral;

¹³²) Carroll (1999), 5.

¹³³) Carroll (1999), 5.

¹³⁴) Agreement Between Sudan and Egypt for the Full utilization of the Nile waters, Cairo (November 8, 1959) <http://internationalwaterlaw.org> accessed on March 12, 2016. Fadwa Taha, “The History of the Nile Waters in the Sudan” in *The river Nile in the post-colonial age: conflict and cooperation among the Nile Basin countries* ed. Terje Tvedt, (London, New York: IB Tauris, 2010), 214.

it allocates the entire flow of the Nile water to themselves (Egypt and Sudan) exclusively of the rights and interests of other riparian nations, conspicuously Ethiopian rights.¹³⁵ Nonetheless, upper riparian countries including the greatest contributor for the Nile flow (Ethiopia) were neither invited nor were party to the 1959 treaty. This is one of the main justifications for alleging that the treaty plays a crucial role in establishing Egypt's negative or dominative hydro hegemony in the Nile basin system by securing Egypt's water share interest and rejecting or non-cognizance of the water rights of other riparian countries. Owing to this reason, "the 1959 treaty left a legacy for potential conflict between Egypt and Sudan, on one side, and Ethiopia and the seven other riparian countries, on the other".¹³⁶

Agreements made during the colonial period were not inclusive of the upper riparian countries' water share interests. They were characterized by the validation of Egypt's hydro hegemony in the region. The controversies that arose due to matters related to these treaties are irresolvable. The modern international water laws such as the 1997 United Nations Watercourses Convention could not settle the gaps created between upper and downstream countries to this date. Their contentiousness emanates from:

*"...Egypt says that all Nile basin countries must recognize the 1959 treaty before any new agreements are implemented, including benefit sharing proposals. ...this claim has not been favored by the rest of the riparian countries. Several riparian nations, especially Ethiopia, criticized the treaty/ies by stating that (i) they were not partaking to the 1929 and 1959 treaties and (ii) these treaties violate their right to equitable utilization as stated in the 1997 UN convention. The upstream countries with their own development issues do not feel that they need Egyptian permission to use Nile water."*¹³⁷

To conclude, Nile basin agreements before the 1959 were concluded either between/among colonial powers in the region or between Sudan and Egypt (downstream countries), none of the upper riparian countries were part of them. From an international law perspective those agreements are incomplete, contentious and fragmented treaty regimes. Most of the riparian countries either rejected them manifestly or have no clue about their very existence, as they are not party to them. The ceaseless aspirations of the implementation of these agreements, especially the 1959 agreement on the side of Sudan and Egypt and their renunciation by the rest of the riparian countries, had repercussions on the regional integration in the Nile Basin. In other words, this circumstance has

¹³⁵) Jutts Brunnee and Stephen J. Toope, "Changing Nile Basin Regime: Does Law Matter? " *Harvard International Law Journal* 43 (2002), 125.

¹³⁶) Awulachew et al. (2012), 13.

¹³⁷) Awulachew et al. (2012), 13.

magnified the gaps and disparities between the upper riparian countries and the lower riparian countries that in turn are an obstacle in the efforts to draw comprehensive binding agreements and build regional cooperation among those nations in the Nile basin. These agreements were historically descended and are the main causes for contemporary water disputes, between the upper and lower stream countries. However, in the post-colonial era efforts has been made efforts to unite the Nile basin countries through bilateral and multilateral cooperation agreements.

3-3) Post-colonial Hydro-relations in the Eastern Nile Basin

In 1983, the primary ingenuity in creating basin-wide cooperation proposal was taken by Egypt through launching an informal organization called “Undugu”- Swahili word a meaning “brotherhood”. This organization reflected the alteration of the internal policies of Egypt towards the Nile water matters turning the paradigm more to cooperation and understanding. This informal organization comprises of Sudan, Uganda and Zaire (the current Democratic Republic of Congo) from the Nile riparian nations, Ethiopia and Kenya partook as an observer status and latter joined by Burundi, Rwanda, and Tanzania, and its non-stream member of the Central African Republic. The main goal of Undugu was to discuss annual ministerial meetings issues such as the Nile waters, agriculture and resource development, and the promotion of economic, technical, and scientific cooperation among the riparians saving that the actual individual Nile stream country’s participation might be distinctive form of this main objective.¹³⁸ The role of Undugu in establishing an institutional locus for sharing of expertise and considering the Nile as synergic (a whole) is not less than the sum of national parts, was appraised by scholars in the field. Egypt continued to develop huge irrigation infrastructures unilaterally, widening its land reclamation projects without consulting other member states that directly deteriorated the cooperative initiative of the organization.¹³⁹

While most member states were interested in fostering “self-reliance and African inter-dependence,” through Undugu, Egypt was exploiting it as “an exercise in hegemonic influence” in the region by repeating British colonial ways of exerting authority. This situation created dissatisfaction among the other riparian nations and coupled with other factors such as Egypt’s financial and political problems facilitated the failure and parish of the Undugu to be a meaningful and concrete

¹³⁸) Richard K. Paisley and Taylor W. Henshaw, "Transboundary governance of the Nile River Basin: Past, present and future." *Environmental Development* 7 (2013), 64; Dereje Zeleke Mekonnen, "The Nile Basin Cooperative Framework Agreement Negotiations and the Adoption of a 'Water Security' Paradigm: Flight into Obscurity or a Logical Cul-de-sac?" *The European Journal of International Law* 2,no. 2 (2010), 426.

¹³⁹) Mekonnen (2010), 424.

cooperation organization in the Nile basin.¹⁴⁰

Ensuing the inoperativeness of the Undugu, Egypt, Rwanda, Sudan, Tanzania, Uganda, and Zaire (DRC) with the partaking of the rest of other riparian countries as an observer founded the Technical Cooperation Committee for the Promotion of the Development and Environmental Protection of the Nile (TECCONILE herein under) in 1992. When they inaugurated it for the first time, the organization was meant to be an interim scheme for a period of three years. The presumption was upon the expiry of this transitional period a permanent institution that encompasses the whole basin states would be formed. Its main objective was stipulated as:

*“TECCONILE aimed to contribute in the development of the Nile Basin in an integrated and sustainable manner through basin-wide cooperation and the determination of equitable sharing of its waters...to develop infrastructure, techniques and build capacity for the management of water resources and to formulate national master plans and integrate them into a Nile Basin Action Plan”*¹⁴¹

Initially Ethiopia and Kenya refused to join the institution considering it as a novel extension of Egyptian hydro hegemony in Undugu and non-incorporating of the fundamental issue of equitable utilization of water resource on the basin under its framework. TECCONILE became a subsidiary to Hydromet and persisted to be highly technical in its focus in lieu of hydro politics so as to discourage the full involvement of those countries that were on the observer status, especially Ethiopia.

Nevertheless, by encompassing all basin states, the Nile River Action Plan was developed and adopted by the Council of Ministers of Water Affairs that met in Arusha, Tanzania, in February 1995. Most of the provisions of this Action Plan were focused on elaboration of the establishment of a basin-wide, multidisciplinary framework for legal and institutional arrangements. But only few provisions of the plan were effectuated. Financial and other resource constraints and the contestation among the riparian nation to dominate in hydro hegemon on one another, were recited as two of the main justifications for its ineffectiveness. TECCONILE's role in providing Nile-related data and information, country capacity in technical monitoring by itself and through the 2002 Nile Conferences were magnanimous.¹⁴²

¹⁴⁰) Paisley and Henshaw (2013), 64.

¹⁴¹) Paisley and Henshaw (2013), 25.

¹⁴²) Hosam E. Rabie Elemam, “Egypt and Collective Action Mechanisms in the Nile Basin” in ed. Terje Tvedt, *The river Nile in the post-colonial age: conflict and cooperation among the Nile Basin countries* (London, New York: IB Tauris, 2010), 228; Paisley and Henshaw (2013), 65.

The “2002 Nile Conferences” was also one of the informal meetings of the riparian nations that played a pertinent role in the cultivation of cooperation in the region. After its establishment in 1993, the meeting was continued annually in various basin states till the 2002 assembly at which time they continued the Nile Basin Development Forum. The 2002 Nile Conferences were based on the theme of “comprehensive cooperation”. In spite of the fact that this conference was assumed to be technical in nature, the issues discussed often ranged into legal and normative topics. The merits of the informal nature of this meeting were to augment open discussions that would not have been done in a formal meeting and establishing trust through dialogue among the riparian nations. Taking into consideration the extensiveness of the Nile Basin and the competing interests and tensions among the riparian countries, this series of meetings created conducive environment for the establishment of sub-regional discussion forums within the Basin system so as to realize and effectuate cooperation widely in the region.¹⁴³ With the end of its period of implementation, the need to substitute TECCONILE was crucial and the water ministers of nine of the ten Nile riparian countries (Eritrea partaking as an observer) agreed to establish a new institution called the Nile Basin Initiative in February 1999.

The core objectives of the NBI were 'to develop the river in a cooperative manner, share substantial socio-economic benefits and promote regional peace and security'¹⁴⁴. The NBI epitomizes a landmark in Nile water management by transforming the riparian states interaction from competition to cooperation. It played a crucial role in bringing almost all Nile basin countries for joint discussions and promotes regional partnership, economic development and poverty alleviation. Learning from the causes of the failures of previous institutions in the basin system, the resource scarcity, financial sources could be secured from the international donors such as the World Bank, United Nations Development Program (herein under UNDP), and Canadian International Development Agency (herein under CIDA).¹⁴⁵

NBI has been able to bring the riparian states on board for dialogue towards setting up plans for cooperative utilization and management of the water resources but also make an effort towards establishing a legal institutional framework. One of the objectives of the NBI was to negotiate on a Cooperative Frame of Agreement (herein under CFA) that succeeds the past bilateral treaties. In May 2010, Ethiopia, Kenya, Rwanda, Uganda and Tanzania signed a Cooperative Framework Agreement (CFA) and latter Burundi and the DRC followed suit. The main notion of the CFA overlies on the legal tenet of determining a reasonable and equitable solution for sharing Nile

¹⁴³) Elemam (2010), 223; Paisley and Henshaw (2013), 65.

¹⁴⁴) Nile Basin Initiative www.nilebasin.org accessed on March 12, 2016.

¹⁴⁵) Paisley and Henshaw (2013), 67.

waters among the basin states. Almost all members of the NBI agreed on the contents of the CFA except Article 14b of the instrument that incorporates the ambiguous phrase “water security”. This provision becomes a point of contention, Egypt and Sudan refused to sign the document and threatened to leave the NBI unless this phrase is substituted with “benefit sharing”. The matter of controversy could also be boil down to the previous established water rights vis-à-vis the future prospect of equal water sharing claims in the basin. In other words, upstream countries have insisted that this new framework must disregard all previous agreements to which they were not part and secure their equal water share while downstream countries seek a new framework that includes and acknowledges their previous water share rights.¹⁴⁶ Nevertheless, the NBI has been influential in fostering the transfer of information on water resource sharing and initiating small projects. But in order to implement its pervasive Nile water projects, it requires to be a permanent river organization that in turn demands the ratification of a new Nile Treaty as agreed by all members.¹⁴⁷

The future success of the NBI is contingent on the CFA. This appears to be impractical at least for the time being because of the polar positions between the downstream and upstream countries regarding water share claims. Governments involved assert their current positions with reference to old adages of previous agreements and arguments largely following the formula of where they stand depend on where they are situated along the river in maintaining the classic upstream–downstream controversy. This relapses at the end to the contesting position held by Egypt and Sudan on one side, and Ethiopia and other upper riparians on the other side. To connect it with the discussion of this study, the CFA disagreements are finally coiled up on the aspiration of securing Egypt’s hydro hegemony position in the basin and the incessant counter contestation of this power status quo by the upstream countries, particularly Ethiopia.

3-4) Future Water Demand and Hydro-relation Prospects in the Eastern Nile Basin

Efforts have been underway to create cooperation among the Nile riparian countries through bilateral and multilateral agreements since the late 19th century. In this regard the 1891,1899,1902,1906,1929 and 1959 agreements reflect the influences of colonial powers’ on the two downstream Eastern Nile countries’ interests in the region. Besides, other basin wide institutions have also been set up such as the Undugu, TECCONILE, 2002 Nile Conferences and Nile Basin Initiative. However, all the Nile riparian countries, particularly Egypt, Sudan and Ethiopia continue to view Nile water development programs predominantly from state-centric perspectives instead of regional basin based cooperation platform. These nations prefer to take their

¹⁴⁶) Arsano (2010), 176-178; Awulachew et al. (2012), 13.

¹⁴⁷) Cascão (2009), 247.

own water development actions. Swain (2008) holds that this policy of unilateral water development is both unsustainable and conflict inducing.¹⁴⁸ Thus, to comprehend clearly the hydro relations of the region, studying the past hydro relations of those nations is not adequate but the current and future geopolitics and hydropower relations in the region have to be expounded as well. And the best approach is focusing on the country level positions towards the shared water resource.

First in the case of Egypt, the country's attachment with the Nile water resource is so strong and extends back to ancient times. Egypt has been utilizing the river and controlling the basin to a large extent whilst proclaiming her historic use rights to the River repeatedly. Egypt tried to justify her claims on the water resource from the viewpoint of her entire (sole) reliance on the Nile water for survival while other upstream countries have other alternative water sources such as better annual rainfall water. Consequently, the country is very sensitive about water diversions and water development projects in the upstream countries.¹⁴⁹

Second, Egypt is currently a country dependent on the Nile River for more than 95 percent of its total water consumption annually. Owing to her geographical proximity, Egypt receives 65.5 % of the 66 Cubic Idlometres per annum from the renewable surface water of the Nile basin. Still the country is one of the short listed nations that will face water strain or scarcity in the near feature.¹⁵⁰ Although Egypt is consuming almost the entire waters of the river, the country is still planning to extend the land reclamation projects in the Western Desert that in turn requires acquiring much more water from the Nile basin. Additionally, Egypt has built several irrigation projects such as the Isna Barrage, Nag Hammadi Barrage, Asyut Barrage, the Damietta and Rosetta Deltas, Zifta Barrage, Idfina Barrage and Damietta Dam in the river's downstream, which will certainly be affected by decreased flow from Aswan.¹⁵¹

On the other preview, the population of Egypt will grow from 62.3 million in 1995 to 95.6 million by 2026 and will likely reach 114.8 million before it stabilizes in the year 2065 as stated in the projections of United Nations population growth report. Though Egypt is consuming most of the water of the Nile water for irrigation purposes, the country imports more than half of its food from external sources. Hence, to accommodate the future growing demand for food due to the increasing

¹⁴⁸) Swain (2008), 208-209.

¹⁴⁹) Abadir M.Ibrahim, "The Nile Basin Cooperative Framework Agreement the Beginning of the End of Egyptian Hydro-Political Hegemony," *Missouri Environmental Law and Policy Review (MELPR)* 18, no. 2 (2011), 284); Swain (2008), 203.

¹⁵⁰) Swain (2008), 203.

¹⁵¹) Swain (2008), 204.

number of her population the country needs more water, which will have an impact and further pressure on an already scarce water resource.¹⁵²

Following the culmination of colonialism in Africa, the emerging independent Nile Basin states have claimed the right to use their share of the Basin water resource for their own national development. This scenario coupled with the external location of the vital source of the Nile, made water the foremost strategic national security concern for Egypt. Egypt is concerned that any hydro-electrical and irrigation dams would drain the Nile river water and could prevent it from reaching at the lower riparians. Resultantly, there will be a less water that will have repercussions on the growing economy and population. Recently, owing to so many factors that we will explicate in the coming chapter, the hydro political topography is changing in Eastern Nile nations in favor of the upstream countries so that the latter have transformed from prodding to take an action against Egypt's water interests. Upstream countries demand for more water to cope with their growing populations and economies but this is seen by Egypt as a potential national security threat. This is the point of contention between Egypt and Ethiopia subsequent to the construction of GERD on the Nile Basin. Egypt has contested issues pertaining to the Nile as a matter of national security and exercises its hydro hegemonic power in the region to curb any kind of threat arising from the consumption of water resources.¹⁵³

Second, Sudan is one of the largest African countries and has a diverse climate that ranges from the rainforest areas of the south with the average rainfall of 1,600 mm to the dry north with the average annual rainfall of 25mm. The northern part of the country is completely contingent on irrigation-based agriculture due to shortage of rainfall. Among the total 35 million population of the country more than 70 percent depends on agriculture.¹⁵⁴

Furthermore, the potential cultivable land Sudan owns is around 105 million hectares out of which only 16.7 million hectares is under use. Like other countries of the continent, the rapid growth of Sudan's population growth is forecasted due to this fact the country demands more water and cultivate arable land to increase her food production in parallel. Additionally, the increased desertification and land degradation in the country is exacerbating the pre-existed Sudan's water demand because Sudan is alleging that the country has utilized its share of the Nile water

¹⁵²) Swain (2011), 688; Swain (2008), 204.

¹⁵³) Jeroen Warner, Mark Zeitoun Warner, and Naho Mirumachi, "How 'soft' power shapes transboundary water interaction," *Global Water: Issues and Insights* (2014), 53; Hamdy A. Hassan, and Ahmad Al Rasheedy, "The Nile River and Egyptian Foreign Policy Interest," *African Sociological Review/Revue Africaine de Sociologie* 11, no. 1 (2007), 31-33.

¹⁵⁴) Swain (2008), 204.

apportioned as per to the previous agreements but still needs more water from the Nile.¹⁵⁵ Accordingly, Sudan built a number of dams for the purpose of water storage, irrigation and regulating the high seasonal fluctuation of the river runoff. In this regard, the Aulia Dam on the White Nile, Roseires Dam and Sennar Dam on the Blue Nile, and Kashm el Girba Dam on the Atbara River are part of this water development project. Though it could not be practical till now due to the undergoing civil war in the country, the Jonglei Canal was originally designed to bypass the swamps from upstream of the Sudd to a point further down the White Nile so as to increase the availability of water at downstream countries.¹⁵⁶

Moreover, Sudan is planning to build a number of additional dams to achieve food security and accommodate the country's increasing energy demand caused by economic development. Egypt supports Sudan's decision and plans of agricultural and hydropower based diversion of the Nile water while it strongly opposes any of those kinds of activities of other upper riparian countries (in this aspect the water dispute and controversy between Ethiopia and Egypt on the GERD could be mentioned here). The extension of Egypt's support to the Sudan stems from the benefit Sudanese dams provide in regulating siltation, stopping most of the sediment load before it reaches Lake Nasser and maintains the amount of water reaching to Egypt. Egypt expects that "hydropower can help Sudan to utilize its groundwater potential to meet the country's increasing water needs and ensure long-term smooth passage of Nile water to Lake Nasser"¹⁵⁷.

With similar geographical location at the downstream of the Nile Basin, Sudan and Egypt are also the historical colonies of United Kingdom with strong political, religious, and historical linkages. Sudan used to follow the footsteps of Egypt in matters related to the Nile. Exception to this trend were the disagreement on the 1929 treaty which was latter replenished with the 1959 that grants Sudan 18.5 BCM of water and the disagreement on the construction of the GERD in which case Sudan supports the project while Egypt opposes it. Nevertheless, Sudan still recognizes the dual policy towards the Nile River (I.e., historical acquired rights and, principle of equitable and reasonable utilization of the shared water resource) that clarifies the moderate approach Sudan is developing in the Nile basin unlike Egypt. In spite of the fact that the dominative negative hydro hegemony of Egypt is also extended to the Sudan (as one can infer it from the legal agreements and water based interactions of Sudan and Egypt).¹⁵⁸

¹⁵⁵) Swain (2008), 204.

¹⁵⁶) Taha (2010), 215; Swain (2008), 204.

¹⁵⁷) Swain (2008), 204-205.

¹⁵⁸) Taha (2010), 216; Yacob Arsano, "Ethiopia and the Nile Dilemmas of National and Regional Hydro politics," <http://e-collection.ethbib.ethz.ch/eserv/ethas:489/eth-489-01.pdf> accessed on 3 March, 2016.

Third, Ethiopia contributes not only about 86 % of the total Nile flow but also more than 95 % of the silt in the main Nile river system. As a result, while soil erosion and land degradation are the problem in the upstream countries, siltation and water quality pollution are downstream complications. That is the main reason behind that cooperation among the upper and downstream countries is so demanding to keep the natural flow of the water at the Basin level. For instance, the problem of downstream siltation, which requires upstream solutions such as building debris or detention dams, illustrates the interdependence of basin states. Much of the threat to the quantity and quality of Nile waters comes from Ethiopia, which also faces environmental degradation from deforestation and population growth.¹⁵⁹

Ethiopia's population growth is the rapidest in the entire Nile River Basin in general. Ethiopia's current population 98.9 million is projected to reach 287 million in 2050. Agriculture is the main sector of Ethiopia's economy that contributes 40 percent of the country's Gross National Product (here in after GNP) and 90 percent of its export and employs 85 percent of the population. 88 percent of the country's population dwells in the highlands that comprise only 44 percent of the total land area of the country. Suffering from incessant and drastic famine, the growing population and increasing food imports to accommodate these problems, the country aspires to achieve food self-sufficiency at any cost. »¹⁶⁰

However, while Ethiopia has approximately 2.3 million hectares of irrigable land in its part of the Nile Basin, of which only less than 1% has been developed. According to Swain;

*“..given its needs for survival, and with the headwaters of the Nile being one of its few natural resources, Ethiopia is serious about maintaining more Nile water for its own use. Egypt has historically been concerned about Ethiopia's water development plans because the country's irrigation plans could substantially reduce the water flow in the Nile, constituting a major threat to Egypt's water supply.”*¹⁶¹

Ethiopia's lack of other natural resources makes the country rely more on her water resource for food security. That has indirect repercussions on the country's potential of the usage of alternative resources to import food so as to accommodate the demand. While Egypt opposes vehemently any water diversion by Ethiopia for irrigation purposes, there has been some flexibility regarding the development of hydropower in the Ethiopian highlands. This is mostly attributed to the hope that

¹⁵⁹) The water resources of the Nile Basin <http://nilebasin.org/> accessed on March 15, 2016.

¹⁶⁰) World Population Review, Ethiopia population 2016, <http://worldpopulationreview.com/countries/ethiopia-population> accessed on May 20, 2016; Swain (2008), 205.

¹⁶¹) Swain (2008), 205.

these dams, as in Sudan, may help to arrest sedimentation. For some time, Egypt have been successful in employing her diplomatic strategy to curb any foreign investments and international financial support to Ethiopia's large-scale irrigation plans in the Nile River.¹⁶² Pursuant to Arsano, most of Ethiopia's water project plans are ineffective due to:

*".... lack of sufficient financial resources of its own, and neither did it have readily available access to external finances to carry out water-resources development. The country also lacked the institutional capability for studying, planning and implementing projects. Ethiopia's vulnerability to the upstream-downstream hydro political confrontations in the context of the Cold War complicated matters, as did the related and recurrent political upheavals."*¹⁶³

Currently, Ethiopia is transforming her international image from a 'silent partner' to active role player in the Nile water politics. The country's silent involvement on Nile matter was amenable to protracted internal conflicts and political instability, lack of financial sources, weak institutions, a lack of priority and strategy for the water sector, and an agricultural sector relying on rain water, reducing need for irrigation. However, recent political, social and economic stability in the country complemented by improved relations with donors is prioritizing the Nile issue in Ethiopia.¹⁶⁴ Recognizing this Ethiopia has been financing the cost of the GERD from the domestic sources.

So, there are efforts amongst the Eastern Nile Basin nations to cooperate at the regional level by inaugurating regional water institutions such as NBI by the international funding agencies. In this regard, the World Bank projected the efficacy of the NBI in creating cooperation and minimizing tensions among the basin nations. Each of these nations still holds their own individual ambitions, which do not necessarily assimilate with their counterparts. Hence, the state-centric perspective of the Nile water development still dominates the basin.¹⁶⁵

Countries like Ethiopia their active membership in the CFA has not deter them to take a unilateral hydraulic development projects in the absence of cooperation and a comprehensive agreement. The GERD could be mentioned as the best instance in this regard. According to Cascão (2009), the impacts of those kinds of upstream projects on the lower riparian nations might be arduous to assess,

¹⁶²) Swain (2008), 205-206.

¹⁶³) Arsano (2010), 169.

¹⁶⁴) John Waterbury, *The Nile Basin: National determinants of collective action* (New Haven and London: Yale University Press, 2008), 166-167.

¹⁶⁵) Tvedt (2010), 216; Swain (2008), 206.

however, their political implications are huge especially in culminating the historical monopoly and dominative hydro- hegemony of the lower riparian countries, particularly Egypt.¹⁶⁶

Furthermore, none of the Nile basin countries in general and the Eastern Nile Basin Nations in particular, has yet ratified international water laws such as the Convention on the Law of the Non-Navigational Uses of International Watercourses. As the thesis addressed in chapter two, these conventions plays a key role in establishing basin wide cooperation and protecting the ecosystem as well as assuring tenets such as equitable and reasonable manner, no- harm use and exchange of information rules. The lack of support for these tenets in the Eastern Nile Basin countries clarifies the prevalence and domination of an outdated school of thought in the Nile water management sector. The ambiguous principle “water security” in the CFA provision is also creating a serious stalemate, which threatens future cooperation among the Nile Basin countries. Failing to achieve the concurrence of all states particularly Egypt and Sudan, the CFA will not be in any way capable of addressing the water sharing issues of the Nile. Rather, it may be a major source of contention between upstream and downstream riparian countries.¹⁶⁷

To conclude this chapter, Ethiopia is gaining a greater water political role to play in the region that could be asserted by her active hydro-engagements. One of these instances is the role the country played as an instrument to convince the six equatorial Nile riparians to vote in favor of the draft CFA that validates the tenet called “equitable utilization” of water resources. This agreement also counters and modulates the past agreements and treaties that confer Egypt and Sudan historical and acquired rights. Ethiopia’s bargaining power is enhancing in the region and draws on good relations with the World Bank and the wider financial donor communities. Financial and investment support from foreign nations, notably China is improving from time to time. Nonetheless, Egypt’s bargaining power at the international level has been diminishing compared to the previous ages. These scenarios are dashing the feasibility of achieving basin-based water resource management in the near future, and at the same time have increased the possibilities of open dispute among the riparian countries.¹⁶⁸

The rational behind the inefficiency of creating cooperation in the Nile Basin can be summarized: First, the efforts of the NBI in addressing the core point of contentions between the downstream and upstream riparian are insignificant. Secondly, the introduction of the concept of equivocal terminology -“water security” under

¹⁶⁶) Cascão (2009), 256.

¹⁶⁷) Yacob Arsano and Tamrat, “Ethiopia and the Eastern Nile Basin,” *Dübendorf Aquatic Sciences* 67 (2005), 15; Swain (2011), 696.

¹⁶⁸) Swain (2011), 697.

the CFA provisions made the gap wider in the interpretation of it between the upper and lower riparian countries. Third, the negotiation process in the NBI and CFA institutions lacks efficiency. Fourth, the construction of the GERD is at the moment serving as a cradle in changing the bellicose history debate and has profound effect on the interaction among these and other riparian states.

CHAPTER FOUR

4) CONSTRUCTION OF GRAND ETHIOPIAN RENNAISSANCE DAM (GERD) ON THE NILE RIVER: CAUSE FOR COOPERATION OR CONFLICT AMONGST ETHIOPIA, EGYPT AND SUDAN

4-1) General Discussion about the GERD

The pertinence of energy in today's world is not only restricted to the provision of basic services such as lighting and power to energy end utilizations but access to energy is also reformulating the economic and social progress of nations. Transformation facets of countries are dependent on the availability, affordability and reliability of energy in general. In other words, energy access and security is a very determinant factor of evaluating the development and proper functioning of the present day societies as "social affairs, economic exchange, information sharing, provision of public services and the overall quality of life depend on the availability and reliability of the supply of energy".¹⁶⁹

Globally, more than 1.3 billion people don't have access to electricity and 2.7 billion lack clean cooking facilities. These challenges are cumulated largely (95%) in Africa and developing Asia. In Eastern Africa, over 90% of the population are dependent on biomass energy, which is more than any other developing regions: Asia 54 %, Latin America 19% and the Middle East 0%.¹⁷⁰ This report further expounds that the electricity access of each Eastern African countries have been assessed in the following manner:

*"Electricity access rates range from 1% in the new State of South Sudan (leaving 9.3 million people without access), 9% in the Democratic Republic of Congo (DRC) (nearly 60 million without access) to 12% in Uganda (more than 27 million people without access), 14% in Tanzania (nearly 38 million without access), 18% in Kenya (more than 32 million without access) and 22.5 % in Ethiopia (nearly 64.5 million without access)."*¹⁷¹

Hence, Africa, and particularly the Eastern Africa sub region labeled as the most significant challenge to address the global energy access problem though this sub region is endowed with well-known rivers that have praiseworthy potentials for hydropower production and development. The hydropower potential of the Nile Basin countries combined amounts to roughly 140,000 MW and Ethiopia account for 45,000 MW of this total potential in the region.¹⁷² However, the energy sector in Ethiopia is underdeveloped and mainly relies on biomass energy. Energy supply and

¹⁶⁹) United Nations Economic Commission for Africa (UNECA), "Energy Access and Security In Eastern Africa: Status and Enhancement Pathways," Addis Ababa, (2014), 8.

¹⁷⁰) United Nations Economic Commission for Africa (UNECA) (2014),8.

¹⁷¹) United Nations Economic Commission for Africa (UNECA) (2014),8.

¹⁷²) United Nations Economic Commission for Africa (UNECA) (2014).

consumption trends for the country have been reported in away that the share of biomass, petroleum fuels and electricity counts 91.3, 7.6 and 1.1 percent of the total energy use, respectively.¹⁷³ Recognizing the underdevelopment of the country's energy sector and taking into account of the key role energy could play in the country's social and economic development, enhancing productivity in agricultural, industrial and social services, Ethiopia devised her first Energy Policy in 1994. One of the primary and vital directions of this policy is "expanding hydroelectric power based on national economic and social needs".¹⁷⁴

To exploit these energy resources and to expand access domestically and enhance export potential, Ethiopia has embarked on an aggressive energy resource development path evidenced by the development of a series of hydroelectric projects. Among these projects was the commencement of a huge hydro electric dam at the Blue Nile at Guba *Woreda* (County) in Benshangul-Gumuz Regional State in April 2011 -known as the Grand Ethiopian Renaissance Dam (GERD). With an annual production capacity of 6,000MG, a storage reservoir capacity of 74 BCM, a height of 175 Meters and length of 1.8 Kilometers, the GERD is set to become the largest hydroelectric power plant in Africa.¹⁷⁵ The Ethiopian Government has alleged that the objective of the dam is not restricted to attaining electricity shortages domestically but generates surplus energy for export to neighboring countries to benefit the wider region and augment regional economic integration.

As this study discussed in the previous chapters, the main feature of the regional geopolitics spills over into hydro politics. When Ethiopia initiated the GERD project the reactions from the two downstream countries (Egypt and Sudan) was totally variegated in a way that Sudan avowed and reaffirmed its support for the GERD whilst Egypt vociferously opposed the project, by alleging the dam would infringe her historical water share rights.¹⁷⁶

From the historical point of view, Egypt strongly opposed any sort of water development projects on the Nile by the upriver countries outside of the previous agreements of the basin. Gebreluel explained that the issue of Nile for Egypt is not only a matter of economic benefits but also

¹⁷³) Ethiopian Economic Association Report, "Development, prospects and Challenges of the Energy Sector in Ethiopia," VII 2007/08, 222.

¹⁷⁴) Ethiopian Economic Association Report (2007/2008), 222.

¹⁷⁵) Grand Ethiopian Renaissance Dam Project, <http://www.salini-impregilo.com/en/projects/in-progress/dams-hydroelectric-plants-hydraulic-works/grand-ethiopian-renaissance-dam-project.html>, accessed on January 16, 2016; Goitom Gebreluel, "Ethiopia's Grand Renaissance Dam: Ending Africa's Oldest Geopolitical Rivalry?" *The Washington Quarterly* 37, no. 2 (2014), 25.

¹⁷⁶) Goitom Gebreluel, "Ethiopia's Grand Renaissance Dam: Ending Africa's Oldest Geopolitical Rivalry?" *The Washington Quarterly* 37, no. 2 (2014), 25.

symbolic and sentimental. In other words, apart from the geopolitics and securitization of the Nile river

*“..... holds a special and entrenched role in the history and identity of the nation. Ethiopians, too, see the river in a symbolic light: their incapacity thus far to utilize the Nile waters epitomizes the nation’s political and economic underdevelopment.”*¹⁷⁷

The connotation and the meaning of the name given to the Dam project (the GERD) or in Amharic “hedasie” emanates from this sentiment so as to refer to a leap out of the dark ages of underdevelopment and poverty. It indicates Ethiopia’s recent economic and political changes and contemporary revival undergoing in the country. For the leaders of both nations the dispute over the Nile is a political ordeal where one slight error might constitute domestic political suicide and loss of regional political leverages.¹⁷⁸ Currently, the hydraulic historical controversies, the pressures of population growth, industrialization, and climate change are the main causes. Their impact on water quantity and quality of the river, on one side, and the construction of the GERD as an immediate cause, on the other side, aggravate the complications and the tensions of water politics in the region.¹⁷⁹

However, the three nations decided to absolve the deadlock through negotiation and diplomacy. Ethiopian government invited the two downstream countries of Sudan and Egypt to inaugurate International Panel of Experts (herein under IPoE) on the GERD. This panel also incorporates two national expert representatives from each of the three nations. The main objective of the IPoE is to “review the design documents of the GERD, provide transparent information sharing and to solicit understanding of the benefits and costs accrued to the three countries and impacts if any of the GERD on the two downstream countries so as to build trust and confidence among all parties”¹⁸⁰. Upon presenting its final report, the Panel concluded that the GERD fulfills the international dam construction standards and its effect on the downstream countries is not significant. In addition, the panel also gave its recommendation on some core issues like the dam safety and the need to conduct further hydropower modeling in the Eastern Nile Basin and to undertake further downstream socio-economic impact assessments of the dam.¹⁸¹

However, dealing to settle their differences amicably did not persist for that long. The tapping of the Nile River water by Ethiopia for the GERD purpose in 2013 escalated the tensions between Egypt and Ethiopia again. Egypt has even resorted to threatening to use military force targeting

¹⁷⁷) Gebreluel (2014), 25.

¹⁷⁸) Gebreluel (2014), 25.

¹⁷⁹) Gebreluel (2014), 25.

¹⁸⁰) International Panel of Experts (IPoE), “Final Report on the GERD Final Report,” Addis Ababa, May 31st, 2013.

¹⁸¹) International Panel of Experts (IPoE) (2013).

strikes on the GERD reservoir.¹⁸² In a political discussion meeting without cognizance of they were live on TV broadcast, Egyptian politician leaders proposed to former President Morsi that Egypt should either conduct a military attack on Ethiopia and her dam or sabotage it by funding armed rebels operating in its territories by destabilizing the country.¹⁸³ Additionally, the Egyptian president at that time (Morsi) threatened Ethiopia by stressing “Egypt’s water security cannot be violated in any way...as head of state, I confirm to you that all options are open”. He further warned military action might be the response “if the Nile diminishes by one drop then blood is the alternative”. Other Egyptian political leaders followed suit in disseminating threats against Ethiopia such as the president candidate to replace Morsi, (Mortandar Mansour), also echoed the identical threat by reiterating he will “order to use military force against Ethiopia upon her persistence on the construction of the GERD”¹⁸⁴. The former Egyptian Foreign Minister Mohamed Kamel Amr also propagated this absolute opposition to GERD, by vowing not to give up "a single drop of water from the Nile" and "No Nile means no Egypt"¹⁸⁵.

On the Ethiopian side, Ethiopian Foreign Ministry, Dina Mufti stated that Ethiopia wouldn’t be "intimidated by Egypt's psychological warfare and won't halt the dam's construction, even for seconds". Furthermore Mufti indicated, “No country operates without precautions, let alone Ethiopia, which has a track record of defending its independence from all forces of evil”. Likewise, Ethiopian Prime Minister Hailemariam Desalegn expressed his disdain for Egyptian provocations and reiterated the construction of the GERD will advance without interruption. Foreign Minister of Ethiopia Tedros Adhanom also affirmed that “Ethiopia cannot remain poor it must utilize its resources to lift its people out of poverty”. Ethiopia indicated her vehement position by interlinking the construction of the dam as part and parcel of her struggle to eradicate poverty in the country.¹⁸⁶

As this study has shown, Sudan and Egypt had a uniform and concurrent position towards water issues that had been arising on the Nile River. Following these controversies between Egypt and Ethiopia, however, the government of Sudan holds a unique and different position in supporting the GERD. Sudan’s government spokesman Ahmed Bilal has asked Egypt to stop war provocations

¹⁸²) United Nations Economic Commission for Africa (UNECA), “Energy Access and Security In Eastern Africa: Status and Enhancement Pathways” (2014), 190.

¹⁸³) BBC, Egyptian politicians caught in on-air Ethiopia dam gaffe <http://www.bbc.com/news/world-africa-22771563> accessed on March 15, 2016.

¹⁸⁴) Ahramonline, Egypt ‘war’ talk raises Ethiopia Nile dam stakes <http://english.ahram.org.eg/News/73695.aspx> accessed on March 15, 2016.

¹⁸⁵) Ahramonline, 'No Nile, no Egypt', Cairo warns over Ethiopia dam <http://english.ahram.org.eg/NewsContent/1/0/73598/Egypt/0/No-Nile,-no-Egypt,-Cairo-warns-over-Ethiopia-dam-.aspx> accessed on March 14, 2016.

¹⁸⁶) Aljazeera, Ethiopia discards Egypt threats over Nile dam <http://www.aljazeera.com/news/africa/2013/06/20136128306931161.html> accessed on March 14, 2016.

stances in the basin. He added that Sudan would get many benefits from the dam, including better supply of electricity and yearlong regulation of the Blue Nile's flow by reciting IPoE's report. The position of Sudan was not gratified by Egypt and one of the Egyptian political leaders described Khartoum's stance on the issue as "disgusting".¹⁸⁷ This is an indication that the conflict of interests on the GERD is not confined to Ethiopia and Egypt but impacts between Egyptian and Sudanese hydro political relations.

Following these tensions, many scholars in the field speculated on a potential "water war". However, with consistent negotiations and water diplomacy among these nations, the four-year controversy and dispute on the GERD seem to be dissipating with signature of the "Declaration of Principles" by Egypt, Sudan and Ethiopia in March 2015 at Khartoum, Sudan. Ten general principles were outlined in this agreement including the principle of cooperation and understanding of the interests of both upstream and low stream nations further stipulate:

*" .. the role of the GERD on the development, integration and sustainability of electricity access in the region, principle of not causing significant harm, principle of fair and appropriate use of the water resource, following the technical recommendations with respect to the dam policies, principles of building trust, information and data exchange, dam safety and principle of peaceful dispute settlement in case of controversies"*¹⁸⁸.

Most of these principles are general in nature and are in line with the international water laws doctrines (see on chapter two). Hydro political negotiations and diplomatic efforts among these nations towards the GERD have been continuing. Their hydro political relations are characterized by sometimes in harmony and disagreement at other times. For instance, the Eastern Blue Nile Basin nations were in controversy on matters of selecting a neutral consultancy firms that could study further impacts of the dam on one hand, they reached at an agreement to take every measures to build and strengthen their trilateral ties, on the other.

Therefore, the GERD and its related issues have not yet settled. This study elaborates the peace and security implications of the GERD in the region. The methodology the study will employ is the Framework of Hydro hegemony. The first issue the thesis address is, does the construction of the GERD bring any shift in hydro-hegemony position in the Eastern Nile basin region? To entertain this question, the hydro hegemony positions of the three nations will be elaborated in detail. Second,

¹⁸⁷) African Review, Sudan and Egypt clash over Ethiopia's Nile dam accessed on 14th of March 2016 <http://www.africareview.com/News/Sudan-and-Egypt-clash-over-Ethiopia-dam/-/979180/1874356/-/k2bqs7z/-/index.html> accessed on March 14, 2016.

¹⁸⁸) Agreement on Declaration of Principles between Egypt, Ethiopia and Sudan on the Grand Ethiopian Renaissance Dam Project (GERD) <http://internationalwaterlaw.org/documents/africa.html#Nile%20River%20Basin>, accessed on March 29, 2016.

political and diplomatic interactions of these states will also be studied to measure them with the Yoffe et al's intensity scale of cooperation or conflict in the region. Thirdly, an explanation will be provided with regard to the implication of the GERD on the peace and security of the region based on the recent hydro hegemon status and conflict intensity scale analysis.

4-2) Is there a Change in Hydro-hegemony because of the Construction of the GERD?

The concept of hydro hegemony research is mainly based on the notion “the absence of war does not mean absence of conflict”¹⁸⁹. In our analysis below we will ponder on this principle to investigate the varieties of conflict and cooperation scenarios. State interactions ranges from the extreme negative position so-called war to the positive extreme-cooperation scenario regarding the sharing of the water resource in the Nile basin. Based on the previous analysis of this study, there are scholars claiming Ethiopia's unilateral decision to construct the GERD is an indicator of hydro hegemony change from Egypt to Ethiopia. They hold that makes Ethiopia as a new hydro-hegemon in the region while others express the existence of power change due to this action of Ethiopia but it is not as such complete shift to replace the status quo. In the latter case, the alteration of the hydropower is limited to the extent to challenge historical dominative hydro hegemony of Egypt by Ethiopia not changing the hydro hegemony in the region (I.e., it is creating counter-hydro hegemony, not forming a new hydro-hegemony). In the following section the thesis focuses on addressing those issues by entertaining the hydro hegemony positions of the three nations in terms of four dimensions of power as developed by Zeitoun and Warner (2006) and revised and updated by Cascão and Zeitoun (2010).

4-2-1) Hydro-hegemony Positions in Eastern Nile Basin

First, geographical or locational position pertains to river flow directions and determines the riparian structure of the basin¹⁹⁰ as upper, middle and lower riparian. In our case, Eastern Nile Basin nations Ethiopia, Sudan and Egypt could be categorized as upper, middle and lower stream countries. Locations enable some countries to control the headwaters of international rivers; and it is also a non-dynamic or static form of hydro political leverage, which those nations employ to influence the lower riparian countries. Especially in the case of contentious trans boundary water resource, the upper riparian nations might use it as leverage by threatening to alter the quantity and quality of supply of water to countries down the river. When the upper riparian nations are hegemonic, they might use this power position to threaten the lower riparian nations by taking actions such as minimizing the amount of water in bargaining their foreign policy objectives.

¹⁸⁹) Cascão and Zeitoun (2010), 28.

¹⁹⁰) Cascão and Zeitoun (2010), 31.

“Water weapon” is a coinage provided for upstream countries’ utilization of their positions to manipulate the water and influence their politics depending on the political and foreign policy relations of the downstream countries.¹⁹¹

Occasionally, when nations apply this power properly, the political authority they might incur is a way much better than other political, military might or economic dominance. Comparatively, Ethiopia as an upstream country has the best geographical power position. Ethiopia has better geographical power leverage that could be used in times of extreme water competition scenarios. The complete use of this power, however, might lead to more strains and disputes among those nations.¹⁹² Furthermore, there are several justifications that constitute upstream countries are in a better position than downstream: i) their very location grants a better authority in managing the quality and quantity of water than the middle or lower riparian nations: ii) mostly the courses of the river in the upstream nations are characterized by mountainous topography that creates more watersheds for those nations and enhances their efficiency and convenience for hydroelectric power production: iii) during river pollution they are the last to be affected in comparison with other downstream countries as the water empties downwards. Ethiopia’s upstream position in the Nile River basin bestows all these advantages as well.¹⁹³

Nonetheless, the country was not in a position to exploit these advantages owing to incessant civil war, economic underdevelopment, external economic mobilization on water projects of the country and political instability in general. Today, there are some changes in those circumstances of the country. Though Ethiopia has less military and economic prowess than Egypt, the country has a better position in this political bargaining chip to construct water development projects on the Nile River as evidenced by the GERD. As discussed in chapter three, the cooperation and shared vision of the Nile riparian states has already been stifled for the number of reasons. The NBI is appraised for its contribution in catalyzing cooperation in the basin but it has underachieved in the implementation of delivering the projects of the riparians under its auspices. Due to this fact, Ethiopia’s planned projects under the Nile Basin initiative could not be attained.¹⁹⁴ This circumstance compounded with her upper riparian position paved the way for the country to move forward in constructing the GERD on the Nile River unilaterally. This confirms upstream country

¹⁹¹) Hussein A. Amery and Aaron T. Wolf, *Water in the Middle East: Geography of Peace* (Austin: University of Texas Press, 2010), 6.

¹⁹²) Jenny R. Kehl, "Hydro political Complexes and Asymmetrical Power: Conflict, Cooperation, and Governance of International River Systems" *Journal of World-Systems Research* 17, no. 1 (2015), 229; Amery and Wolf (2010), 8.

¹⁹³) Peter P. Mollinga, “Water policy-water politics,” in *Water politics and development cooperation: Local power plays and global governance*, eds. Waltina Scheumann, Susanne Neubert, and Martin Kipping (Verlag Berlin Heidelberg: Springer Science & Business Media, 2008), 27.

¹⁹⁴) Tvedt (2010), 246.

locational power has an influence in challenging the relative lower riparian hydro hegemon such as Egypt. Most of the upper riparian nations recite the tenet of Herman doctrine and hydro-sovereignty to augment and pursue their geographical power in the basin. Additionally, the upstream countries such as Ethiopia also claims international customary law practice notions of “equitable and reasonable utilization of the shared water resources” supports her dam projects on the shared river basins while the lower stream countries refute these argument by reciting “no significant harm” and “pre-existed usage” principles (See on chapter 2).

In comparison, in terms of geographic power Sudan as a middle stream country has a better position than Egypt. Sudan is exploiting this relative advantage by developing some hydraulic projects on the Nile River without giving prior notifications to Egypt.

Conducting relevant studies on the synergic impacts of the dams to be constructed in the upper riparian nations are crucial or else when upstream countries such as Ethiopia implement this kind of power position to develop water projects in isolation, it might foment conflict and tension among the riparian countries.¹⁹⁵

Similarly, when Ethiopia diverted the flow of the river in 2013 for the purpose of the GERD, the response from Egypt was one of discord and threat owing to this situation tensions were mounted. In other words, while Ethiopia began to use its geographic advantages in constructing the GERD, Egypt’s reply was increasing political pressure, military threats, and economic leverage, which often exacerbate conflict rather than promote cooperation. When the upper riparian countries use this power they should consider the interests of other lower riparian nations’ interests and studying the impacts of the projects on the downstream nations is also pertinent to keep the pivotal balance. In doing so, the upstream country assures these projects won’t have any significant harm on the lower riparian nations’ water interests. This will play a crucial role in avoiding controversies and tensions amongst common water sharing nations. Otherwise, when the lower riparian countries are more powerful than the upper riparians, which is true in our case, the construction of water projects on the upstream countries without prior notification and concurrence with the downstream countries might lead to conflict. Thus, the exercise of this power by the upstream state might easily accentuate conflict rather than cooperation.¹⁹⁶

Ethiopia has the best geographical power position. This could be exploited as a mechanism to contest the Egyptian hydro hegemony in the region. Relatively speaking, Sudan has also a better position than Egypt in this aspect. In spite of the fact that, using this power unilaterally (without the

¹⁹⁵) Kehl (2015), 229.

¹⁹⁶) Kehl (2015), 229.

consultation and coordination with other co-riparian nations) might exacerbate tensions and be dangerous for the peace and security of the region as it might prone the riparian countries to conflicts and tension rather than cooperation as we can infer it from the interactions of the three nations upon the diversion of the river Nile for the GERD in 2013.

Second, material power refers to the capacity of state to encompass economic and military power cumulatively. Though there are undeniable facts that the Eastern Nile countries are advancing in these sectors, Egypt commands the region;

A) The economic power of those nations is treated in this paper from two paradigms: the domestic economic capacity of individual nations, on the one side, and the economic mobilization power to secure external finances for water development projects and to curb other riparian nations' foreign financial sources for water related project developments especially on the shared rivers, on the other side. For instance, this includes scenarios such as Egypt's diplomatic measures to bar the feasible international financial sources of Ethiopia's water development projects on the Nile.

The economic capacity and power of these nations are mostly measured by individual state's Gross Domestic Product (herein after called GDP) that refers to the sum of all goods and services produced in one year within a country. According to the 2014 World Bank report, Ethiopia's GDP accounted for USD 55.61 billion with an annual growth rate of 10.3% while Sudan's GDP was USD 73.81 billion with an annual growth rate of 3.1%. In comparison, Egypt's GDP is more than the double total GDP of Ethiopia and Sudan combined at USD 286.5 billion with an annual growth rate of 2.2%.¹⁹⁷ From this figures one can easily deduce that Egypt produces much more than the two nations, which implies Egypt's economy is much better than the two countries. Egypt is by far more powerful than the two nations economically speaking though Ethiopia's annual GDP growth rate is better than Egypt and Sudan as the statistics cited above demonstrates. Egypt's relative strong economy is interlinked to the utilization of the Nile water with more than 95% of its populations are dependent on the Nile River.

When the lower riparian countries are more powerful in their economy than the upper ones, states use their economic capacity to leverage and negotiate with the upper riparian nations through trade and economic aid ties. In our case, increasing market access between and among the riparian nations, especially the stronger lower riparian nations with the poor upstream nations, will reinforce benefit based economic cooperation relations. This sticks these nations to one another and

¹⁹⁷) The World Bank, "Countries Development Report 2014," <http://www.worldbank.org/en/country> accessed on March 17, 2016.

minimizes future water based conflicts. Because riparian states need to avoid water induced conflicts that might be followed by economic sanctions and loss of access to market. Fighting water wars or disputing with other nations will cost them more for those nations from the cost-benefit point of view.¹⁹⁸ Establishing such viable economic ties with the underdeveloped upstream countries empowers the wealthier lower riparian nations and guarantees them a dominant position in water sharing negotiations. The total amount of trade plus aid is important in transnational negotiations, and the percentage of GDP can infer a level of dependence on trade and aid, which might affect the outcome of asserting economic power. Egypt with a better GDP had the opportunity to exploit this power in their interactions with upper riparian Nile Basin nations especially with Ethiopia. Egypt established Undugu to reinforce its economic, political and technical ties with the rest of the basin nations but failed to be effectuated (see under chapter three of this study). The recent bilateral and multilateral agreements made between Egypt and other upper riparian nations in economic, social and political spheres, represents the determination of Egypt to use her economic power creating economic integration with the upper riparian nations. These types of cooperation agreements entered between Egypt and Ethiopia after Ethiopia initiates the construction of the GERD on the Nile River is an instance.

B) States access to financial aid and mobilization is another yardstick to measure the economic strength and power of the riparians. In other words, most of the Nile basin countries are so poor that they don't have the financial power to exploit their water resources by raising their own domestic funds. They need external financial resources to support and develop their hydro infrastructures at the basin level. Some riparian nations also engage themselves in curbing the financial sources of upstream countries external financial access to develop their water projects on the Nile. In doing so, they will protect and secure their water share interests by blocking others' access to external funds while they assure their own fund through diplomacy. This is one of Egypt's tactics used to earn her financial sources from, and to persuade international donors and creditors not to finance Ethiopia's water projects on the Nile River.¹⁹⁹ External international financial source is an arena whereby basin countries rally to secure their interests or block others to sustain their hegemonic position in the basin system.

Egypt is the leading hydro hegemon in the region in both domestic economic position and international financial mobilization capacity. Mostly economic power of a nation is also a direct indicator of the military power as economically stronger nations are expected to spend much more

¹⁹⁸) Kehl (2015), 229-230.

¹⁹⁹) Huiyi Chen and Ashok Swain, "The grand Ethiopian renaissance Dam: evaluating its sustainability standard and geopolitical significance," *Energy Development Frontier* 3, no. 1 (2014), 15.

on their military budget than the poor ones. This consideration also works in the case of Eastern Nile countries.

C) Military powers. It is arduous assessing the military power of the Nile riparians because of the prolonged conflicts the region has experienced. Correspondingly, it is also difficult to assess each country's military power positions to determine their hegemonic positions. But this study will evaluate this power position from military aids, annual military expenditure and military power ranks, points of view.

After the 1979 Camp David accord, Egypt has had staunch relations with the West in building a strong military power to engage in the Israeli-Arab conflict. Egypt, for example, received about USD \$2 billion financial aid and other military support from the US every year until recently. Though this aid was frozen for a while after the downfall of the President Mohammed Morsi, the US aid has been resumed recently by donating about USD \$575m (£338m) to Egypt.²⁰⁰ In this regard, Egypt receives more military aid from external sources like the US than Ethiopia and Sudan.

The relative wealth and economic position of a country has a direct reflection on the military expenditures of states. Egypt has better economic power and her GDP exceeds the summation of Ethiopia and Sudan's GDP combined. Hence, expectedly Egypt's military expenditure is much higher than the two countries. In this regard, the Global Firepower 2016 report estimated Egypt's annual military expenditure as USD 4.4 billion. Ethiopia allocates USD 340 million annually for defense while Sudan allots USD 2.47 billion. Global Firepower enlists nations military power positions by measuring military human and material components. This institution placed Egypt, Ethiopia and Sudan 18th, 46th and 102nd respectively in terms of military power position in the world.²⁰¹ Additionally, in 2014 Stockholm International Peace Research Institute Report (SIPRI) estimated 1.6% of Egypt's GDP accounted for its military spending in comparison to Ethiopia's 0.7%.²⁰² From these discussions, one can deduce that Egypt is capable of building a modern army that surpasses Ethiopia and Sudan. To that end, Egypt is a military hegemon in the region as it exceeds Ethiopia and Sudan not only in annual military expenditure but also by securing a large amount of military financial aid from external sources particularly from the US.

Third, bargaining or negotiation power. East African Nations and the Nile basin countries are synonymous with poverty. The 2015 Human Development Index (HDI) summarizes the average

²⁰⁰) BBC, US unlocks military aid to Egypt, backing President Sisi <http://www.bbc.com/news/world-middle-east-27961933> accessed on March 22, 2016.

²⁰¹) Global Firepower country military power reports <http://www.globalfirepower.com> accessed on March 22, 2016).

²⁰²) SIPRI Military Expenditure Database, http://www.sipri.org/research/armaments/milex/milex_database accessed on March 22, 2016.

achievement in key dimensions of human development by encompassing a long and healthy life, being knowledgeable and has a decent standard of living as yardsticks. This report ranked Egypt-108th, Sudan-167th, and Ethiopia-174th.²⁰³ In addition, the United Nations Millennium Development report of 2014, found out nearly a quarter of Ethiopia's population (i.e., about 98 million) lives under the poverty line. Their purchasing power parity (PPP) is less than USD 1.25 per day leaving many unable to cover their basic needs.²⁰⁴ This is an evidentiary that depicts the rampant poverty level in the region and countries are struggling to eradicate poverty and fulfill the United Nations Millennium development program goals.

On the other spectrum, development of water projects especially dams at the basin level requires nations to have a strong financial sources. These could not be raised domestically without external financial assistance such as the World Bank. Nevertheless, there are also certain prerequisites nations should fulfill to secure such funds from international donors. For instance, the World Bank's the OP 7.50-projects on the International Waterways stipulates: i) the state should prove that agreements and arrangements have been made between the beneficiary state and other riparians, ii) other riparians also should provide their consent or confirmation in supporting the project and it will not harm their water interest in the basin, or iii) in all other cases, in the assessment of Bank staff, the project will not cause appreciable harm to the other riparians, and will not be appreciably harmed by the other riparians' possible water use. Pursuant to this directive, a single disapproval of any dam project by any one of the member riparian states in a basin disqualifies the project's financial loan that could be secured from the World Bank.²⁰⁵

As Zeitoun and Warner (2006) noted, these international monetary donor institutions are not neutral or impartial in entertaining country's water project cases that makes them easily susceptible to be influenced by the aspirations of hydro powerful nations such as Egypt in applying their policies and deciding on the non-hegemon countries' financial support requests. As their policy analysis and recommendations are founded upon the bargaining and compromise between the stakeholders from which the powerful nations will always emerge as a winner in protecting their interests and blocking the financial sources of the non-hegemon countries.²⁰⁶ Hence, financial mobilization is the other best mechanism the hydro hegemon of the Nile Basin (Egypt) used to dry up the feasible international and donor country's financial sources of upstream countries' in their efforts to develop water projects on the Nile river. International institutions have been one of water diplomacy battle

²⁰³) United nations Development program, Human development Report, (2015). <http://hdr.undp.org/en/composite/HDI> accessed on March 14, 2016.

²⁰⁴) United Nations, "Millennium Development Goals Report 2014" <http://www.un.org/> accessed on March 14, 2016.

²⁰⁵) United Nations, "Millennium Development Goals Report 2014" <http://www.un.org/> accessed on March 14, 2016.

²⁰⁶) Zeitoun and Warner (2006), 449.

spot the Nile riparian nations fought for claiming and securing their water share interests in the basin by pondering on the international water law principles and their international political bargaining power as a playing card. In this aspect, Egypt has been successful in mobilizing international and regional basin wide institutions in her efforts to augment and maintain the hegemonic position on the one hand, and control the flow of the partial and aggregate amount of water development funds for other riparian on the Nile basin, on the other.

This trend appears to be changing, however. Up on the development of international river laws, tenets of equitable and reasonable use of water are employed by upper riparian states to challenge the bargaining hegemonic position of Egypt that founded on the principles of “no appreciable harm” and historical water share rights. The upper riparian nations claim and voting powers on the international spheres is upgrading to the limit that they could contest the Egyptian hegemony especially the real challenger in this case is Ethiopia. According to Zeitoun and Allan the most common and ordinary form of countering the established order is bargaining power. Thus, the hegemonic power of Egypt is being challenged by Ethiopia’s increasing bargaining power upstream.²⁰⁷

Furthermore, the emergence and involvement of China as a major economic actor in the development of hydro projects in the region is changing the region’s current status quo. In line with Swain and Jamali (2011), the upstream countries had been restrained from developing their hydro projects on the Nile owing to either lack of financial and technological capacity or their international financial sources are impeded by campaigns of the strong bargaining power of Egypt.²⁰⁸ Correspondingly, Ethiopia has staunch ambitions to utilize and develop her water potential in the basin since the early 1950s. The political instability and lack of technical and financial aid were the main impediments for the underperformance of the country in this sector. As per to Swain and Jamali, the persistent campaign of Egypt to inhibit Ethiopia’s financial feasible sources of water development fund from the international and regional donors such as World Bank, African Development Bank and the European Investment Bank, had been successful for decades. The recent presence of China in the region is also altering this paradigm in a way that Ethiopia is getting both financial and technological abutment from China to construct big dams and develop hydro projects without resorting to other international and regional financial institutions that could fail easily to

²⁰⁷) Mark Zeitoun, and J. A. Allan, "Applying Hegemony and Power Theory to Transboundary Water Analysis," *Water Policy* 10,no. S2 (2008), 11.

²⁰⁸) Ashok Swain and Qazal Jamali, "The China factor: New Challenges for Nile Basin Cooperation," *New Routes* 15, no. 3 (2011), 7.

Egypt's bargaining power lobby. For instance, Chinese companies mainly funded by the Chinese government constructed the Tekeze and Ameriti-Neshe hydro dams in Ethiopia.²⁰⁹

China's financial and technical supports in the development of water projects are not limited to Ethiopia but also extend to Sudan. For instance, Sudan constructed by Chinese assistance the Merowe hydroelectric dam that has a production capacity of about 1250 MW with a promising future irrigational use purposes. Sudan is engaging in the expansion of water pumping irrigation projects on the banks of White and Blue Nile with the technical and financial support of China.²¹⁰

The Chinese collaboration in the development of hydro dams in Ethiopia and Sudan are encouraging these nations to engage and accede to the development of unilateral hydro dam projects on the upstream countries without the provision of prior notification to downstream nations such as Egypt. The construction of the GERD is an extension and continuation of this trend in a way that Ethiopia decides solely to construct this big dam on the Nile by raising the local financial sources without resorting to international monetary donors and financial aid institutions. As the rising relative material, bargaining and ideation powers backed up by China's practical whole inclusive support provided the country confidence to build bigger dams even without external financial support.

Hence, China's involvement in the region has enhanced the bargaining power of upstream countries' in securing external financial and technical support sources, and relaying on domestic fund raising when the former fails to materialize.²¹¹ Considering the upstream country's geographical position plus their increasing bargaining power in general are serving as litmus for future fierce contestation and the culmination of the persistent Egyptian dominative hydro hegemonic bargaining power in the basin. With this recent developments (Cascao, 2009) holds that Egypt has already lost its de facto power specifically in making the financial sources of upstream countries from international institutions dry.²¹²

Fourth, ideational power. It is nothing but "the capacity of a riparian to impose and legitimize particular ideas and narratives"²¹³. In other terms, it is the ability to shape the perception of the people pertaining to the common resource distributive configuration both at domestic, regional (at the basin) and international level. This type of power is categorized as the least visible and

²⁰⁹) Swain and Jamali (2011), 7-10.

²¹⁰) Swain (2011), 699.

²¹¹) Swain and Jamali (2011), 8.

²¹²) Cascao (2009), 254.

²¹³) Cascao and Zeitoun (2010), 32.

identifiable form of powers of hydro hegemony as it is much interlinked to power over ideas rather than material manifestations. In line with Cascão's analysis, lack of knowledge and data sharing, or the uses of time, silence or ambiguity are some of the systematic approaches hegemonic states employ to manipulate other non-hegemon riparian states. In relation to this, Egypt has been employing delay of any water related negotiations on the basins water share that could contravene the persistence of the status quo of the 1959 agreement.²¹⁴

Moreover, the hegemonic ideation power of Egypt in the Nile basin is founded on the dissemination of the concept of "securitization". Buzan et al (1998), explained securitization as presenting an issue as urgent and existential so that it should not be exposed under normal political discussions but with top leaders with prioritization of other matters is required.²¹⁵ In our case, securitization of water resource ensues when trans-boundary waters are sufficiently critical to a state's survival that their allocation and/or modes of utilization become a matter of national concern and focus. Egypt considers any water related contestation in the region as a national threat and thus, water becomes the high political concern in the country's security policy. These kinds of water politicization accounts for the zero-sum political game by the hydro hegemon that could in turn be a cause for tension and conflict among the basin countries as it blocks water diplomacy at its inception stage.

216

Specifically, from the start there is a belief that the survival of Egypt relies on the Nile water resource by quoting and re-dubbing the phrases "the Nile is Egypt and Egypt is the Nile", and "Egypt is the gift of the Nile". The arid and semi-arid location of Egypt and the impracticability of conducting rain fed agriculture owing to the inadequate amount of annual rainwater (between 25mm in Cairo and 200mm in the country's southern part) make Egypt more than 90 percent reliant on the Nile River. Owing to this dependency on the river, Egypt has been securitizing the Nile water issue in the region by making it the top of her priority her political agenda. Equitable sharing claims by the upstream countries have been transformed to the national security threat by Egypt so as to quash or silence those claims and to flourish her historical water interests in the basin.²¹⁷

Egypt has been successful in establishing the ideation power at the international level from early periods of time. The Nile is inseparable and integral to the country's security and any diverted contestation of this fact from the upstream countries is cogitated to be a matter of controverting her

²¹⁴) Cascão and Zeitoun (2010), 32.

²¹⁵) Barry Buzan, Ole Wæver, and Jaap De Wilde, *Security: a New Framework for Analysis*. (London: Lynne Rienner Publishers, (1998), 27.

²¹⁶) Jägerskog and Phillips (2006), 13.

²¹⁷) Cascão and Zeitoun (2010), 32.

national security. Correspondingly, when Ethiopia started the construction of the GERD, Egyptian politicians affirmed this political narrative by holding “if Nile diminishes by one drop then blood is the alternative” and “No Nile- No Egypt” as Former Egyptian President Morsi and Former foreign Minister of Egypt Muhammed Kemal Amir stipulated, respectively.²¹⁸ Fischhendler and Nathan (2016) hold that “as part of agenda-setting facility of securitization, certain contextual conditions are needed to provide substance for the plausible and effective uplifting of a water issue into the realm of security”. They refer to these conditions as “triggers of securitization”.²¹⁹ In this illustration Egypt’s triggers of securitization conditions are related to reasons that any upstream countries’ water related projects on the Nile have repercussions on her historical water share interests and potentially causes of water scarcity in the country that is against her national interest and security considering her high dependence on the Nile. By the same token, the construction of the GERD is also part and parcel of Egypt’s national water threat concern as the statements of the above political figures affirm.

In consequence, Egypt has been the hydro hegemon in the region for decades by setting up such kinds of ideation power in the Nile basin system. However, upper riparian countries in general and Ethiopia in particular, have begun to resist and contest against this dominative ideation power by introducing their auspicious tenet “equitable and reasonable utilization” of water. The upstream countries employ this principle to strengthen and augment their ideation power to claim their share of water from the Nile and use it as a weapon to fight back against Egypt’s hydro hegemony. In this respect, they have been successful in incorporating this notion in the NBI and in the CFA as one of the basic negotiation agendas of water allocation issues in the region (see at chapter three). The role of Ethiopia in making this principle as the integral part of the initiative and basin wide agreement was magnanimous. Cascão (2009) assesses Ethiopia’s progressive achievement in building this bargaining strategy from two angles: the realization of all riparian countries to negotiate on equal level, and bringing the legal issue back (equitable and reasonable utilization) to the focal point of the basin-wide hydro political negotiation agenda.²²⁰ Those were the trends that provided concretized rational to Ethiopia to launch the construction of the GERD on the Nile in 2011 unilaterally.

²¹⁸) Ahramonline, Egypt ‘war’ talk raises Ethiopia Nile dam stakes <http://english.ahram.org.eg/News/73695.aspx> accessed on March 15, 2016); Ahramonline, 'No Nile, no Egypt', Cairo warns over Ethiopia dam <http://english.ahram.org.eg/NewsContent/1/0/73598/Egypt/0/No-Nile,-no-Egypt,-Cairo-warns-over-Ethiopia-dam-.aspx> accessed on March 14, 2016.

²¹⁹) Itay Fischhendler and Daniael Nathan, “The Social Construction of Water Security Discourses: Preliminary Evidences and Policy Implications from the Middle East,” in eds. Claudia Pahl-Wostl, Anika Bhaduri and Joyeeta Gupta, *Handbook on Water Security* (Cheltenham and Northampton: Edward Elgar, 2016), 82.

²²⁰) Cascão and Zeitoun (2008), 190.

As shown in chapter two and three of this thesis, Egypt and Sudan have a mutual stance and cooperation on Nile water issues. They both allege the natural, acquired, and historical rights of the Nile water resource and the two nations attempts to verify their rights by international water tenets of primary use, prior use, acquired water rights and non-appreciable harm to the downstream countries. In order to secure and protect her share of water rights granted by the 1959 agreement, Sudan champions the acquired and established rights in congruent with Egypt. However, Sudan has still complained about the amount of water share acquired as per to this agreement. The volume of water Sudan gained from the agreement was less than the country requested for and wants to access more to accommodate demands of her growing population. Sudan is inclined towards the principle of equitable and reasonable utilization of water for any future agreements in the basin systems as per to Waterbury (2002). Sudanese position towards constructing ideation power stems from the comparative advantages the country could secure from allaying with either the upper riparian nations such as Ethiopia or downstream Egypt.²²¹

For instance, Sudan supports the construction of GERD considering the future benefits of minimizing and regulating the floods of the Nile water through out the year and importing hydro electricity from Ethiopia. On the other side, Sudan is a proponent of Egypt in matters related to the CFA and Nile Basin initiative. Egypt is the dominant ideation power hydro hegemon in the region but upstream countries such as Ethiopia are efficaciously and insistently challenging this Egypt's power.

Considering Nile water as an intrinsic element of Egyptian life still extends to the present day. Recently, when the three nations made a deal on the GERD on March 23, 2015, Egypt's president Abdel Fattah al-Sisi reiterated the concept of securitization: "You will develop and grow and I am with you, but be aware that in Egypt the people live only on the water that comes from this river" which reaffirmed the Nile water is the only means of the Egyptian survival and security.²²²

However, Egypt appears to be reversing its water securitization policy and beginning to de-securitize it that could be proved by Egypt's recent compromises and agreements made with the upper riparian nations such as Sudan and Ethiopia. In this regard, the trilateral general agreement of March 2015 could be mentioned as an instance where the three governments vowed to the principle of not to cause significant harm, principle of equitable and reasonable utilization of the shared water

²²¹) Waterbury (2008), 130-131.

²²²) Reuters, Egypt, Ethiopia, Sudan sign agreement on Nile dam <http://www.reuters.com/article/egypt-ethiopia-dam-idUSL6N0WP1ZA20150323> accessed on March 23, 2016.

resource and regarding the operation and procedure of the filling of water for the GERD.²²³ The principles of this agreement are general in nature but they are evidentiary to clarify how Egypt has started to de-securitize the Nile water issue by engaging in such agreements that mainly incorporate the equitable and reasonable utilization of water resource of the Nile River. That provides the upper riparian nations the right to utilize their share, which was impossible and stifled by Egypt's hydro hegemony previously.

Egypt has manifestly been the hydro hegemon in the region because of its relatively strong, diversified, and well-integrated economic power in comparison to other riparian countries in the Eastern Nile basin system. Egypt's geostrategic position the Middle East has also created conducive environment to partner with the international community and the Western countries like the US. These circumstances have merited Egypt with financial aids from international donors and to block foreign water development financial sources of other upstream countries such as Ethiopia through political and diplomatic lobbying. Owing to these reasons and others discussed above, Egypt leads the Eastern Nile Basin nations in material power (including economic and military power), bargaining and ideation power. Nonetheless, Egypt is not dominant in terms of the geographic or locational power of which the country is surpassed by the upper and middle riparian nations of Ethiopia and Sudan, respectively. Additionally, in line with (Cascão 2009), the latter two nations are building their political and economic power position much stronger than they were a decade ago, which empowers them to contest the Egyptian hydro hegemony position in the basin. The increasing negotiation and ideation power of equitable and reasonable water use cumulated with their rising bargaining power due to the involvement of external financial and technical sources (i.e., China), equipped them well to counter the status quo hydro hegemonic power position of Egypt in the basin.²²⁴ These power alterations have enabled the upper riparian countries to conduct unilateral water development projects such as the GERD.

The next sub-sections comprehends how Egypt maintains he power?, what are these strategic mechanisms employed to maintain this position for these long periods of time? How do the non-hegemon states such as Ethiopia counter Egypt's historical hegemony?

²²³) Official text of the 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) <http://www.internationalwaterlaw.org> accessed on March 22, 2016.

²²⁴) Cascão (2009), 247-250.

4-2-2) Strategies of Hydro-hegemon in Eastern Nile Basin

International law is not efficient in regulating controversies over international river issues as expounded in chapter two. Egypt hydrological or geographical location is its natural destiny as a lower riparian hegemonic state. The power disparity between Egypt and all other riparians (especially Ethiopia and Sudan) has paved the way for Egypt to employ its power for ensuring other upper riparian states “remain weak, unstable, and underdeveloped and thus incapable of constructing large water projects” for decades²²⁵. Politics dominates the legal aspect in water share contestations in the Nile basin and Egypt utilized both overt and covert apparatuses over the non-hegemons to assure its incessant dominance in the basin system. For this Egypt used multiple strategies:

First, coercive compliance-producing mechanism, which is based upon military force or covert action and coercion.²²⁶ Egypt is the most powerful state in the region in terms of its military power as our above discussion clearly depicts and the country has been using this power to coerce any water based developments on the Nile by the upstream countries. Egypt has been very receptive to any upstream water related projects and efforts to utilize the Nile water with due focus on Ethiopia’s actions. As reiterated above, Egypt has warned Ethiopia that any impediment to the flow of Blue Nile waters will be seen *as casus belli* for Egypt repetitively.²²⁷ This was what happened again when Ethiopia began to divert the flow of the Nile River for the purpose of GERD construction, politicians in Cairo proposed to bomb the dam as they were discussing about the GERD issue in secrete. Though Egypt has not taken such military actions so far, her political leaders expressions on the matter is an indicator that Egypt has adopted the threat of military action on the dam as a coercive-pressure mechanism to pressurize Ethiopia from developing the GERD project farther.

Historically, there are some suspicions on the Ethiopian and Sudanese side that Egypt has engaged in providing military support for rebellions of the two countries.²²⁸ This allegation also works for the military equipment support Egypt was providing for Eritrean government and when the latter was at war with Ethiopia. The continued convergence of political, economic, military cooperation and the reciprocal visits of higher officials between Egypt and Eritrea recently, supports the argument that Egypt is still employing her ‘invisible’ power to compromise Ethiopia’s stability

²²⁵) Arun P. Elhance, *Hydropolitics in the Third World: Conflict and cooperation in international river basins*, (Washington, DC: US Institute of Peace Press, 1999), 66.

²²⁶) Elhance (1999), 66.

²²⁷) Kliot (2005), 74.

²²⁸) Kliot (2005), 74.

through Eritrea. The reason behind this is that the antagonistic relationship with Ethiopia, Eritrea is known for harboring and supporting Ethiopia's armed oppositions while the latter is doing the same to Eritrean oppositions. Hence, the military cooperation between Eritrea and Egypt emanates from the former's unresolved border dispute with Ethiopia and the latter's effort to divert Ethiopia's water development focus by destabilizing the country.²²⁹ By conducting proxy wars and providing military support to upstream countries' are adversary with are part of these types of Egypt's coercive producing mechanism to destabilize these nations so their water development agendas are diverted towards resolving their internal conflicts. This was also manifestly discussed as one of the covert action options Egypt's political leaders advising as a measure to be taken by President Morsi so as to halt the GERD construction.

Second, utilitarian compliance-producing mechanisms, which are a strategy to trade incentives through diplomatic recognitions, military protection and focusing on the shared interest of water projects. These types of incentive-based compliance mechanisms are the direct opposite scenarios of coercive mechanism.²³⁰ This is also part of Egypt's mechanism to preserve her hegemonic status in the region. This tactic has been implemented by Egypt in her relations with Sudan. Recently, following the construction of the GERD, Egypt reinforced its military, political and economic ties with Sudan and Ethiopia as manifestly replicated under the trilateral cooperation agreements made on March 24, 2015 and February 20, 2016. The latter pact particularly ponders on strengthening the relations of those nations based on their common interests and elaborates further to create a joint fund for the implementation of development projects.²³¹

Third, normative compliance-producing mechanism is related to the legal aspect of compliance mechanism in which Egypt has made to institutionalize her hegemonic position by entering and incorporating some of the stream nations such as Sudan in the 1959 agreement or by excluding the upper riparian nations in some agreements like Ethiopia. These agreements mainly adhere to Egypt's interests and ignore the interests of other riparian states.²³²

Fourth, the hegemonic compliance is another mechanism that Egypt most widely adhered to. It is one of recognizable tactics Egypt employed in the Eastern Nile Basin Nations. (Most of Egypt's

²²⁹) AllAfrica, Ethiopia: The "Nile Factor" and Pragmatic Opportunism in Egypt-Eritrea Relations <http://allafrica.com/stories/201410061115.html> accessed on March 28, 2016.

²³⁰) Zeitoun and Warner (2006), 447.

²³¹) Sudan Tribune, Egypt, Ethiopia and Sudan agree to enhance cooperation, <http://www.sudantribune.com/spip.php?article58075>, accessed on March 28, 2016; Aljazeera, Egypt, Ethiopia and Sudan sign accord on Nile Dam, <http://www.aljazeera.com/news/2015/03/egypt-ethiopia-sudan-sign-accord-nile-dam-150323193458534.html>, accessed on March 28, 2016 .

²³²) Zeitoun and Warner (2006), 448.

hegemonic compliance producing mechanisms is discussed with the four pillars of hydro hegemony section above).

Egypt's hydro hegemony strategies and its persistence in the region is the cumulative outcome of her tactics explicated above. Egypt's hydro hegemony could be summed up as a negative hydro hegemony in a way that Egypt exerted all of her dominative power on the whole part of the pillars of hegemony discussed above. Pursuant to Cascão (2009) "the combination of stronger material, bargaining and ideational power has allowed Egypt to develop a hydro-hegemonic status in the basin vis-à-vis the other riparians, and to maintain the regime that best served its national interests".²³³

However, the non-hegemon states of Ethiopia and Sudan have contested Egypt's command in the basin. Thus, they began to protect and/or secure their water interests against the hydro hegemon by developing their own counter-hegemony mechanisms and unilateral projects such as the GERD. Some of the counter-hegemony mechanisms are expounded below.

4-2-3) Counter-hydro-hegemony Strategies in the Eastern Nile Basin

Pursuant to Cascão (2009) deliberation, for the mere fact that there is a negative dominative hydro-hegemon in the Nile basin does not mean that this asymmetrical relation is uncontestable by the non-hegemons. Hence, the mechanism used by the non-hegemons to defy the domination of the powerful (hydro hegemony) in the basin system is called counter-hydro-hegemony strategies or tactics.²³⁴ Zeitoun and Warner (2006) hold that "states perceiving negative forms of hydro-hegemony may resort to a number of counter-hydro-hegemony strategies to improve their situation"²³⁵. Sudan and Ethiopia were not efficacious in their efforts to encounter the historical negative hydro hegemony of Egypt in the Basin due to economic, social and political restraints and instabilities discussed above. The recent internal and external economic and political changes in Sudan and Ethiopia have widened the chances to employ their various mechanisms to challenge Egypt's hydro hegemon in the region.

First, Sudan and Ethiopia have been known for their internal conflict, political instability and economic underdevelopment. Their economic progress and political stability have already been improved especially in the case of Ethiopia since the 1990s, empowering her material power further

²³³) Cascão (2009), 248.

²³⁴) Cascão (2009), 248.

²³⁵) Mark and Warner (2006), 448.

in the region. This paradigm shift supplemented by the financial and technical support of China has brought a change in querying Egypt's hydro hegemony in the region.²³⁶ Additionally, the recent growth of economic and material power strength of Ethiopia and Sudan is allowing them to develop their respective unilateral hydraulic infrastructures on the Nile basin without notifying Egypt which is also part of countering the hegemon in the region. Homer Dixon (2010) reiterates the reaction of individual farmers in Ethiopia in building micro-dams on the tributaries of the Nile River is tantamount to counter Egypt's hegemony in the basin.²³⁷ With the same analogy, there are a number of water projects that could be recited as instances of unilateral water projects developed by Ethiopia and Sudan as techniques to counter Egypt's hegemony and the GERD is the main and the most controversial instance in this respect. The domestic financial sources for the construction of this dam also witness the growing material capability of Ethiopia to challenge the hydro hegemony in the basin system.

Second, Ethiopia has successfully employed her bargaining power to influence hydro political relations in the region and achieved it by promoting multilateral legal and institutional frameworks that mainly encompasses the international water laws and norms. Ethiopia's recourse and influence over the negotiations of the NBI and CFA to validate the principle of "equitable and reasonable utilization" of the shared water resource have a positive double upheaval in protecting her water share interest and downplaying the previous Nile water accords that are detrimental to the upstream countries, on one side, and contesting Egypt's hydro hegemony, on the other side. Hence, the historic or acquired water rights of Egypt and Sudan are being contested by the upstream countries in general and Ethiopia in particular, by resonating their claims and reciting the international water law tenets such as "equitable and reasonable utilization". It is specifically this legal realm that guarantees the strength to Ethiopia to contest the status quo of Egypt's hydro hegemony and to proceed with her water projects.²³⁸

The third tactic is the exploitation of the presence of Chinese human (engineers), material and financial resources already available in the region in the construction sector. China's diversified financial and technical contracts do not require a prerequisite of other standards to be fulfilled (such as the concurrence of all the riparian countries on a certain water project on the common river basin) as stipulated in the World Bank water project criteria. This condition created unique prospects for upstream Nile riparian nations including Ethiopia and Sudan to utilize the support. This episode is moving Sudan and Ethiopia to engage in their new respective unilateral water

²³⁶) Cascão (2009), 245-268.

²³⁷) Thomas F. Homer-Dixon, *Environment, scarcity, and violence*, (New Jersey: Princeton University Press, 2010), 25.

²³⁸) Cascão (2009), 256.

projects on the Nile River without the need to consult the hydro hegemon Egypt on the matter that in turn tantamount to countering the established hydro hegemony of Egypt.²³⁹ This is also true for many water-based projects on the Nile basin by Ethiopia and Sudan. Though the lion share of the financial source of the GERD is domestically raised and the construction company in charge is not Chinese (instead it is Italian construction company called Salini-impregilo)²⁴⁰, the unilateral decision of Ethiopia to construct this dam is a logical extension of the other Ethiopian hydraulic projects supported by Chinese construction companies and funded by China's government. Hence, we can infer that the emergence of China in the region has a direct and ancillary influence on the GERD.

To conclude, Egypt is still the hydro hegemon in the region in terms of material power (economic and military), bargaining power and ideation power but not geographic power in which Ethiopia and Sudan has a better lead. Egypt is still striving to maintain the status quo of her negative dominative hydraulic command in the region by implementing a number of strategies and techniques explicated in the above discussions. The non-hegemons of the basin especially Ethiopia and Sudan are challenging this historical Egypt's hydro hegemony by applying various mechanisms of which engaging in unilateral water development on the common basin is a segment. Practically, Ethiopia commenced to erect the giant hydroelectric dam (GERD) on the Blue Nile in 2011 that triggers tensions (at least in the beginning) in the region. The contestation due to the GERD whether it becomes the ground for future conflict or cooperation is evaluated by employing Yoffe's event interaction intensity scale measurement by taking the major interaction events from media sources.

4-2-4) Eastern Nile Basin Nations Major Political Event Interactions after the Start of GERD Construction

The author of this thesis believes that consulting governmental policy documents and conducting interviews with the respective appropriate government officials would have also been ideal sources to assess the major interactions among /between these nations. However, this could not be achieved due to a lack of funding and other encumbrances. Instead, to fill the lacuna and address the main research question this study employed media sources that encompass two international media outlets (Aljazeera- <http://www.aljazeera.com> and BBC-<http://www.bbc.com>), three governmental media sources representing each country (Ethiopia - <http://wainfo.com>, Egypt- <http://www.sis.gov.eg>, and Sudan- <http://gmsudan.sd/en/>) and one private media that is selected for the reason that it propagates the regional matters with a better and wider perspective (I.e.,

²³⁹) Cascão (2009), 256.

²⁴⁰) Salini Impregilo, <http://www.salini-impregilo.com/en/> accessed on March 15, 2016.

<http://www.sudantribune.com>). The main rationalizations for selecting these media sources are: i) their popularity and provision of relatively credible information for their wider audiences, ii) their diversification in containing international, governmental and private medias and, iii) employing the governmental medias as a source assists the research to track each of the riparian countries' governmental positions on GERD issues. Besides, this research focuses on the facts as it only evaluates the interactions between these states in a way it avoids the feasible media biases of author's credibility and reliability questions out rightly. Besides the detail procedures of applying these sources were:

First, the time frame the data covers in this research has been delineated between 2011 and December 31st, 2015. Second, in each of these medias sources words such as “the GERD”, “Ethiopian dam”, “Egypt and Ethiopia”, “Sudan and Egypt”, “Sudan and Ethiopia”, “Ethiopia, Egypt and Sudan”, “dams on the Nile”, “cooperation in the Nile basin” and “conflict or tension in the Nile basin” were employed separately and/or in combination as a search engine phrases to filter out the relevant sources. Third, the contents of the data have been scrutinized to determine their relevance to the issue and to assure whether they are major events or not. Fourth, the contents of the data are also studied before their quantitative designation is assigned as per to Yoffe's yardsticks. Fifth, the date of the major event issued on the media, the multilateral or bilateral major interaction events and their sources are recorded on the tables below (see tables from 1-8). Six, the average interaction quantification for each bilateral or multilateral interactions have been calculated by summing up the whole year major interaction quantifications provided divided by the addition of the numbers of events. Their results for each bilateral and multilateral interaction events have been registered in a separate table (see the tables with double blue asterisks (**)) below). Seven, a chart that depicts the positive (cooperation) interaction or negative (conflictive) interaction have been drawn for each bilateral (between Ethiopia and Egypt, Ethiopia and Sudan, and, Egypt and Sudan) or multilateral (amongst Ethiopia, Egypt and Sudan) scenario (see the graphs 1-4 below). And finally, illustrations for those results have been provided separately before stepping to the conclusive remarks.

*****Note: Yoffe's conflict intensity scale measurement ranges between $-7 \leq x \leq 7$. The higher the score of the scale from 0 to 7 means the interaction between the states is more of cooperation and the durability of peace and security interactions between the states are progressive and guaranteed. While the lower the scale score from 0 to -7 represents the interaction is more tend to be negative or conflictive and as a result the peace and security of these nations is volatile and it might lead to war when the score is as low as -7. Further details of the methodology and procedures of how designation of the numbers conducted and other related issues have been discussed in detail under chapter one and in this section the thesis only focuses on elaborating on assessments and their results. This subsection interlinks the interaction of those nations on the one hand, and the implication of conflict and cooperation aspects of these interactions on the peace and security of the region (after the initiation of Ethiopia to build the GERD), on the other.

Table 1 -Major event interaction scale between Ethiopia and Egypt

Time of the interaction/event	Major interaction events between Ethiopia and Egypt	Conflict /cooperation intensity scale quantified as per to Yoffe et al.	Sources
02/04/2011	Former Ethiopian Prime Minister lays the corner stone of the GERD	0	http://walmartinfo.com
19/09/2011	Ethiopia and Egypt reach a deal over the Nile Dam	2	http://www.aljazeera.com
23/09/2012	Egyptian irrigation minister expressed their concern about construction of Ethiopian dam	-1	http://www.sis.gov.eg
04/06/2013	Egyptian politicians caught in on-air Ethiopian dam gaffe	-2	http://www.bbc.com
05/06/2013	Tripartite final report on Ethiopian Dam design deficit (President Morsi expressed Egypt will not cede any drop of water of its own share in the Nile River)	-2	http://www.sis.gov.eg

10/06/2013	``No force could stop Nile Dam project`` Ethiopia reply for the war threat from Egypt	-1	http://www.sudantribune.com
11/06/2013	Egyptian President warns against Ethiopian dam	-2	http://www.bbc.com
12/06/2013	Egypt escalates war of words over Ethiopia's Nile dam project	-2	http://www.sudantribune.com
12/06/2013	Ethiopia discards Egypt's threats over the Nile dam	-1	http://www.aljazeera.com
18/06/2013	Egypt and Ethiopia agree to bridge dam divide	2	http://www.aljazeera.com
12/07/2013	``Construction of the dam won't halt for a second`` Ethiopian Foreign Minister	-1	http://walmartinfo.com
19/07/2013	GERD never stop even for a second: Ethiopian Water and Energy Minister	-1	http://walmartinfo.com
20/07/2013	Egypt is concerned about Ethiopian dam	-1	http://www.aljazeera.com
22/07/2013	Ethiopian and Egyptian Foreign Ministers discuss Nile dam issue	1	http://walmartinfo.com
06/11/2013	Ethiopia: Egypt objections delaying the Panel	-1	http://www.aljazeera.com
20/11/2013	Egypt and Ethiopian leaders meet over Nile	1	http://www.aljazeera.com

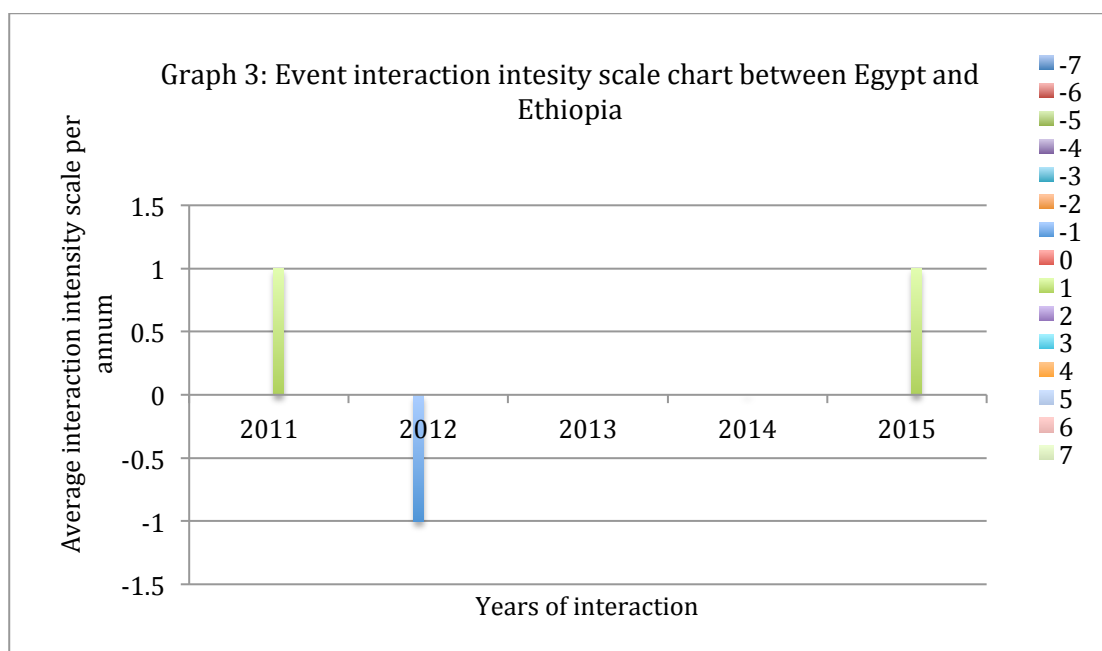
	raw		
23/12/2013	Egypt Irrigation Minister: still have time to deal with negative impact of Ethiopian dam	0	http://www.sis.gov.eg
11/03/2014	Ethiopia Minister of Water irrigation and energy ``we never glance at Egypt's cheap propaganda``	-1	http://walmartinfo.com
28/03/2014	Ethiopian dam an issue of no compromise: the dam is against Egypt's national security as it is more interlinked to the water security	-1	http://www.sis.gov.eg
03/04/2014	Foreign Minister of Egypt discuss about Ethiopian dam crisis with the UN chief	0	http://www.sis.gov.eg
07/04/2014	Egypt presidential hopeful threatens to use force over Ethiopian dam	-2	http://www.sudantribune.com
21/04/2014	Egypt to escalate Ethiopian dam dispute	-2	http://www.aljazeera.com
11/05/2014	Egypt Prime Minister expressed Ethiopian dam crisis to be solved through dialogue and economic cooperation	1	http://www.sis.gov.eg
23/05/2014	Egypt's stance on the Ethiopian dam is clear: securing the water	1	http://www.sis.gov.eg

	interests through negotiation		
27/05/2014	Egypt's presidential runner pledges to peacefully resolve dam row with Ethiopia	2	http://www.sudantribune.com
14/06/2014	Ethiopia welcomes Egypt's change of heart over Nile water row	1	http://www.sudantribune.com
29/08/2014	Prime minister of Egypt receive report on the Ethiopian dam talks	0	http://www.sis.gov.eg
04/09/2014	Colonial era Nile water agreements unfair: Ethiopian ambassador	-1	http://walmartinfo.com
04/09/2014	Egypt's foreign Minister visit Ethiopia for dam talks	1	http://www.sudantribune.com
06/09/2014	Egypt's Irrigation Minister receive invitation to visit Ethiopian dam	1	http://www.sis.gov.eg
03/11/2014	5 th Ethio-Egypt joint Ministerial meeting	0	http://walmartinfo.com
03/11/2014	Ethiopia-Egypt trade deals to ease River Nile row	4	http://www.bbc.com
03/11/2014	Ethiopian Foreign Minister expressed committee meetings on Ethiopian dam going well: cooperation between the two	2	http://www.sis.gov.eg

	countries in trade and investment field is also developing		
02/02/2015	Egypt's president and Ethiopian Prime Minister agree on further GERD coordination	2	http://walmartinfo.com
25/03/2015	Ethiopia and Egypt Vow to resolve their water dispute	2	http://www.sudantribune.com
09/11/2015	Egypt accuses Ethiopia of stalling talks on Nile dam project	-2	http://www.sudantribune.com

****Table 2 annual average event interaction scales between Ethiopia and Egypt**

Year of event interactions	Average of the interaction event
2011	1
2012	-1
2013	-0.71
2014	0.376
2015	1



From this graphic and chart analysis, one can deduce that the major interaction events between Egypt and Ethiopia were initially based on cooperation when Ethiopia started to construct the GERD in 2011. However, this positive cooperation scenario did not persist for that long. It was substituted by words of war on the Egyptian side and more political frictions and tensions were rampant in 2012 and their interaction reached the negative peak (-2) in some instances. The details of the event record on table (1) above displays negative outcomes after the diversion of the Nile water for the purpose of the dam in 2013. Later, the multilateral and bilateral discussions and negotiations on the details of the dam lead to the improvement of the interactions of the two nations as clearly indicated on the above table from (0.376) in 2014 to (1) in 2015. From this we can construe that the construction of the GERD created discord between the two nations initially. Especially, when Ethiopia took concrete measures such as the diversion of the river water for the GERD. Through time this was amended and replaced by cooperation agreements and dialogue between the two nations. Hence, the major interactions denote the progressive improvement and relative congruent stance on the GERD, which lead to the domination of cooperation between the two nations. This result disproves scholars position on the feasibility of future violent conflicts between the two nations because of the dam within the specified time frame of this study.

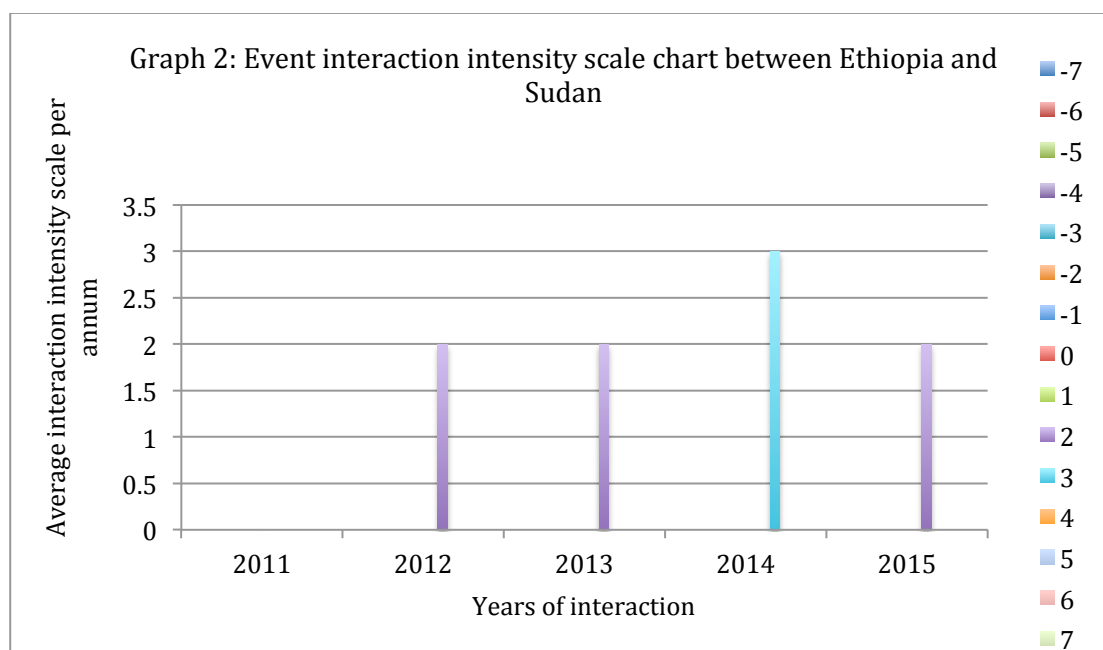
Table 3 major event interaction scales between Ethiopia and Sudan

Time of the interaction/ Event date	Major interaction events between Ethiopia and Sudan	Conflict /cooperation Intensity scale quantified as per to Yoffe et al.	Sources
05/04/2012	Sudan supports Ethiopia's Nile dam	2	http://www.sudantribune.com
10/08/2012	Ethiopia embarks on Sudan power supply testing	1	http://www.sudantribune.com
30/05/2013	Sudan downplays negative impact of Ethiopian dam	2	http://www.sudantribune.com
24/06/2013	Sudan and South Sudan diplomats voice in support of Ethiopian dam	2	http://www.sudantribune.com
30/06/2013	Ethiopia's Nile dam cuts Sudan's expenditure on siltation	1	http://www.sudantribune.com
01/05/2014	Sudan's Bashir affirm support for Ethiopian dam project	2	http://www.sudantribune.com
15/09/2014	Ethiopia and Sudan set to launch joint military operation	5	http://www.sudantribune.com
16/09/2014	Sudan's parliamentary speaker visits Ethiopia	1	http://www.sudantribune.com
21/02/2015	Ethiopia seek to convert common borders into integration zone	3	http://gmsudan.sd/en/
26/02/2015	Sudan's Minister of	1	http://gmsudan.sd/en/

	Interior meets Ethiopian Assembly speaker		
24/07/2015	Sudan seeks to purchase electricity from Ethiopia	2	http://www.sudantribune.com
16/09/2015	Addis Ababa praises Sudan for repatriating Ethiopian rebels	2	http://gmsudan.sd/en/
08/12/2015	Al Bashir says Ethiopian Renaissance dam become a reality	2	http://gmsudan.sd/en/

****Table 4 annual average event interaction scales between Ethiopia and Sudan**

Year of event interactions	Average of the interaction event
2011	No record found
2012	2
2013	1.6
2014	2.6
2015	2



As demonstrated on Table-3 and Table-4 above, all the major event interactions between Sudan and Ethiopia are positive ranging from (1) to a maximum of (5) when the two nations agreed to launch

joint military operations. In other words, the records demonstrate that their interaction after the construction of the GERD has always been positive (hence more inclined to cooperation). This concurrence between the two nations is increasing from time to time as shown from the above quantitative indicators of (2) in 2012 to (2.6) in 2014 and (2) in 2015. From these major interaction of the two nations, it is possible to contemplate that their interactions are always centered on collaboration and it is progressively improving. The construction of the GERD is strengthening their mutual interaction and interests between the two nations. Hence, positive results of their interaction also clarify the existence of a durable peace and coexistence between them. The main reasons for this are the benefits Sudan will incur from the GERD especially in controlling the flow of the Nile River and importing hydroelectric energy once completed. These returns compounded by cooperation agreements in other socio-economic sectors are reinforcing their pre-existed positive political diplomacy. Particularly, their recent military and economic agreements assure the continuation and expansion of this positive interaction.

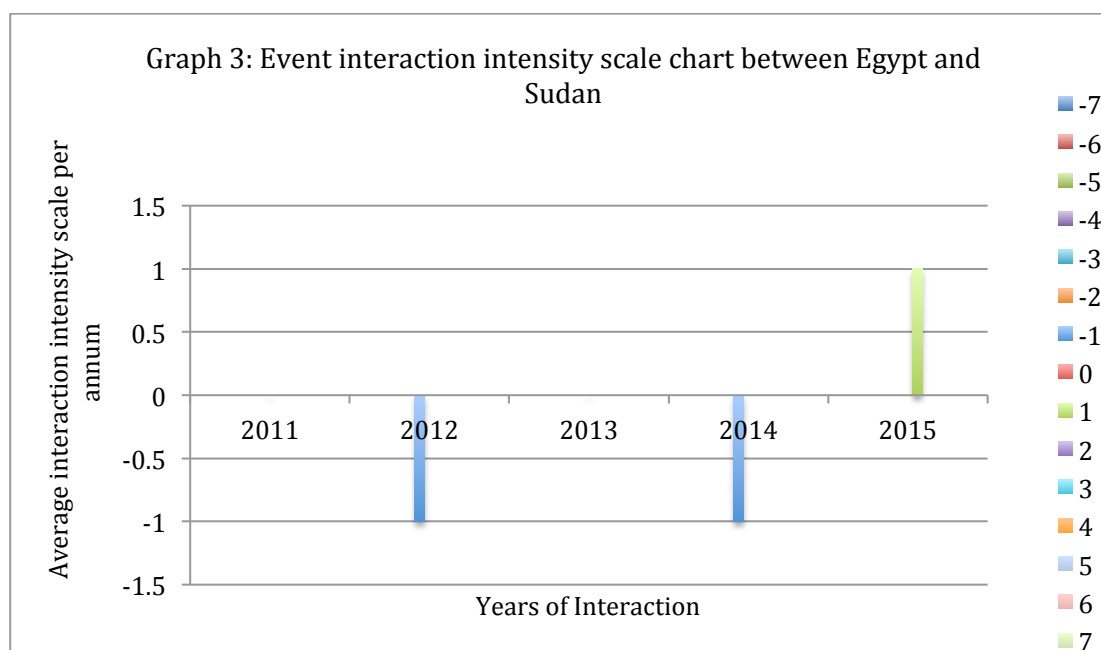
Table 5 major event interaction scales between Egypt and Sudan

Time of the interaction/ Event date	Major interaction events between Egypt and Sudan	Conflict /cooperation Intensity scale quantified as per to Yoffe et al.	Sources
25/09/2012	Egypt denies deal with Sudan to strike Ethiopian dam	-1	http://www.sudantribune.com
31/05/2013	Egypt and Sudan discuss the impact of Ethiopian dam	0	http://www.sis.gov.eg
19/02/2014	Sudan Foreign Minister criticizes Egypt over Ethiopian dam	-1	http://www.sudantribune.com
10/05/2014	Sudan slams Egyptian media's provocation over Ethiopian dam	-1	http://www.sudantribune.com

22/02/2015	Al-Sisi :I trust Al Bashir We have a lot to do jointly	1	http://gmsudan.sd/en/
14/04/2015	Al Bashir and Al Sisi meet in Egypt and discusses about economy and mutual relations	1	http://gmsudan.sd/en/
05/09/2015	Al-Bashir visit Egypt as his first external visit after inauguration	1	http://gmsudan.sd/en/

****Table 6 annual average event interaction scales between Egypt and Sudan**

Year of event interactions	Average of the interaction event
2011	No record found
2012	-1
2013	0
2014	-1
2015	1



Historically, Egypt and Sudan have had uniform and joint positions towards matters relative to the Nile river water resource issues. But the construction of the GERD coupled with other adverse

forms of political interactions between them turned their age-old affirmative diplomacy into partial tensions and negative interactions as the quantification of the above tables and chart exhibits. Particularly, their differences were evident in 2012 till 2014 that fluctuates with in an average interaction of (-1) on the intensity scale. In spite of the fact that their interaction was increasingly changing into positive as we can extrapolate it from the above records especially in 2015 it was (1). Likewise, the multilateral and bilateral dialogues and accords among these nations with respect to the GERD are continuing smoothly and this circumstance has a positive impact on their dual interactions. Their political relation is improving from time to time which in turn have an affirmative influence on the development of durable peace and trust-based interactions between them (the later event interactions positive number and continuous increment justifies it).

Table 7 major event interaction scales among Ethiopia, Egypt and Sudan

Date of the event Interactions	Major event Interactions among Ethiopia, Egypt and Sudan	Interaction conflict/cooperation intensity scale score as per to Yoffe et al.	Sources
25/09/2011	Ethiopia, Egypt and Sudan agreed on tripartite committee on Ethiopian dam	1	http://waltainfo.com
09/11/2011	Egypt's Minister of Communication and Information technology cooperation with the Nile basin is priority of Egypt	0	http://waltainfo.com
10/01/2012	Committee on Ethiopian dam begins to work	1	http://waltainfo.com
29/01/2012	Three way committee on the Nile dam meets at Addis Ababa	1	http://www.sis.gov.eg
28/02/2012	Tripartite meeting to talk over the Nile dam	1	http://www.sudantribune.com

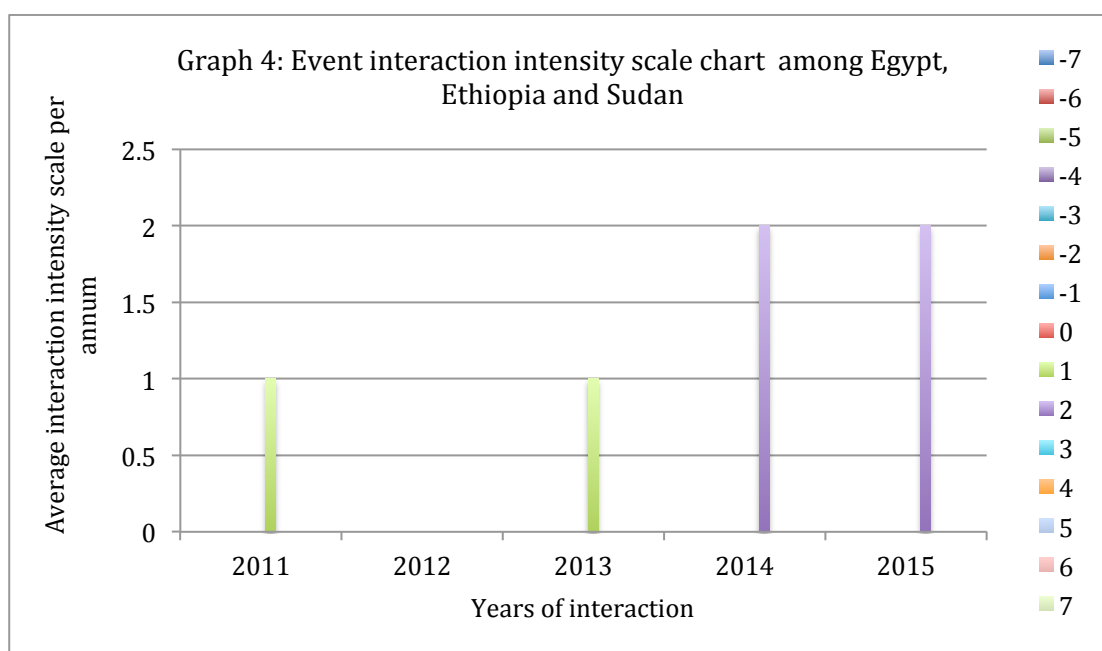
13/05/2012	Three way meetings probes Ethiopian dam construction	1	http://www.sis.gov.eg
13/09/2012	Nile Tripartite committee meets in Addis	1	http://waltainfo.com
10/10/2012	Tripartite committee on Blue Nile meets in Ethiopian capital	1	http://www.sudantribune.com
15/10/2012	Ethiopia, Egypt and Sudan to resume Eastern Nile basin cooperation	2	http://waltainfo.com
28/05/2013	Ethiopia diverts the blue Nile for controversial dam build	0	http://www.bbc.com
28/07/2013	Ethiopian Prime Minister expressed the capacity of GERD not negotiable	0	http://waltainfo.com
19/09/2013	Ethiopia urges Sudan and Egypt to implement panel's report on Nile dam	-1	http://www.sudantribune.com
11/10/2013	Downstream countries to hold talks with Ethiopia over dam	2	http://www.sudantribune.com
19/10/2013	Ethiopia seeks Egypt and Sudan support in key dam project	1	http://www.sudantribune.com
09/12/2013	Second round talk over Ethiopian dam continued	2	http://waltainfo.com
16/12/2013	Ethiopian, Egyptian and Sudanese panel to pursue technical studies on the Ethiopian Dam	1	http://www.sis.gov.eg
02/01/2014	New tripartite talk will resume in Sudan	1	http://waltainfo.com
01/09/2014	Egypt selects its experts to Ethiopian dam panel	0	http://www.sis.gov.eg

23/09/2014	Tripartite national committee to reexamine Nile dam	2	http://www.sudantribune.com
24/09/2014	Sudan, Egypt and Ethiopia agree on committee for Nile Dam	2	http://www.sudantribune.com
07/03/2015	Tripartite committee agreed on mechanisms for operating the Ethiopian dam	2	http://www.sis.gov.eg
20/03/2015	Nile water Committee discusses on a draft on Ethiopian dam	2	http://www.sis.gov.eg
23/03/2015	Ethiopia, Egypt and Sudan sign a deal to end Nile Dispute	4	http://www.bbc.com
23/02/2015	Declaration of principles on the Ethiopian dam signed by the three leaders	4	http://www.sis.gov.eg
24/03/2015	Ethiopia, Sudan and Egypt sign accord on Nile dam	4	http://www.aljazeera.com
24/03/2015	Nile water countries sign framework deal on the GERD	4	http://www.sudantribune.com
02/04/2015	Ethiopia, Egypt and Sudan to announce consultancy firms next week	2	http://walmartinfo.com
10/04/2015	Three countries select consultancy firms on Ethiopian dam	2	http://www.sis.gov.eg
11/04/2015	Egypt's irrigation minister reported appraisal on the meeting	2	http://www.sis.gov.eg
02/07/2015	Tripartite technical meetings on the Ethiopian dam started	2	http://www.sis.gov.eg
06/07/2015	Three Nile basin nations build confidence on	2	http://walmartinfo.com

	justifiable reasonable utilization		
19/07/2015	Sudan hosts the tripartite committee meeting on Ethiopian dam	2	http://www.sudantribune.com
22/07/2015	Egypt, Ethiopia and Sudan in new talks over the GERD	1	http://walmartinfo.com
19/08/2015	New round of Ethiopian dam talks continued	2	http://www.sis.gov.eg
18/09/2015	Tripartite meeting on Ethiopian dam continued	2	http://www.sis.gov.eg
23/08/2015	Tripartite committee to decide on the contentious points of the GERD	2	http://www.sudantribune.com
08/11/2015	Ethiopia says consultants failed to reach joint vision on the GERD	0	http://www.sudantribune.com
12/11/2015	Tripartite committee on the dam fails to resolve the dam issue	-1	http://www.sudantribune.com
04/12/2015	Tripartite meetings to discuss on technical issues on Ethiopian dam	2	http://www.sis.gov.eg
18/12/2015	Sudan Foreign Minister says recent meetings over the Nile dam achieved positive outcome	2	http://www.sudantribune.com
30/12/2015	Sudan, Egypt and Ethiopia reach agreement on Renaissance dam	4	http://www.sudantribune.com
30/12/2015	Ethiopia, Egypt and Sudan signed a new deal on Nile Dam	4	http://www.aljazeera.com

****Table 8 annual average event interaction scales among Ethiopia, Egypt and Sudan**

Year of event interactions	Average of the interaction event
2011	1
2012	0.08
2013	0.71
2014	1.5
2015	2.2



The event interactions among the three nations are positive and are even better comparing to the bilateral interactions discussed above (except the interactions between Sudan and Ethiopia). Like the bilateral interactions the study dealt them above, the multi-lateral interactions among those nations are progressively improving. That indicates the annual average interactions intensity scale designates positive increment such as 2011-(1) , 2014-(1.5) and 2015-(2.2), though it is decreased in 2012 to (0.08) and in 2013 to (0.71). In other words, the political tensions arose between Ethiopia and Egypt when the former redirected the flow of the Blue Nile water for the dam due to this fact their interaction intensity scale decreased in 2012 and 2013 to (0.08) and (0.71), respectively. There was also a controversy over the findings of the tripartite IPoE's report that impacted their interaction. Nonetheless, the signature of December 2015 tripartite deal about the GERD that took their interaction scale as high as (4) affirms that these nations are still exerting their full efforts to create cooperation in matters related to this dam. Additionally, their pacts on other socio-economic sectors are enhancing through time. Hence, the construction of the GERD is creating more and

more mutual based integration and cooperation among those nations in particular and in the region in general as the above data manifestly demonstrates. Hence, it is feasible to imply that this boosts the durability and perpetuation of peace and security in the basin system for the period covered by this study.

5) CONCLUSIONS

This study sought to answer the main research question “Does the construction of the Ethiopian Grand Renaissance Dam on the Nile cause more cooperation or conflict among the Eastern Nile basin nations?” In order to determine whether the construction of GERD is inducing cooperation or conflict among these nations, this study conducted a research based on framework of hydro-hegemony methodology as developed by Zeitoun and Warner (2006) and later updated by Cascão and Zeitoun (2010). According to the former authors, the analysis of this framework bases itself on refining and capturing two water conflict predictions together Frey’s (1993) power-analytic framework and Yoffe (2001) water conflict event intensities scale into one so-called the framework of hydro-hegemony. The reflection of hydro political power asymmetries and assessing conflict interaction intensities concurrently on this framework increased the accuracy of the outcome of the research. Thus, it also provides guidance to measure the current status of hydro-politics relations in the Eastern Nile countries.

The theoretical analysis of the study comprises two general chapters (chapter two and three) and the fourth main chapter. The second chapter dealt that international water law that governs states’ hydro-relations is at its infancy stage and lacks hard power to settle the possible conflicts arising between/among riparian nations over the utilization and apportion of shared water resources. However, its customary rules provide foundational tenets such as the right to use equitable and reasonable utilization, and the obligation not to cause harm on other co-riparians. Additionally, it imposes procedural duties embracing obligation to cooperate with other co-riparian states in providing the appropriate information and notify them about project developments on the common water resource. The study also showed that these developing customary international water rules are playing crucial roles in establishing soft/bargaining power of the riparian nations in a basin. The absence of strong water legal system at the international arena compounded by the increasing demand of scarce water resource are compelling these states to utilize their political and diplomatic power to twist and cite the international water law towards achieving state-centric political and economic benefit agendas. In this regard, Ethiopia’s assertion of her water projects by mentioning the Herman Doctrine, and equal and reasonable utilization of water, and Egypt’s adherence towards the historical acquired rights and duty not to cause significant harm notions, have been mentioned as instances. Hence, this chapter created a correlation between international water laws and hydro-politics (especially their role in augmenting soft powers of bargaining and ideation powers). The third chapter of the thesis discussed about the water relations in the Eastern Nile basin nations from political, historical and legal perspectives. This study revealed that the relations of those nations

have been mainly focused on hydro-politics. Additionally, water agreements entered both during and post-colonial period were not inclusive of the upper riparian nations. Instead, they have a common feature in validating the water share interests Egypt and Sudan, plus served to establish Egypt's hydro hegemony in the region. It has also been identified that there are still controversial water related matters created by these treaties that have not yet been resolved and have an impact on the present water diplomacy relations among these nations.

Moreover, the study points out the main reasons for the ineffectiveness of creating basin wide cooperation in the Nile as: First, the efforts of the NBI in addressing the core point of contentions between the downstream and upstream riparian are insignificant. Secondly, the introduction of the concept of equivocal terminology - "water security" under the CFA provisions made the gap wider and instigated position split between the upper and lower riparian countries. Third, the negotiation process in the NBI and CFA institutions lacks efficiency. Fourth, the construction of the GERD is at the moment serving as a cradle in changing the bellicose history debate and has profound effect on the interaction among these riparian states.

The theoretical analysis of chapter four found out that in terms of the four pillars of hydro hegemony power assessments, Egypt has a leading position in material, bargaining and ideation powers. Ethiopia surpasses Egypt and Sudan in geographic power due to her upstream position in the basin. Sudan has a relative better locational power position than Egypt. Observing the recent economic, political and social stability, the study shows that Ethiopia and Sudan are recording progressive change in their material, bargaining and ideation powers to the level they could contest and counter Egypt's hydro-hegemony in the region. This is also contributing to stiff contestations amongst these nations to control and claim their share rights over the Nile water resource. The analysis also suggests that due to these changes, competitions for water that had been stifled for ages by the negative hydro-hegemonic tactics of Egypt have proven to be culminated. This finding is in line with the arguments asserted by (Cascão (2008)) that holds the economic progress and political stability of Ethiopia and Sudan have already been improved. This change is conspicuous in the case of Ethiopia as the country is empowering her material power further since in 1990s. This paradigm shift supplemented by the financial and technical support of China has brought an alteration in querying Egypt's hydro hegemony in the basin.

In consonance with this, the study suggests factors amenable for the unilateral decision of Ethiopia to build the GERD as: change in the growth of economic and material power strength of Ethiopia, the failure of basin wide cooperation especially the NBI's underperformance in implementing

countries' individual water project plans under its auspices, and Egypt's securitization of Nile water issues which closes the door for dialogue and discussions on water share matters among these nations. These factors direct the upstream countries such as Ethiopia to develop their respective hydraulic infrastructures on the Nile basin without notifying and consulting Egypt. In other words, on the top of the dam's socio-economic benefit reasons, Ethiopia's unilateral decision to build the biggest dam in Africa (GERD) for the production of hydroelectricity on the Nile River is one of the main practical engagement tactics of the country in countering Egypt's hydro hegemony status quo. However, pursuant to Swain (2008), this policy of unilateral water development is both unsustainable and conflict inducing. Consequently, the reactions for the dam from Egypt and Sudan that arrays from avowal of full approval to threat of war.

Thereupon, the Yoffe et.al's water intensity scale methodology is employed to identify the conflict and cooperation interactions of Eastern Nile basin nations after the GERD. In general, this framework was developed to evaluate international river basins' at potential risk for future conflict by studying historical conflict and cooperation scenarios. Nonetheless, this study has harnessed the framework to fit the specific paradigm of addressing the research question by quantifying the major event water interaction of the three Eastern Nile basin states. To do so, data were gathered from five selected international, government-based and regional media outlets between (2011) when Ethiopia started to build the dam till the end of 2015 (see the details under sub-section 4-2-4 above). As per to this study, the interaction events among/between these nations demonstrate that: First, once Ethiopia started to build the dam the average interaction between Ethiopia and Egypt was positive (1) in 2011 that signifies cooperation. Though Egypt opposes the constructions of any water projects on the Nile by the upstream countries inclusively of the GERD, there were a positive signal to settle the discord through water diplomacy and dialogue as the inauguration of the International Panel of Experts (IPoE) confirmed. However, this positive interaction was replaced by disagreements and threats of war upon the diversion of the river water by Ethiopia, which raised tensions between the two nations as the outcomes of their interaction quantification demonstrate (-1), (-0.57) and (0) in 2012, 2013, and 2014, respectively. However, their interaction has returned to positive (1) in 2015, which implies the improvement of their cooperative interaction through time.

Second, quantity results of the thesis also attested that the interaction between Sudan and Ethiopia has always been positive designating the prevalence of cooperation between the two nations. This outcome of the study is in congruent with the theoretical analysis that explicates Sudan's full avowal of support to Ethiopia's dam. The main justification for their coherent relationship is that

Sudan will be benefited from importing hydro electricity power and yearlong regulation of flood of the Nile after the GERD is finalized.

Third, interactions between Sudan and Egypt shows quantity number of less than or equal to (0) for the years 2012 to 2014 that displays the discord and tensions between them. This clarifies the rule that these two nations have a united stance with respect to any Nile water resource related matters and the GERD is proved to be an exception in proving their explicit disparity on this issues of water for the first time. However, this interaction has been later altered to cooperation as positive number (1) in 2015 result approves.

Fourth, water intensity scale measurement of the three nations has demonstrated positive numbers through out the time frame covered. However, the positive scale number quantities have been diminished to (0) and (1) in 2012 and 2013, respectively. That signifies the political tension and discord especially between Ethiopia and Egypt when Ethiopia diverted the Nile water to construct the dam. This scenario proves the theoretical analysis and the position of Swain (2008) that the unilateral action of upstream countries in building water projects induces more tension and conflict among the sharing riparian nations especially when the lower riparian nations are more powerful than upper riparian nations, which is also true in our case. The political tension and threat of war mounted high between Egypt and Ethiopia during those periods as we can infer it from both the theoretical and quantitative discussions under chapter four.

However, the data collected to measure the interaction of these nations are limited to selected media outlets within specified period of time. The writer believes that this study only shows the partial pictures of water-based interactions among these nations. Thus, interviews of the appropriate political and professional personalities from these nations would have been further augment the clarity and predictability of the study (which this research fail to encompass them due to resource constraints). Besides, the construction of the GERD has not yet completed, water diplomacy and negotiations are still underway. The unpredictability of these states' interactions makes arduous to forecast the future prospectus of their interaction. These circumstances restrict the applicability of the research only to its specified time frame.

Nonetheless, the thesis has opened a new avenue in applying the Yoffe et.al's water conflict intensity scale to measure the conflict or cooperation of riparian states in specific water development project (GERD) in a particular basin system (the Nile). Hence, it will contribute for future basin-wide cooperation and conflict intensity studies by incorporating recent and upcoming

hydro-political and diplomatic developments amongst the basin sharing nations. Detail studies in the basin system plays a decisive role in absolving basin wide hydro-political controversies that in turn contributes for prospective regional integration, which currently lacks in the Nile. This study could also serve as a basis for future further researches based upon the implications of the GERD upon its completion on the regional cooperation and conflict scenarios by extending the time frame and increasing the number of countries involving in the case analysis such as South Sudan.

From all the qualitative and quantitative analysis of this research, it is feasible to suggest that the construction of the GERD on the Nile River is relatively paving the way for more prosperous water based dialogues to thrive in the Eastern Nile basin with in the time frame this study covers. It is also opening the doors for the enrichment of congruous political, economic and social relations among these states. Increasingly both the multi-lateral and bilateral interactions of the Eastern Nile nations signify the enhancement of state collaborations. Cooperative agreements not only on the GERD but also in other social, economic, military and political sectors, are also amplifying the development of trust and dependence among these states. The study has also witnessed Egypt's increasing de-securitization of Nile water resource matters especially the incorporation of equitable and reasonable utilization of water resources in the 2015 tripartite agreement and Egypt's continuing open water diplomacy about the dam verify. This shift will also play a crucial role in opening future dialogues among the basin-wide nations that in turn strengthen the regional integration to flourish. Hence, the forecasts of some scholars about the inevitability of war among these nations especially between Ethiopia and Egypt due to the construction of the GERD have been debarred at least for the time frame this study covers (as this study proves *a contraio*).

To sum it up, the evidences of this study suggests that the construction of the GERD is progressively germinal to open dialogue, trust building and cooperation on water share matters among these nations. This serves as a mechanism for the durability of peace and security, and regional integration in the Eastern Nile rather than inducing disputes and frictions. However, the GERD is still under construction, there are also issues related to it these nations have not yet settled them. Thus, looking at the future through rose-colored glasses, the GERD directs more to the bright and cooperative relations among these nations but it is still arduous to rely completely on the positive assertion. Because this study at hand has also revealed the complexity, at times unpredictability and tense hydro-politics relations and competitions of these nations especially after Ethiopia initiated the construction of the GERD.

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