**UNIVERSITY OF PIRAEUS**

DEPARTMENT OF INTERNATIONAL AND EUROPEAN STUDIES

# Transboundary water interaction in the Middle East and North Africa
# A case study of the River Nile Basin

This dissertation is submitted as a part of the

**M.Sc. in Energy: Strategy, Law & Economics**

by

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Piraeus, 2021

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## Abstract

This study analyzes the role of water in the geopolitics of the Middle East and North Africa focusing on the Nile basin. The main objective of the dissertation is to explore the dividing forces in the transboundary water interaction in the Nile and the way these can unify the basin-states. This involves, first, an analysis of the regional and international features of the basin which contributed to the narrative of water wars. Secondly, an application of the hydro-hegemony theory to identify how power and strategies established and maintained a hegemonic social order. Thirdly, an interpretation of the cultural concepts of the Nile to comprehend their unifying character. Fourthly, a description of the historical development of the legal agreements and institutions to assess their validity. A subordinate objective of this study is to examine the relationship between the geopolitical position and power of the riparian states through a brief analysis of the Jordan and Tigris-Euphrates basins.



**Keywords**: River Nile Basin, Hydro-politics, GERD, Events Data, Water Conflict, Cooperation, MENA

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## List of Acronyms

| | |
|---|---|
| ADB | African Development Bank |
| AHD | Aswan High Dam |
| CAR | Central African Republic |
| CFA | Cooperative Framework Agreement |
| CIDA | Canadian International Development Agency |
| CS | Copenhagen School |
| DRC | Democratic Republic of Congo |
| ECA | Economic Commission for Africa |
| ENCOM | Eastern Nile Council of Ministers |
| ENSAP | Eastern Nile Subsidiary Action Program |
| ENTRO | Eastern Nile Technical Regional Office |
| ERWR | External Renewable Water Resources |
| FAO | Food and Agriculture Organization of the United Nations |
| GAP | Great Anatolia Project |
| GERD | Grand Ethiopian Renaissance Dam |
| ICCON | International Consortium for Cooperation on the Nile |
| IR | International Relations |
| IRWR | Internal Renewable Water Resources |
| JMP | Joint Multipurpose Project |
| JMP | Joint Multipurpose Program |
| KBO | Kagera River Basin Organization |
| MENA | Middle East and North Africa |
| MW | Megawatt |
| NBI | Nile Basin Initiative |
| NBTF | Nile Basin Trust Fund |
| NCP | New Civilisation Project |
| NELSAP | Nile Equatorial Lakes Subsidiary Action Plan |
| Nile- TAC | Nile Technical Advisory Committee |
| Nile-COM | Nile Council of Ministers |
| Nile-SEC | Nile Basin Initiative Secretariat |
| NSADP | North Sinai Agricultural Development Project |
| OAU | Organization of African Unity |
| OFD | Owen Falls Dam |
| PJTC | Permanent Joint Technical Committee |
| RNB | River Nile Basin |
| SAP | Subsidiary Action Programs |
| SDG | United Nations Sustainable Development Goal |
| SVP | Shared Vision Program |

| | |
|---|---|
| TECCONILE | Technical Cooperation Committee for the Promotion of the Development and Environmental Protection of the Nile Basin |
| TRWR | Total Renewable Water Resources |
| TWINS | Transboundary Waters Interaction NexuS |
| UAE | United Arab Emirates |
| UNDP | United Nations Development Programme |
| UNECA | United Nations Economic Commission for Africa |
| UNEP | United Nations Environment Programme |
| UNWC | United Nations Convention on the Law of the Non-navigational Uses of International Watercourses |
| URT | United Republic of Tanzania |
| USBR | United States Bureau of Reclamation |
| WEIS | Water Event Intensity Scale |
| WMO | World Meteorological Organization |
| WSI | Water Stress Index |
| WTA | Withdrawal to Availability ratio |

# 1 Introduction

Thales of Miletus (c. 624-546 BC) considered water as the basic principle of all things capable of creating land and life. He underlined the importance of water even at the time when the Nile Delta was by far the most economically productive region in the Mediterranean. Then again, the study of water interactions in the Nile basin uncovers issues such as transboundary confrontation due to water-related matters, division of states according to cultural and legal disagreements, or population growth fostering water scarcity phenomena. Hence, it is questionable if water resources tend to foster joint efforts and defend life matters or generate dispute among basin-states. The special character of the Nile basin midst in the Middle East and North Africa region (MENA), makes the basin of an utmost academic significance.

**Focus of study**

This study focuses on the transboundary water interaction and the role of water resources in the River Nile Basin (RNB). It further emphasizes the driving forces which divide the basin-states and how can these be converted into unifying factors promoting basin-wide cooperation. The following topics are addressed: 1) the geographical and physiological aspects, 2) the unfolding of strategies, 3) the cultural and religious aspects and 4) the development of the legal and institutional initiatives over time. The temporal focus is during the years 1891 until 2015. The reason for the selection of this era stems from the timing of the legal agreements over the Nile basin, with the first legal agreements being established in 1891 and the latest in 2015. The study looks at the relations between certain actors in the Nile basin and not all riparians. Hence, the subject actors are Egypt and Ethiopia, due to the current and developing confrontation. The spatial focus is expanded including a brief examination of the two other significant basins of the MENA region, namely the Jordan and the Tigris-Euphrates basins.

**Significance of the study**

Finding out the reason and the causes of a conflict adds to the resolution process. This paper analyses water as a resource for renewable energy and the consequences this resource has on states sharing a common river. Today's development and exploration of this field is more significant than ever because of the high need for diversification of energy resources based on climatic protections and international policies. This topic gets higher attention in the Middle East and North Africa region because of its sensibility and complexity compared with other places in the world. This fact lays in the region's cultural and historical aspects, on its geopolitical features such as the dependency on conventional energy resources and the outmost interesting process of resource diversification in states with political and economic instability. This merge creates a hotspot of academic interest and this paper serves as an effort of analyzing the geopolitical role that one of the renewable energy resources, namely water, plays in the Middle East.

**Research questions and hypotheses**

The objective of this study is to explore two research questions. Based on the review of the literature and on empirical elements, the first question is analysed through four hypotheses. Each one of the hypotheses is thoroughly developed and analyzed in Chapter 4 (Section 4.1) including reasons, evidence, acknowledgments, and in some cases warranties. The second research question applies supplementary to the first research question and therefore includes one single hypothesis. As this does not apply as a part of the main research question, its analysis has been only limited to the purposes of comparison and support of the argumentation. This can be found in Chapter 4 (Section 4.2).

**Research question 1**: What are the dividing factors in the Eastern Nile basin and how can these be changed into unification of the basin-states and generate trust?

**Hypothesis 1:** Phenomena such as water scarcity and population growth increase the gap between water supply and water demand. Hence, any changes in the water allocation in a transboundary river basin can result in a division among riparians. However, expanding the political economies of each basin-state minimizes the negative effects of such phenomena and increases the confidence of the states to utilize alternative water resources. Moreover, the changes in the water allocation due to the construction of hydraulic infrastructure are influenced by the fundamental role of external actors as supporters of joint projects.

**Hypothesis 2:** Power asymmetries among basin-states indicate the existence of a hegemonic social order. A linear examination of this would consider that conflict is inevitable due to the upheaval of a counter-hegemony. A non-linear examination observes that both conflict and cooperation coexist. Therefore, despite power asymmetries, basin-states establish cooperative initiatives.

**Hypothesis 3:** Cultural differences among basin-states indirectly affect confrontation patterns. An understanding of the unifying cultural factors and a consolidation of religious aspects in regional or international water arrangements promote basin-wide understanding of water sharing and works as a trust generator.

**Hypothesis 4:** Inadequate legal arrangements and institutional initiatives divide rather than unify basin-states. This gap can be overcome with binding technical arrangements followed by basin-wide accepted principles and transboundary exchange of information with transparency.

**Research question 2**: What is the relationship between geographical position and power and how does this reflect on the regional balance of powers in the MENA region?

**Hypothesis 1:** Geographical position in a transboundary river basin does not reflect the hegemonic power of a basin-state. Other variables such as access to global support and its economic capacity are fundamental. Hence, in cases where a downstream or a midstream state is considered more powerful than an upstream is based on other factors and not on water allocation.

**Outline of the study**

The paper is composed of six chapters, which are summarized below.

**Chapter 1** forms the introduction of the thesis (pp. 8-10), including the focus and significance of the study, the research questions with their respective hypotheses, and the outline of the dissertation.

**Chapter 2** includes the literature review and the theoretical framework (pp.11-25). It demonstrates the literature on water resources in transboundary river basins analyzed through different theories of international relations. Its structure follows the argumentation of the research questions.

**Chapter 3** describes the methodology (pp. 26-27) which explains the approaches used for the study and how the gathered data have been found and analyzed. The chapter explains also the limitation of the study.

**Chapter 4** provides the main results and analysis (pp. 28-87) of the study. It consists of two bigger sections; the main analysis on the Nile (see 4.1, pp. 28-81) and the brief analysis of Jordan and the Tigris-Euphrates rivers, only for comparison purposes with the Nile (see 4.2, pp. 82-87). Both major sections have respective introductions and conclusions, which are to be found on pages 28 and 80-81 for the Nile and on pages 82 and 87 for the other two rivers.

**Chapter 5** includes the conclusion (pp. 88-89) of the dissertation and refines the research questions and the hypotheses of the study. It provides the concluding comments of the study and potential future research areas.

**Chapter 6** provides the bibliography (pp. 93-101) which was used and analyzed for the development of the research.

# 2 Literature review and theoretical framework

This chapter involves an overview of the research that has been already conducted in the field of the geopolitics of the Middle East and more specifically in the role of transboundary rivers as generators of conflict and cooperation. It demonstrates the theories of international relations (IR) in the field and serves as the fundamental theoretical framework. The literature is structured according to the outline of the research questions and their hypotheses. Therefore, after an overview of the IR theories, the first section discusses the conflict catalysts as demonstrated by realism and its critic from the Marxist approach upon hydropolitics. This revolves around the role of political economy in hydropolitics, as researched by Jan Selby. The second section discusses the literature on the hypothesis that power asymmetries serve as a dividing factor among the riparian states in the RNB according to the theory of hegemony and counter-hegemony. This would be connected with the securitization theory and the *Transboundary Water Interaction NexuS (TWINS)*, developed by the Copenhagen School (CS) and Naho Mirumachi. The third section discusses the literature on the hypothesis that cultural differences impede competitive scenarios among riparians. Under this perspective, the potential of "bringing them together" will be analyzed. The fourth section discusses the literature on "water cooperation" through treaties and institutional building, as seen from the liberalist school of thought.

**An overview of the theories of International Relations for transboundary water interaction**

Since the 1980s, the understanding of "security" undertook major changes. One of them was the breadth of the term including not only the survival of the state through military action but a range of levels such as economic issues or environmental problems. After the cold-war era, new domains of security came up to the surface such as environmental security and more specifically energy security. These domains formed a new balance of power and the study of these issues adds to the comprehension of IR. Critical approaches challenged the mainstream and provided a new theoretical framework for the analysis of state behavior regarding transboundary water issues. During the 1980s and 1990s realism, liberalism and the "neo" versions of them (neo-realism, neo-liberalism) were the domain theories in the academic world. The narrative of the former was "water conflict "and of the latter "water cooperation". Despite their dominance in international relations, there has been a developing implementation of critical approaches in the field. Their main difference is ontological. As the mainstream theories argue that the examination of the social world can be observed and analyzed like the natural world, the critical approaches claim that theories cannot be separated from the social world rather they construct the way of thinking (Baylis et al., 2016).

Table 1 serves as an overview of the international relations theories and how their application analyses hydropolitics. As presented, the critical approaches answer the question "what drives hydropolitics" not state-centric as realism or liberalism do, but with the analysis of social constructions such as social discourses, exploitation, or religion. The table also presents the recently developing literature regarding power asymmetries in transboundary water conflicts, counter-hegemony, and coexistence of conflict and cooperation.

**Table 1** International relations theories and their implications in the study of hydropolitics

| What drives hydropolitics? | | | | | | |
|---|---|---|---|---|---|---|
| **Factors** | **Characteristics** | **Initial theory** | **Theoretical branches** | **Characteristics** | **Relevant advancements** | **Characteristics** |
| **a. Riparian states** | -Nationalization of water resources<br>-Treaties to maintain order<br>-Anarchic system<br>-Water conflict for power | Realism | Neo-realism | -Political mistrust<br>-Security dilemma<br>-Increase of relative power<br>-Balance of powers | - | - |
| **b. Individuals** | -Transnational Interdependence<br>-Cooperation and absence of war<br>-Formation of rules and norms | Liberalism | Neo-liberalism | -Formation of basin-wide institutions to promote water cooperation | - | - |
| **c. Invented social constructions** | “Water wars/peace” are made up of discourses and narratives | Constructivism | Securitization | -Social construction of an existential threat (e.g., water scarcity) | TWINS approach | Coexistence of a conflictual and cooperative relation |
| **d. Exploitation** | Colonialism “is to blame” | Postcolonialism | Orientalism | European prejudices identified middle eastern nations | - | - |
| | | | Dependency theory | -Ongoing colonialism<br>-The South depends on the North | - | - |
| | -Colonialism/racism does not influence rather its class inequalities<br>-Water in the political economy framework | Marxism | Gramscian Hegemony theory | -Power asymmetries and riparian position<br>-Hydro-hegemon vs. counter-hegemon | The riparian position is irrelevant to power | - |
| **e. Religion** | Differing beliefs trigger hydro-conflict | (Integration of religion in IR) | - | - | - | - |

## Realism in transboundary water interaction

This section discusses the way that water resources have been considered as a cause of conflict among states which share a transboundary river. The analysis is divided into two different literature sets. The first literature set combines water shortages and geographical phenomena with conflict and the second literature set explains water conflicts as an outcome of hydraulic infrastructure construction.

### The literature on water conflicts and water wars

Water conflict and water war do not depict the same thing. On one side, realism as one of the most applicable schools of thought in transboundary water arrangements is capable of proving the existence of water conflicts but with different intensity levels. The World Events Interaction Survey developed by McClelland et. al. (1971) and further enhanced by Goldstein (1992) is one example of an effort to quantify qualitative data and illustrate mathematically the conflict intensity. A more recent example is the work of Yoffe et al., (2003) who enclosed options of cooperation in the conflict intensity scale.
Moreover, belonging to the mainstream IR theories, classical realism developed a notion of the "tragic" nature of international politics, arguing that inter-state politics lacks any overarching sovereign arbiter who is able authoritatively to repress the inexorable drive for power and the natural human tendency towards aggression (Carr, 1946; Morgenthau, 1948). Under neo-realism, a more rigorous and parsimonious model of classical realism, the international system is anarchical, but also the structure of the system is determined by the distribution of power between states (the *Balance of Powers*), and the internal nature of the state (i.e., whether it is democratic or authoritarian) has no material structural impact on international relations (Waltz, 1979). The major points of both realism and neo-realism in hydropolitics compared to other theories of IR have been demonstrated in the previous Table 1.
On the other side, the literature on water wars derives from a post-cold war academic domain which linked security with environmental matters. The initial narrative of water wars is findable in the article of Joyce R. Starr (1991). In his article, Starr argued that in a case where the states neglect the increasing water shortages in the MENA region and the Gulf then water will become a strategic issue with military consequences. A similar narrative was used by Bulloch and Darwish (1993) where water wars were caused by a growing demand and limited supply. This literature focused on water shortages as a driver of conflict. Their point was that increasing population results in increasing water demand. This fact along with unequal distribution of water resources has a high possibility of causing water war in regions with the same characteristics (Biswas, 1994; Clarke, 1991; Falkenmark et al., 1989; Gleick, 1993; Homer-Dixon, 1994; Swain, 1996). This "environmental scarcity" as described by Homer-Dixon (1994, p.8-11), occurs for scarce, vital, and physically capturable resources, such as water, and has the potential to cause conflict in transboundary river basins. The Nile is one of these river basins.
In the broader concept of international level, Pelletiere (2003) argued that the reason that America's impetus to invade Iraq was to control Iraq's waters and to proceed with the possibility of the Peace Pipeline which would have brought the waters of Tigris and Euphrates through the Gulf states and Israel. Cooley (1984, p.3) argued that "long after oil runs out, water is likely to cause wars, cement peace, and make and break empires and alliances in the region".

Moreover, the distinguished phrase of the former President of Egypt Anwar Sadat during the signing of the peace accord with Israel in 1979 “The only matter that could take Egypt to war again is water” depicts also a connection of water shortages with security issues.

The majority of the literature about water wars has centralized the Middle East and North Africa as a crucial region where conflict is inevitable. There has also been very limited literature on water wars in other regions. An example of this would be the paper of Ça and Güler (2018) where the authors conclude that conflict in Central Asia is inevitable due to limited water resources and increased concern on water resources.

**The critical approach of the Marxist tradition; the integration of the political economy**

Criticizing the mainstream realistic school of thought, the tradition of Marxism emphasizes the structure of the international system, with particular attention on the geopolitical distribution of power and the geographical location of resources, seeking to identify the connections between the various levels of conflict in the spectrum set out in the dependent variables.

In transboundary water relations, Selby (2005) criticizes the dominant narratives of water wars and water cooperation by the demonstration of an alternative approach to water issues in the Middle East. In his findings, water does have a great impact on livelihood and inner-state relations, however, if viewed by the lens of political economy water cannot be seen as a cause of war. The political economy of the middle eastern states is based on oil export and its economic importance is not comparable to water. Selby concludes that water cannot be seen as a cause of conflict or cooperation but rather as a consequence. Regarding the imminent concept of water scarcity, Selby argues that it can cause only local conflicts in the Middle East rather than among states.

**Hydraulic infrastructure as a conflict catalyst**

An enormous number of scholars have studied the effects on the relationship among riparian states due to the construction of a hydroelectric powerplant in transboundary rivers. The findings have been differential with some arguing that hydraulic infrastructure serves as a conflict catalyst and others arguing that the hydraulic projects aim at the mitigation of negative phenomena and are a must for the upstream countries because of climate-change driven factors. However, the analysis of a third variable, namely the role of external actors, gives inspiring conclusions on the purposes of hydraulic infrastructure.

On the one hand, some authors, based on the realistic depiction of international politics as a stage where the riparian states (main actors) attempt to maximize their security levels to protect what they already attained, describe the transboundary river basins as *Common pool resources*. LeMarquand (1977) explains that the unilateral use of the common pool resources subtracts from the total benefits available to the other basin-states. Kibaroglu et al. (2011) resemble this with a great powers’ “zero-sum game”. Referencing Hardin (1968) and the concept of the *Tragedy of the commons*, in case that the rivals do not agree, they are more likely to destroy the resources than each other.

On the other hand, some argue that common pool resources as private goods can also be privatized and utilized through hydro-infrastructure. For example, Waterbury (2002) argues that any upstream water infrastructure project in a transboundary river basin will not eliminate the resource but the quality and quantity of the water will be unilaterally reduced. The connection of hydraulic infrastructure with social and environmental phenomena is widely accepted and analyzed in the literature. Some scholars argue that any agriculture and irrigation schemes (such as the construction of dams), water-saving, and recycling aim only at the mitigation of negative phenomena such as droughts, poverty, and hunger (Salman, 2019). Moreover, Swain (2011) argues that a water war or a water conflict can only happen in the case when the water supply is being sabotaged. Thus, in the case of the Nile River, the supply is not being sabotaged through the Grand Ethiopian Renaissance Dam (GERD), and it would be wrong to suppose that the construction of this dam is considered a cause of a conflict (Swain, 2011). In cases where the upstream countries reduce the flow of the Nile because of irrigation (due to the increased demand caused by an increase of population) then this indeed can create a conflict. However, the use of a dam only for electricity production without water-storing for irrigation cannot be considered a cause for water war or water conflict. Aljefri et al. (2019) discuss that the geopolitical changes, due to the announcement and beginning of the construction of the GERD in Ethiopia in 2011 intensified an existing conflict over water resources but it can also create a new era of collaboration. Exploring climate-induced hydrologic perturbations some authors argue that climate change increases the risks for Egypt which can be only reduced through an effective collaboration with Ethiopia on the GERD (Basheer et al., 2018; Wheeler et al., 2016).

Despite the literature that suggests that the GERD is a beneficial opportunity for the Eastern Nile countries against the increasing risks of climate change and rising population, there is still a reason why others remain suspicious about it. This is explained by the benefits of the GERD not to the region but in the international environment too. This is analyzed through the examination of the role of external powers in the operation and construction of projects in the Eastern Nile. This literature focuses on the level of Superpolitics and more especially on the influence of China as a supporter of the GERD and the influence of Israel in its relationship with Ethiopia (Abd Al-Hay, 2020; Albert, 2017; Bishku, 1994; Salman, 2019; Samaan, 2017; Swain, 2011; Tawfik, 2015; Whittington et al., 2014; Yasii, 2016). According to this literature, the relationship in the Nile basin remains conflicting and mostly related to the realism theory. They consider possible scenarios, due to the uncertainties of the project and its implications downstream. It is supported that the role of external actors should be the supporting of projects with long-term sustainability increasing regional integration and jointed among riparian, not supporting projects that are considered causes of tensions among riparians (Tawfik, 2015).

## The literature on power asymmetries

The second hypothesis that cooperation among the riparian is influenced by the dividing factor of “power asymmetries” observable in the Nile basin is based on the literature on the theory of hydro-hegemony and counter-hegemony. Moreover, because of the influence of the social international context, the literature review includes the analysis of the TWINS framework, developed by Naho Mirumachi and

John Anthony Allan, based on constructivism's theory and the CS. Their work explains that conflict in transboundary river basins is not possible without the simultaneous existence of cooperation.

**The theoretical concept of hydro-hegemony**

The basic hypothesis of the theory of hegemony is that "the man is not ruled by force alone, but also ideas" (Bates, 1975, p.351). Antonio Gramsci studied the role of intellectuals in society and broke down the Marxist *superstructure* into two other floors. The first one is the *Civil society* and the second one the *Political society*. The former contains the institutions, or the "private organisms", which contribute to the formation of social and political consciousness. The latter (also known as *the state*) contains the public institutions which exercise "direct dominion". According to Gramsci, an independent class of intellectuals can exert their power over both floors but with different methods and succeed in creating a "hegemony" (Bates, 1975). The hegemony is a success when "the rulers" extend their world view to "the ruled" and thus they receive free *consent* of the masses to the law and order of the land. In other words, when a state wants to pass an unpopular opinion to the masses, creates an adequate public opinion that organizes and concentrates certain elements of civil society. When the hegemony fails, then it uses a different mechanism to discipline those who does not consent.

Translating the Gramscian hegemony theory into transboundary water relations, the current hydro-hegemonic approaches provide a useful and analytical paradigm for examining the options of a hegemonized basin-state and the ways of turning domination into cooperation (Zeitoun & Warner, 2006). The first option, or *Strategy*, is *Resource capture (RC)* which is exercised through ("tactics") such as "military force", "covert actions", "coercion pressure" and "active stalling". Under the resource capture strategy, the hegemon can also use *Coercive sources* such as international support. The second strategy that the hegemon can exercise is the *Containment (C)* strategy which involves "incentives" and/or "treaties". The third strategy available to the hegemon is the *Integration (I)* strategy which revolves around "knowledge construction" and "sanctioning the discourse" (Zeitoun & Warner, 2006). These strategies are based on three *Compliance-producing mechanisms*, developed by Etzioni (1975) and a fourth added by Lustick (2002). Lustick's formulation about the compliance-producing mechanisms is based on Etzioni's (1975) observations. Etzioni suggested that the compliance-producing mechanisms to the decisions of organizations or states are three; *Coercive*, *Utilitarian*, and *Normative*. However, Lustick continued the thought and added the fourth mechanism which is the *Ideological hegemony*. According to him the beliefs about the socio-economic arrangements or interventions in the society are sources of power and can elicit compliance more than the normative mechanisms (Lustick, 2002). Inspired from the "noble lie" in Plato's Republic and from the work of Antonio Gramsci, Lustick defined ideological hegemony as beliefs which are imputed in a society to naturalize actions, to perceive events and make a judgment as if these beliefs were common sense. The goal of mechanisms and strategies is for a state to achieve consolidated power. Lukes (2005) and Zeitoun (2008) categorized the three dimensions of power. *Structural power* is the "power as might", in other words, the ability to possess and mobilize military might, economic and political support. *Bargaining power* refers to the "power as a relationship", meaning the ability that the hegemon has to

narrow the alternatives of the weaker state (Lukes, 2005). The hegemon can exercise *Ideational power* in cases where he can shape perceptions to receive compliance.

The power asymmetry among riparians is consolidated and stalled by the hegemon in his effort to achieve control over the water resources. Indeed, "the more power a state has, the more tactics are available to it and the more able they are to deploy" (Zeitoun 2005 in Carles, 2006, p.12).

The hydro-hegemony theory describes a dynamic relationship among riparians rooted in an inequitable international context without a universally acknowledged international water law. Most of the time it results in negative-sum outcomes because of the power asymmetry between the hydro-hegemon and the other riparian. This instability remains and is legitimized by the consent of co-riparians (Cascão, 2009, Zeitoun and Warner, 2006).

Zeitoun et. al. (2017) based on the work of Cascão and Zeitoun (2010), Cascão (2008) (which is also based in International Relations and International Political Economy see e.g. Cox, 1983; Tilly, 2003, 2000) argues that when a riparian state complies with an already formed social order then this is either maintained or re-enforced. This social order can be hegemonic through the formation of transboundary waters institutions and it builds the status quo of a state. In such a social order, a relative shift of power is only possible when the consent to the order is broken (*Contest*). The contestation of a hegemon is called *Counter-hegemony* and is later on discussed. The established social order is also known as "water arrangements". According to Zeitoun et al. (2017), the water arrangements are characterized by the *Co-existence of conflict and cooperation* (Mirumachi, 2015) and are influenced by "useful forms of conflict". The "destructive forms of cooperation" (Zeitoun and Mirumachi, 2008) are influenced more by "soft" power than "hard" (Zeitoun et al., 2011) and exhaust many spatial and administrative levels (Warner 2005 in Zeitoun et al., 2017).

Recent critic of the concept of the hydro hegemony refers to the ambiguities of the process of possession and outcomes, or in other words "the mechanisms of water injustice" (Zeitoun et al., 2014).

**The theoretical concept of counter-hegemony**

Another evidence that supports the hypothesis of division among the riparians is the theory of counter-hegemony. In the RNB, a unilateral construction of hydropower infrastructure signaled a strategic opportunity for the co-riparians to proceed to an establishment of a new water regime in the basin (Cascão & Nicol, 2016). Such an action was connected in the literature as a tactic of counter-hegemony. The theoretical framework of counter-hegemony is different from the one of resistance. A distinction is made by Fraser (1995). The main difference is that resistance does not want to transform the established social order but rather improve its entitlements. The counter-hegemony aims at the transformation of the established order.

The contestation of a hegemonic order requires also contestation mechanisms such as Coercive, Leverage, and Transformative. *Coercive mechanisms* include the use of threat or force to sabotage the hegemonic social order. In the case of transboundary water interactions, a coercive mechanism could also be the "non-participation" in formal or informal institutions and a "disobedience" of the social order (Zeitoun et al., 2017). *Leverage mechanisms* aim to transform or resist to a hegemonic order by increasing the influence of the counter-hegemon. This refers to the formation of "alliances", taking

"initiatives" on hydro-diplomacy issues, "contesting legal frameworks" using international law principles, and finding alternative funding options for infrastructure projects (Zeitoun et al., 2017). The third mechanism refers to *Transformative mechanisms* which aim at the overthrow of the hegemon and transformation of the social order either to something new or to something similar to the hegemonic order. The tactics used include "alternative vision" and "alternative knowledge construction".

The contest of the hegemonic order starts with counter-hegemonic tactics, which lead to counter-hegemonic movements and if they are well organized can lead to counter-hegemonic strategies (Zeitoun et al., 2017).

Despite all this, one should acknowledge the remaining question if the counter-hegemon aims to create a hegemonic position for itself. This is answered by Warner (2007 in Zeitoun et al., 2017) who argues that the contestation of a hegemony takes three different forms. The first form is very similar to the previous hegemon, only with a different actor on stage. The second form is the creation of a counter-hegemony that provides an alternative ideology from the previous hegemon. The third form is an escape from the cycle of hegemony and counter-hegemony by the creation of a state of an *a-hegemony*. Acharya (2008) claims that in such a state there is no hegemonic actor for a long time but there is always the threat of a creation of a new hegemony.

This creation of a new hegemony is reinforced by scholars which suggest that the GERD as a counter-hegemonic tool could lead not necessarily to an equitable water regime based on shared benefits but rather to an unstable social order with contested control (Tawfik, 2015).

**Hydro constructivism in transboundary water relations**

As previously discussed, the mainstream approach of realism focuses on conflict as a separated outcome caused by states. Wendt (1995), criticizing the mainstream approach of realism (and liberalism which is further on discussed), points out that the outcomes are often influenced not only by states (the first factor) and individuals (the second factor derives from the liberalism theory) but also from the social context of international relations (the third factor). The constructivist approach emphasizes the social interactions which shift actor's ideas, identities, and interests in a cooperative or hostile direction (Krasner, 1982; Wendt, 1992). Constructivism includes the role of non-state actors in the analysis of IR, which can use ideational and bargaining power to suit their interests (Conker, 2014).

Translated in transboundary water relations, constructivism argues that the upstream states can create a discourse that suits their interests to regime formation. This created regime formed by the upstream state is based on the international context. One example of this is the 1997 United Nations Convention on the Law of the Non-navigational Uses of International Watercourses (UNWC). This is considered from a constructivist approach as "dyadic" because it can serve cooperatively but also conflictingly. This is because of the conflicting principles of *absolute territorial sovereignty* for the upstream country and *absolute territorial integrity* for the downstream country.

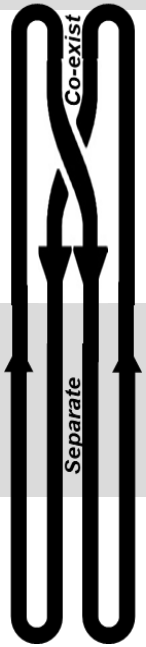
Based on such dualities, Mirumachi and Allan (2007) explored a new approach to analyze conflict and cooperation in transboundary water relations. Their conceptual approach of TWINS included apart from conflict and cooperation a third factor, the political economy. They found out that conflict and cooperation co-exist and that the "shifting intensities" of this co-existence define the relations in river basins

(Mirumachi and Allan, 2007, p.7). They add that in order for a water allocation in river basin to be considered “successful”, it should include these intensities and the changing of the political economy over time. The high level of the diversity of the political economies and their strength is a major factor that contributes to the diversification of water resources such as virtual water and the development of technology. They conclude that in asymmetric situations, the strongest riparians “dictate the pace of cooperative adaptation and engage in fake cooperation that dresses up domination as cooperation” (Mirumachi and Allan, 2007, p.18). It is considered that the coexistence of conflict and cooperation conceptual approach is promising for the analysis of the intra-basin dynamics (Hussein & Grandi, 2017). Moreover, Zeitoun and Mirumachi (2008) review the transboundary water conflict and cooperation literature and conclude that the TWINS framework proves that in the majority of context conflict and cooperation co-exist and it uncovers cooperative situations which may involve different levels of conflict.

**Overview of the conceptual frameworks of hydro-hegemony and counter-hegemony**

The theories of hydro-hegemony and counter-hegemony share characteristics which derive both from the mainstream and critical approaches of IR, in other words, they are “eclectic”. The scholars associated with the London Water Research Group have provided a comprehensive exploration for the resolution of transboundary water interaction mostly in the MENA region and also Asia. The dynamic frame of transboundary water interaction can be distinguished in two bodies. The first one is the literature based on compliance, contest, hegemony, and counter-hegemony. The second one is the literature based on the change in social orders and the role of power for the status quo. An overview of the former concept is demonstrated in Table 2. This table presents a categorization of the compliance-producing mechanisms available to the hegemon and the *mechanisms of resistance and counter-hegemony* available to the counter-hegemon. It serves as an overview of the tactics and the strategies that each side has, to reach the goal of *consolidated control* for the hegemon and the goal of *transformation of the social order* for the counter-hegemon. For example, the hegemon has available four mechanisms to produce compliance with the existing order. These are, 1) coercive compliance mechanism with tactics such as military action, or stalling of the procedures 2) utilitarian mechanisms, such as the production of incentives to motivate 3) normative mechanisms such as the support of binding treaties and securitization of the resources and 4) ideological mechanisms which include knowledge construction. Using these mechanisms and tactics, the hegemon can create an *open consent* (or *apparent consent*) to the social order and naturalization of it. On the other side, the counter-hegemon has available three mechanisms, 1) *coercive* 2) *leverage,* and 3) *transformative*. The use of each of these mechanisms results either in a direct resistance in form of counter-hegemony or resistance, or a *veiled consent* (Zeitoun et al., 2017). The figure in the middle of the table shows that compliance and contest co-exist at the level of the first mechanism (coercive). After that, the actor that contests the hegemon uses different mechanisms. The relationship cycle shows that after a point the actors who represent the hegemon and the counter-hegemon could exchange roles, however, compliance and contest remain. The purpose of this illustration is to show that the transboundary water interactions are not linear but a constant “give-and-take” between the hegemon and the counter-hegemon.

**Table 2** Strategies, mechanisms and relationship between Hegemony and Counter-hegemony

| **Strategies and Mechanisms** | **Hegemony** | | Relationship Cycle | **Counter-Hegemony** | |
|---|---|---|---|---|---|
| **Goal** | Consolidated control | | | Transformation of the hegemonic social order | |
| **Resource Capture Strategy (RC)** | **Coercive compliance mechanism** | Tactics:<br>Military force<br>Covert actions<br>Coercion pressure<br>Active Stalling |  | **Coercive resistance and counter-hegemony mechanism** | Tactics:<br>Violence, sabotage non-participation, disobedience<br>Infrastructure construction<br>Strategic cooperation |
| | Coercive sources | International support | | Coercive sources | International support |
| **Containment Strategy (C)** | **Utilitarian mechanism** | Incentives | | **Leverage mechanism** | Funds mobilization<br>Alternative vision & agenda |
| | **Normative mechanism** | Treaties<br>Securitization | | | |
| | Coercive sources | Financial mobilization<br>Human capital | | Coercive sources | Financial mobilization<br>Human capital |
| **Integration Strategy (I)** | **Ideological mechanism** | Knowledge construction<br>Sanctioning the discourse | | **Transformative mechanism** | Alternative discourse<br>Alternative transboundary water arrangements<br>Alternative knowledge |
| | Coercive sources | Riparian position | | Coercive sources | Riparian position |
| **Reaction** | **Open consent, assimilation, internalization** | | | **Direct resistance, veiled consent, counter-hegemony** | |

Source: Data from Zeitoun and Warner, 2006; Zeitoun et al., 2017

Table 3 presents the dimensions of power for the actors and their effect on the status quo and in the social order. Zeitoun et al. (2017) named this concept as the “theory of change”. As presented, both the hegemon and the counter-hegemon can use firstly structural power to possess capabilities (“power as might”), secondly bargaining power to influence other riparians (“power as a relationship”), or thirdly ideational power to construct perceptions (“power in the realm of ideas”). In most cases, the hegemon uses *Bargaining power* and the counter-hegemon mostly *Ideational* and bargaining at times. The hegemony aims to produce compliance and reform a social order using “influencing” power. On the other hand, the counter hegemon aims at the contestation of the hegemony, transforming the social order using “challenging” power (Zeitoun et al., 2017).

**Table 3** Dimensions of power and their effects

| **Dimensions of Power** | | **Hegemony** | **Counter-hegemony** |
|---|---|---|---|
| **Structural** | Features | *Power as might* (coercive power, material power) | |
| | Ability to... | …possess and mobilize capabilities (military, economic, political might, etc.) | |
| | Frequency of use | low | low |
| **Bargaining** | Features | *Power as a relationship* (influence, legitimacy) | |
| | Ability to... | …influence others | |
| | Frequency of use | high | high |
| **Ideational** | Features | *Power in the realm of ideas* (manipulation, knowledge construction) | |
| | Ability to... | …shape perceptions and determine the "established order of things" | |
| | Frequency of use | low | high |
| **Type of Power** | | **Influencing** | **Challenging** |
| **Effect on Status quo** | | Compliance | Contest |
| **Social Order** | | Reforming | Transforming |

Source: Data from Lukes, 2005; Zeitoun and Warner, 2006; Zeitoun et al., 2017

The concept of hegemony and counter-hegemony doesn’t exclude the possibility that the strategies and mechanisms used by states are not “pre-made” but rather an outcome of the respective developments in the international and regional field. The concept as illustrated by Zeitoun et. al. (2017) presents a constant loop among contest and compliance which means that the starting point of the loop would be an already existing conflict on transboundary water relations. Such a paradigm applies to the MENA region. However, it cannot be assumed that this paradigm is global-basin-wide applicable because then it would be raised the hypothesis that every transboundary water interaction is at its core conflictual. This thesis does not examine the global application of the theory of hegemony but it could be a fertile ground for further analysis.

## The literature on cultural aspects

This section analyses the literature upon which the third hypothesis has been based. This refers to the cultural differences which act as dividing factors among the states of the Nile basin. This is viewed not only from a religious perspective but also from a historical dependency perspective.

### The integration of religion in IR

Religion is a relatively new variable in the study of international phenomena. Up until the end of the cold war, there was a very small amount of academics who added cultural differences like religion in the analysis of international affairs. Sandal and James (2010) made an effort to integrate religion in the theoretical frameworks of classical realism, structural realism, and neoliberalism. Among their findings, was the need to accommodate religion in the IR as it has the potential to add new answers in the study of dynamics of international power and affairs. They pointed out the necessity of this concept despite the theoretical limitation of such an application.

In transboundary water relations, Oestigaard (2009) through the exploration of historical texts analyses the role of the Nile river in the shaping of beliefs among Islam and Christianity. In his findings, he points out that "the religious control and interpretation of the Nile was also a political one and a source of both theological and secular conflicts" (Oestigaard, 2009, p.162). This is based on the different religious backgrounds that identifies each country. In other words, between the downstream Muslims and the upstream Christians. Oestigaard (2009) insists on the fact that both religious traditions share an enormous heritage of similarities, despite their superficial differences.

The connection of international affairs with religion has been also demonstrated by Mason (2004). Using a model developed by Baechler (1999), he argues that religion is one of the factors that are capable of influencing both conflict and cooperation in an international river basin. This is based on the fact that a conflict in a transboundary river basin lays under the area of environmental conflict management. This area does not only focus on the root causes of a conflict but also other factors which interact with each other. These factors are categorized by Baechler as "target" (the aim of conflict parties), "trigger" (initiate an outbreak), "channel" (group identification, among others, is religion), and "catalyzers" (other influences from the international environment which can intensify a conflict or cooperation). According to this literature, religion is considered to be a channel that can indirectly affect the result of a transboundary water interaction towards cooperation or conflict.

The use of religion in IR has been also supported by Mallat (1994). Using a factor-analysis approach, he analyzes the tradition of international watercourse law and the Islamic legal tradition to enrich the debate on water-sharing. In his finding, he points out that it is important to consider the schemes that Shari'a has to offer in the resolution of water rights as this is a tradition which has been historically longer than international law and topologically more relevant as international law. Mallat points out the importance of the Nile river which is capable of "bringing together perspectives which have been traditionally opaque to each another" (Mallat, 1994, p.381).

### The theoretical concept of postcolonialism

The influence of the interference of the colonial powers in the internal political scene of the middle eastern states has been analyzed by Edward Said (1978). His work on “Orientalism” is based on the epistemological distinction between “the Orient” and “the Occident” and refers to Orientalism as a western-style of dominating the Orient. Said focuses on the asymmetrical power relationship between the “strong west” and the “weak east”, a fact which results in exploitation. Said discusses the role of religion, mostly the duality between Christianity and Islam and the deceptive idea that Islam opposes to the Christian west. Most importantly, Orientalism poses the paradox that the Arab nations are still “dependent” on western civilization as a consequence of colonization.

One of the efforts of this thesis is the connection of Orientalism to transboundary water interactions, to answer the hypothesis that the failure of any cooperative model in the Middle East and North Africa is a phenomenon based not only on opposed religions but also on the states’ past of being represented by the western civilization. As a result, the riparians with a history of representation by a western power still need to take regional issues like transboundary water issues for a resolution to an international level or stay attached to colonial agreements without any interest of renegotiation of them with co-riparians.

In other words, middle eastern states follow a *Dependency path*, as developed by dependency theorists. This theory argues that the global south is under the domination of the global north. Ray Hinnebusch in his book *The International Politics of the Middle East* (2003) claims that the middle eastern economies “exhibit many of the classic features of dependency” (Hinnebusch, 2003). These features are, for example, dependence on a few basic export commodities which makes the middle eastern economies dependent on the core, or a repressed national autonomy from western states and multinationals. However, one should acknowledge the “leftovers” of this colonial influence. For example, without the colonial influence, Egypt would have never been able to shape its hegemonic position in the Nile and enjoy for almost a century monopolistic rights upon the Nile waters.

## Liberalism in transboundary water interaction

According to the liberal IR theory, especially its branch, the neo-liberal school of thought, an emphasis should be given to the strengthening of cooperation through democracy, international institutions, or a liberated and open global trade. Similar to realism, neo-liberalism argues that anarchy and international phenomena of war exist, however, they could be avoided with the formation of regional and international institutions which adopt cooperative behavior and promote win-win solutions (Baldwin, 1993; Keohane, 1978). Because the conduction of foreign policy is different in democracies and authoritarian states, the so-called “democratic-peace” evolves (Russett et al., 1995). Under the neo-liberal school of thought arose the field of Water Diplomacy or Hydro-Diplomacy which identified three major challenges in the global environment (Pohl & Schmeier, 2014). In the first place, the international energy community lacks political leadership for hydro-diplomacy. This is necessary to realize the alliance between political and technical actions. For example, the construction of dams can provide a technological solution to water scarcity but also negative environmental and political implications especially transboundary implications. To mitigate the negative effects and a potential conflict between transboundary states, a diplomatic

intuition and agreement is required. In the second place, the actors at the national level need to have a better coordination in terms of technical and political energy issues. The state should be represented with a united opinion at the international level. In the third place, a solution for better transboundary water cooperation would be a human, institutional and financial investment in Hydro-Diplomacy (Pohl & Schmeier, 2014).

International energy politics under the liberal school of thought, are summed up under two major sets of works. The first set of work is the literature of the *Dark Underbelly* of the international energy industry, which describes the three perversions of the politics, seen from the liberal perspective, such as firstly the *resource curse*, a phenomenon caused by the *Dutch disease*, explaining the poor developmental records on resource-rich developing states, secondly the *Rentier state*, an authoritarian regime in a resource-rich state which undermines civil society and promotes the executive power without restraints and thirdly the *Resource Wars* or the *New wars* which are the breakdown of patrimonial states into warring factions aiming to the predation of natural resources and the rents (Dannreuther & Ostrowski, 2013). The second major set of work of international energy politics is the reverse side of the dark underbelly identifying the liberal policy prescriptions of "what needs to be done" to generate a more open and cooperative set of arrangements in the international management of the international energy industry (Dannreuther & Ostrowski, 2013).

In a transboundary river basin, upstream-downstream interactions are characterized by cooperation and do not escalate to the point of water war (Allan, 2002; Deudney & Ikenberry, 1999; Homer-Dixon, 1994; Selby, 2005). This has been further explained by Wolf (1998). He developed the "no water war approach" and supported the narrative of cooperative water resources management. Among other authors who support the development of cooperative water management, Blackmore and Whittington (2008) created a computer-simulated model about the RNB water resources and found out that regional cooperation is necessary to maximize economic benefits. The idea of abandoning a state-centric water development approach and developing sustainable cooperation is generally promoted in the literature (Gebreluel, 2014; Kucukmehmetoglu & Guldmann, 2016; Mason, 2003; Salman, 2013; Swain, 2011; Yihdego & Khalil, 2017). Especially in the case of RNB, there are some views that support the idea that legal agreements based on international watercourse agreements or regionally adopted could promote bilateral or multilateral cooperation (Abseno, 2013; Block et al., 2007; Salman, 2016; Scheumann, 1998). Others defend the works of regional water institutions, such as the NBI as capable of generating developmental benefits at the operational and technical level (Knaepen & Byiers, 2017).

**The narrative on water cooperation**

In the literature, there is the opinion that transboundary water issues are explained better from liberalism than from realism (LeMarquand, 1977, Kibaroglu et. al., 2011). The absence of water wars and the vast majority of agreements regarding international water resources is one example. There is, however, the situation where the agreements provided some states with asymmetrical power compared to other riparians, or formation of water institutions that prolonged an existing asymmetrical relationship without bringing tangent cooperation. Such situations stalled cooperation in the benefit of a riparian and

simultaneously there was no war caused. These are found in the literature as *Upstream-downstream conflicts*, where upstream or downstream countries use cooperative methods supporting outwardly the image of “good neighborly” and promoting developmental goals to balance the military capabilities of the other upstream or downstream state (Kibaroglu et. al., 2011). Especially regarding the cases of dam construction and the flow of a river downstream, upstream states embrace the principle of *limited sovereignty* instead of the principle of absolute territorial sovereignty. The former takes into account the obligation not to cause any *significant harm* to downstream users, engaging in prior consultation and embracing the principle of *equitable and reasonable utilization* recognizing the need for upstream development (Benvenisti, 1996; Wapner, 1998). The narrative of equitable and reasonable utilization has been mostly promoted by supporters of upstream development in the RNB (Abdulrahman, 2019; Tadesse, 2008; Tesfaye, 2001b).

Despite this, the narrative on water cooperation lacks a systemized and organized international legal framework on international water issues. The UNWC is considered to be one “discursive template” which gives the potential to upstream countries to form regimes (Kibaroglu et. al., 2011). The document provided the general obligation of equitable and reasonable utilization (Article 5) and the obligation not to cause significant harm (Article 7) without guidelines for practicing these principles. The Convention failed to provide systematization of the challenging duality between upstream countries favoring the absolute territorial sovereignty and the downstream countries the absolute territorial integrity (Kibaroglu et. al., 2011). However, it brings to the surface the prevailing principle of limited territorial sovereignty, which entails the interests of upstream countries of equitable utilization of water and the obligation to consider the downstream *acquired rights* (Gleick, 1993 p.106; Waterbury, 2002, p.28). It is considered that the Convention creates on one hand disputes among the riparians and on the other hand is a positive contribution that provides a comprehensive and promising framework for cooperation in transboundary river basins (Abseno, 2013; Scheumann, 1998). The conflicting relationship between the two principles provided in the UNWC requires “accommodation and compromise on the part of all parties”(Waterbury and Whittington, 1998, p.166).

# 3 Methodology

The objective of this thesis is an effort of conducting geopolitical analysis with a case study. This includes firstly a geographical analysis of the Nile River including its physiological characteristics. The geographical region under study is the Middle East and North Africa, therefore within the geographical context is also included the Jordan and the Tigris-Euphrates River. The two latter rivers will be briefly discussed in geographical and political context because of the comparative objective of the study with the Nile River. Secondly, the papers focus on a political study analyzing the relations of the states in the transboundary river basins in order not only to determine the causes of conflict and cooperation with regards to water but also to analyze the power distribution at a regional level. Thirdly, the study aims in using this geopolitical factor analyzed in the second stage outside of the geographical area to determine if any regional destabilization of power can be also transferred in the international environment. The methodological analysis is based on the distinction of the *Sub-system* (in this case, the Nile river), the *System* (in this case, hydro-politics), and the *Supra-System* (in this case, Middle East and North Africa) (Mazis, 2017).

The reason why the geographical analysis of this paper is the MENA area is mostly because of the sensibility of the region with water issues. The under-research states will be those who share the same water resources and where the potentials of conflict and cooperation are high. Therefore, as the Middle East will be discussed Turkey, Iran, Iraq, Syria, Lebanon, Jordan, Israel, and Saudi Arabia and as North Africa is Egypt, Sudan, and Ethiopia under discussion. Whereas, Ethiopia does not belong geographically exactly to the term North Africa but it is of utmost research importance. The focus lays on the case study of the Nile basin because of its individuality as a transboundary river basin and its current and ongoing importance and development.

**Approaches and methods**

To answer the research questions, this paper uses three methodological approaches. The first and most extensive one is the qualitative approach based on secondary research. The data used are literature-based. More specifically, the data required were, firstly, an extensive literature review on IR theories, including mainstream and critical approaches. Secondly, historical data were used to analyze the evolution of the relationship among the riparian states in the RNB and the other selected basins.

The second methodological approach is an effort to quantify qualitative data. In other words, the conversion of events in a transboundary water basin to time series was used to measure the conflict intensity in the geographical region under study. The data required for this approach has been adapted from Yoffe et al. (2003). Their work on the Water Event Intensity Scale (WEIS) focuses on water interaction events and encloses cooperation to the database (World Events Interactions Survey) developed by McClelland et. al. (1971) and further enhanced by Goldstein (1992, see Appendix 2).

The third methodological approach is the application of the TWINS framework in the Nile basin and more specifically in the relationship between Egypt and Ethiopia. The purpose of this is to illustrate the coexistence of conflict and cooperation.

The methods used for the investigation of the research questions revolved around the identification of general relations among transboundary river states, applying existing IR theories in the RNB, and comparative investigation between the RNB with the Jordan river and with the Tigris-Euphrates River. The thesis focused on a holistic approach to the study of RNB and not only marginalized in one single approach. The purpose of using this methodology is because of the sensibility of the Nile River and its individuality which requires a study from a variety of perspectives and theoretical lens to clarify the situation.

**Documentation sources**

The data used for this study were collected mostly from academic journal articles available at digital libraries, from relevant books, official statistics, and maps. All data were acquired through extensive Internet, archives, and library research. Due to lack of funding, the possibility of field research or interviews with professionals has been unavailable and limited to a small number of personal discussions during webinars on the topic.

# 4 Results and analysis

This chapter analyzes the information gathered from the literature review and with the applied methodology illustrates the exploration of the research questions. The main findings of the paper are in this chapter thoroughly analyzed. This chapter is divided into two sections according to their relevance to the research questions. Section 4.1 discusses the first research question regarding the dividing factors and how can they be converted to unify the Nile basin. Therefore, the focus will be given on the Nile River analyzed through different perspectives. Section 4.2 refers to the second research question regarding the relationship between the geographical position and power and how does this reflect on the regional balance of powers in the MENA region. This is demonstrated by the application of the theory of hydro-hegemony on two middle eastern rivers, the Jordan and the Tigris-Euphrates rivers. This demonstration allows a comparison with the Nile River to be answered if water can play a role in the interactions among riparian countries in the MENA region and work as a catalyst for conflict or cooperation.

## 4.1 Transboundary water interaction in the river Nile basin

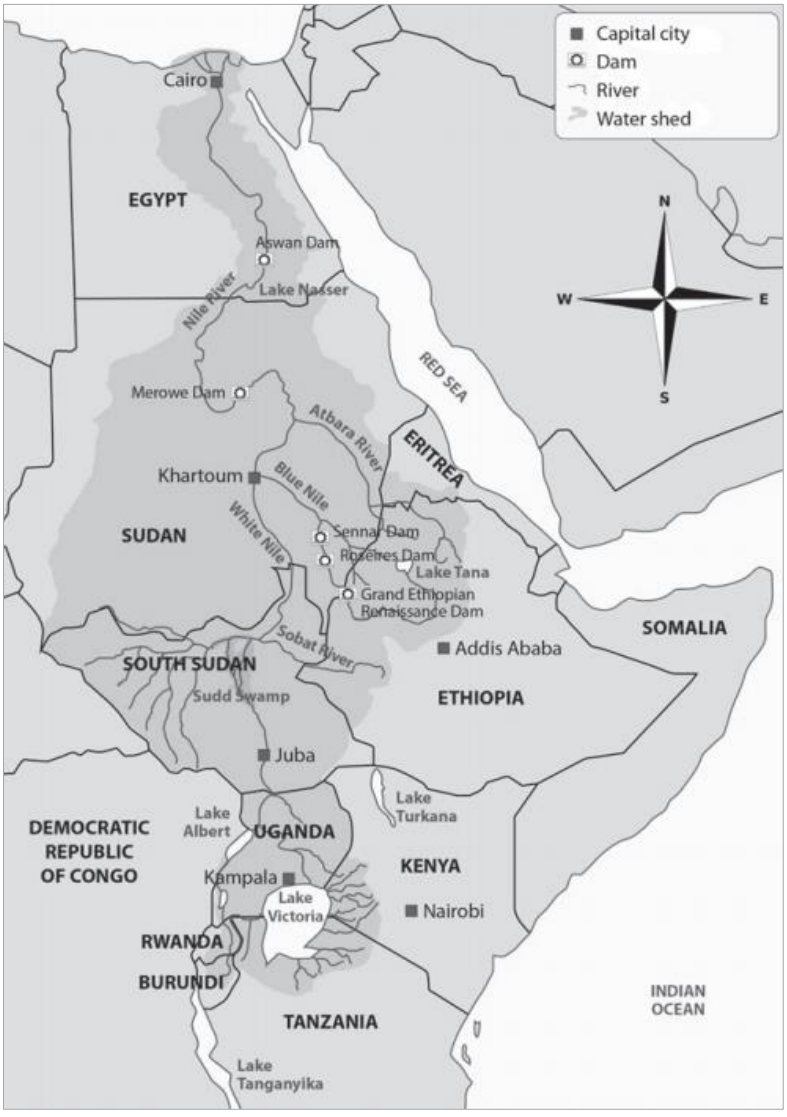
As aforementioned this section refers to the first research question and it's divided into five sub-sections.

### 4.1.1 Introduction

The first one (see 4.1.2) provides an overview of the Nile River and its position regionally and internationally. It discusses geographical and physiological features which assisted in the creation of the narrative of water wars and expands to an analysis of the role of external actors and their interference with basin-wide developments. The purpose of this sub-section is the identification of the principal dividing factors in the Nile River and how could they be used to unify the basin-states.
The second one (see 4.1.3) explores the theoretical concept of hydro-hegemony and counter-hegemony and analyses the power asymmetries among the basins. This asymmetrical distribution of power among the riparians is considered to be a second dividing force in the Nile River. With the application of the TWINS framework, it is also explored how this division could establish basin-wide cooperation.
The third one (see 4.1.4) refers to the third hypothesis regarding the cultural differences and how can these affect indirectly confrontational patterns. Further analysis on this topic shows that a deeper understanding of the cultural aspects could work as a trust generator among the riparians.
The fourth one (see 4.1.5) analyzes historically the validity of the legal agreements regarding the Nile River and the institutional initiatives regarding water resources formed over the years. It results in the paradoxical hypothesis that agreements could act as dividing forces and presents ways how this could be converted.
The section ends with some concluding comments about the Nile River (see 4.1.6), summarizing all the points mentioned in the sub-sections.

### 4.1.2 Regional and international features of the basin

The River Nile Basin, often called as one of the “cradles of the civilization” (Maisels, 1998), is the second-longest international river system, with a length of 6 695 km. The Nile River flows from south to north and spreads over eleven East African countries, Rwanda, Burundi, the Democratic Republic of Congo (DRC), United Republic of Tanzania (URT), Kenya, Uganda, Eritrea, Ethiopia, South Sudan, Sudan, and Egypt. The Nile River has two main tributaries; the White Nile and the Blue Nile. The White Nile has its origins at Lake Victoria, which is formed with tributaries that flows from the mountains of Rwanda and Burundi and its other tributaries stemming from Uganda, Kenya, and Tanzania. The following Map 1 illustrates the physiological and geographical characteristics of the Nile basin.




**Map 1** The Nile basin and the riparian states
(Adapted from the Nile Basin Research Program, Alfredsson, 2009)

The place where the Nile leaves Lake Victoria forms the headquarter of the White Nile. It flows thus, through Uganda to the Equatorial Lakes (Victoria and Kyoga in Uganda, and Mobutu or Albert between

Uganda and the DRC) to arrive later the Sudd swamps of Sudan, where it meets the much shorter Blue Nile at the city of Khartoum. The Blue Nile flows north starting from Lake Tana, which is formed from the Ethiopian Highlands. Both of them flow together north of Khartoum and about 108 km downstream, they are joined by the Atbara River, the least important river in the Nile system with a length of 800 km, whose source is in Eritrea. The Nile River then flows north arriving in Egypt through Lake Nasser. Before it arrives at the Mediterranean Sea, it splits into two major distributaries, the Rosetta and Damietta, north of Cairo.

The White Nile with a length of 3 700 km, contributes about 14 % of the annual flow to the Main Nile measured upstream of the White and Blue Nile merge in Khartoum. The Blue Nile, on the other side, with a length of 1 529 km contributes about 86 % of the annual flow of the Nile measured at the Aswan Dam in Egypt. The waters that flow from the Blue Nile are comprised of Blue Nile waters with 59 %, Baro-Akobo (Sobat) with 14 %, and Atbara with 13 % (Nile Basin Initiative, 2016). The Blue Nile although the shortest of the two rivers, is considered the basic source of the waters of the Nile. The exact place of the measurement and the amount of the annual water flow has been discussed in the bibliography as a misleading and complicated matter. For example, according to Okith-Owiro (2004), the measurement of the Nile waters in Egypt or through Sudan creates the assumption that the purpose of the Nile is based on the needs of the downstream countries. A more realistic measurement should take place at the place where the waters leave the lake plateau in East Africa excluding the evaporation losses or the soakage in the Sudd in Sudan. Godana (1985) argues that because of the seasonal fluctuation of the Nile there is no standard water percentage. Thus, the White Nile has its peak discharge in July until September but the Blue Nile has an enormous torrential flow and contributes about 90 % of the waters passing through Khartoum. However, during the low season (January until March) the Blue Nile contributes no more than 20 % of the waters passing Khartoum. Another study from Sutcliff (2009) argues that the Blue Nile contributes about 60 % of the waters of the Nile. The seasonal fluctuation of the Nile River, which reflects the rainfall over the Ethiopian highlands, requires constant water flow measurement throughout the year and seasons. A systematic measurement of the Nile River would give the knowledge to secure a regular flow to the downstream countries without any seasonal or climatic surprises.

The Nile River drains an area estimated at 3 150.719 $km^2$, representing about 10 % of the African continent and it flows over a 35° of latitude from south to north (Hurst, 1952). For some countries, like the DRC, the Nile is integrated into a small area of its land. The Nile in DRC occupies almost 2 % of its national land area. But for other countries, such as Rwanda and Uganda, the Nile is completely integrated into their water system (Kasimbazi, 2010). More specifically, about 80 % of the national land of Rwanda lies in the RNB. This is based on the fact that there is a majority of river systems that come from Rwanda and contribute to the formation of the RNB. The corresponding percentage of Uganda's land is about 98 % in the basin, because of its geographic place in the equatorial lakes and thus its large contribution to Lake Victoria. And then, there is another group of countries which does not contribute to the RNB but they are the major users such as Sudan and Egypt. Some key statistics of the Nile River basin are presented in Table 4.

**Table 4** Key statistics of the Nile River basin and the riparian countries

| Country | Total area (excl. coastal waters) 1000 km$^2$ | Area within the Nile Basin (1000 km$^2$) | As % of total area of basin (%) | As % of total area of country (%) | Total population in 2007 (mil.) | Average annual population growth (2011-2019) (%) | National Rainfall Index (mm/yr.) |
|---|---|---|---|---|---|---|---|
| **Burundi** | 27.8 | 13.3 | 0.4 | 47.6 | 10.8 | 3.1 | 997.8 |
| **Democratic Republic of the Congo** | 2 344.9 | 22.1 | 0.7 | 0.9 | 81.3 | 3.2 | 1 571 |
| **Egypt** | 1 001.5 | 326.8 | 10.5 | 32.6 | 96.4 | 2.1 | 106.6 |
| **Eritrea** | 121.9 | 24.9 | 0.8 | 20.4 | 3.4 | 1.3 | 333 |
| **Ethiopia** | 1 100.0 | 365.1 | 11.7 | 33.2 | 106.4 | 2.7 | 1 073 |
| **Kenya** | 580.4 | 46.2 | 1.5 | 8.12 | 50.2 | 2.4 | 902.1 |
| **Rwanda** | 26.3 | 19.9 | 0.6 | 75.5 | 11.9 | 2.5 | 1 052 |
| **South Sudan** | 644.3 | 620.6 | 19.6 | 97.7 | 10.9 | 1.6 | |
| **Sudan** | 1 864.0 | 1 396.2 | 44.1 | 74.9 | 40.8 | 2.3 | 500 |
| **Uganda** | 235.9 | 231.4 | 7.4 | 98.1 | 41.1 | 3.4 | 1 350 |
| **United Republic of Tanzania** | 945.1 | 84.2 | 2.7 | 8.9 | 54.6 | 2.9 | 1 114 |
| **Nile basin** | | 3 150.7 | 100.0 | | 507.8 | | 900 |

Source: Data from FAO, 1997; World Bank Statistics 2021

**Socio-economic characteristics**

The Nile River flows through countries inhabited by a wide range of cultural and ethnic diversity. Despite their differences, the population along the river does share a strong relationship with the river. As seen in Table 4 the total population of the Nile basin-states is approximately 507.8 million and more than half are dependent on the Nile for their water demands. The annual growth of population is most extreme in Uganda, DRC, and Burundi. In the Eastern Nile, Ethiopia has the highest annual population growth with 2.7 %, which is followed by Sudan with 2.3 % (South Sudan with 1.6 %) and Egypt with 2.1 %. Because of the rapid growth of population the water availability decreases (Swain, 2011). However, this fact remains controversial as others argue that the water availability does not decrease with the growth of the population, rather it's inefficient water management that hides behind water availability (Salman, 2016).

All Nile countries are agricultural economies and they base the population demands on agricultural products. Upper-riparian countries, like Ethiopia, have settled agriculture as general economic activity. This means, they use a fixed plot of land for cultivation, draining all the water available before they move to another land. On the contrary, lower-riparian countries like Egypt and Sudan, having irrigation-based agriculture, use an amount of groundwater, flood water, and water from the Nile to cultivate their crops.

Egypt does not only benefit from the waters of the Nile but also from the mineral-containing silt which transforms their shoreland into fertile land for the upcoming months. The dependency ratio of lower-riparian countries, such as Egypt for example is 98.2 %, Sudan accounts for 96 %, but for upper-riparian countries such as Ethiopia the ratio is 0 % (AQUASTAT, 2020), and this is because of two reasons. According to the first one, the upper-riparian countries are the suppliers and the lower riparian countries are mainly the consumers. The second reason is based on the climate differences among the riparian states as it is below analyzed.

**Climatic characteristics**

The climate at the RNB is divided into three main types. The first type, which occupies the north of the Nile, is characterized by a Mediterranean climate covering the area from the sea coast until south of Cairo in Egypt. The actual rainfall is about 120 mm at the coast and it decreases to 55 mm in Cairo. The second type covers the center of the Nile; south of Cairo until Atbara, and there is practically no rainfall as it lays in the desert. The third type has been divided into three subregions. The first one covers the Sudan Plains, where there is a steady increase in rainfalls in comparison with the Sahara or with Cairo. The average annual rainfall is about 1 000 mm. The second one covers the Highlands of Abyssinia which is characterized by heavy rainfall of 1 600 mm. The third one covers the Highlands of the Lake Plateau with an average rainfall of 1 250 mm (Shahin, 1985). The East African region experiences a variety of climatic zones and it's frequently visited by sandstorms and squalls. Moreover, the Nile opts to high or low floods with consequences to the population that lives close to the river. Although in academia controversial, climate change is also considered as a cause of water pressure with consequences such as the reduction of the average water availability or changes in the river flow. According to climate change theories, there have been several studies (Baldassarre et al., 2011; Beyene et al., 2010; Cooley et al., 2009; Goldenman, 1990; Swain, 2011) on its impacts in the RNB. Some studies suggest that there will be less water overall and as a consequence, the RNB will suffer from drought. However, other studies suggest that some areas will experience heavy rainfalls and thus more floods. Moreover, climatic models cannot predict with certainty which areas will experience climatic changes. According to Baldassarre et al. (2011), there is a need to recognize the uncertainty of climate projections on the hydrology of the Nile and the need to consider non-climatic factors such as population growth, urbanization, and land-use changes that might affect the water resources of the Nile more than the climate variability.

**The phenomenon of water stress**

Population growth and urbanization add to the pressing challenges of freshwater availability. This challenge is protected through the United Nations Sustainable Development Goal (SDG) 6.4 "[…to] substantially reduce the number of people suffering from water scarcity by 2030". The United Nations defines water scarcity as "The point at which the aggregate impact of all users impinges on the supply or quality of water under prevailing institutional arrangements to the extent that the demand by all sectors, including the environment, cannot be satisfied fully" (UN Water, 2006, p.2). The measurement

of water scarcity has been developed by Falkenmark et al. (1989) with the Water Stress Index (WSI). The Falkenmark Index is one of the most widespread indicators for assessing water stress levels. It indicates the pressure that the population puts on water, so long the former increases. Figure 1 illustrates the issue of the increasing population, competition for water, and water management problem. It visualizes the different levels of water competition. Each cube in the Figure indicates one flow of 1 million $\frac{m^3}{year}$ available in terrestrial water systems, whereas each dot represents 100 individuals depending on these water resources.

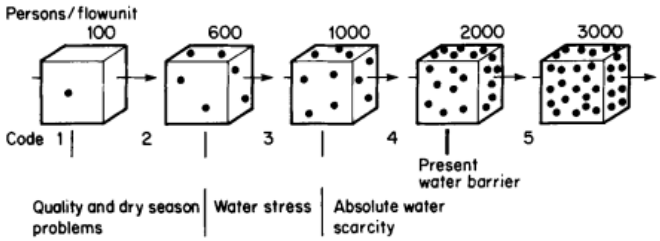



**Figure 1** Levels of water competition
(Adapted from Falkenmark et al., 1989)

The Falkenmark WSI has been later optimized by Engelman and LeRoy (1993) and Gardner-Outlaw and Engelman (1997). The authors conclude that the freshwater resources higher than 1 700 $\frac{m^3}{capita \cdot y}$ provide the threshold of relative water sufficiency (no stress), those between 1 700 $\frac{m^3}{capita \cdot y}$ and 1 000 $\frac{m^3}{capita \cdot y}$ stands for water scarcity, between 1 000 $\frac{m^3}{capita \cdot y}$ and 500 $\frac{m^3}{capita \cdot y}$ stands for water stress and lower than 500 $\frac{m^3}{capita \cdot y}$ is for absolute water scarcity.

Figure 2 indicates the total renewable water resources per capita in the Nile basin. This is a measurement of the maximum theoretical amount of water available for the country, including the internal flows and the external inflows.

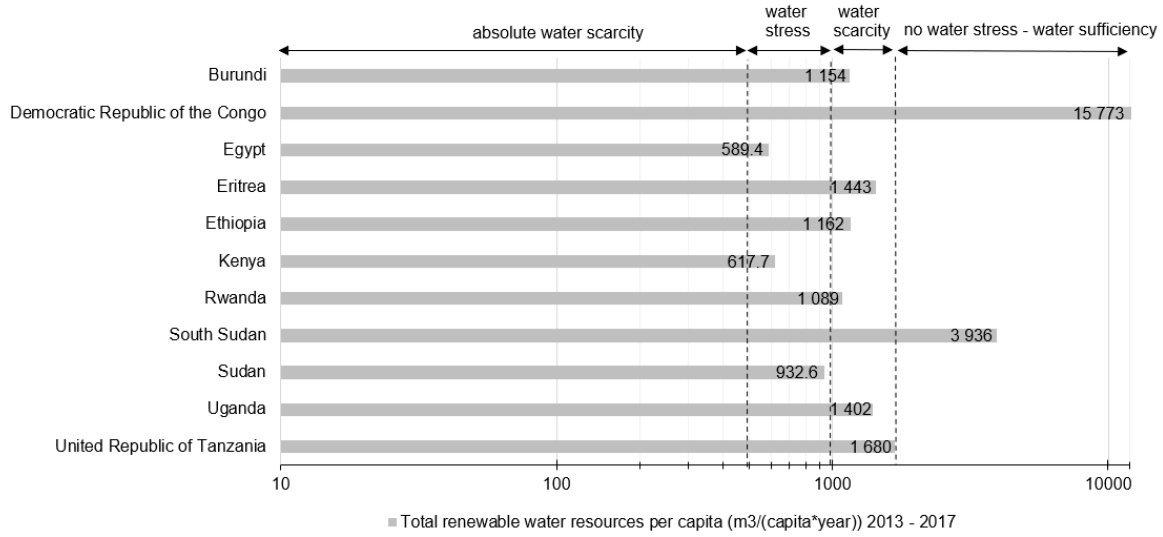



**Figure 2** Water Stress Index in the RNB based on the total renewable water resources per capita
(Adapted from AQUASTAT Database, 2020)

Even if the annual flow of the Nile River remains stable and secure, the majority of the countries along the Nile River experiences water scarcity. The two downstream countries of the Eastern Nile, Egypt and Sudan are experiencing water stress levels compared to upstream Ethiopia. In transnational waters, an upstream country, whose waters experience severe water scarcity, can degrade the water quality for downstream users and thus shortages during droughts (Alcamo et al, 2007).

The WSI has been criticized that it doesn't account for the amount of water that people use and it doesn't incorporate any withdrawals. Moreover, due to seasonal fluctuation especially in the RNB, the time of the measurement is of great importance for the results and could lead to misinterpretation. For these reasons, the Withdrawal-To-Availability (WTA) ratio was developed and defined water scarcity in terms of the percentage of total annual withdrawals across sectors including domestic, industrial, and agriculture sectors. According to WTA, a country is considered *water-stressed* if the annual withdrawals are between 20 % and 40 % of total freshwater supply and *severely stressed* if the ratio exceeds 40 % (Alcamo et al., 2003; Raskin et al., 1996). A comparison among the countries of the RNB is presented in Table 5.

**Table 5** Water scarcity levels and per sector water withdrawals

| Country | Water Scarcity Level | WTA (%) | Agri-cultural ($10^9$ $m^3$/y) | Industrial ($10^9$ $m^3$/y) | Municipal ($10^9$ $m^3$/y) | Total ($10^9$ $m^3$/y) | Total Renewable Water Resources ($10^9$ $m^3$/y) |
|---|---|---|---|---|---|---|---|
| **Ethiopia** | Low | 8.7 | 9.7 | 0.1 | 0.8 | 10.6 | 122.0 |
| **Sudan** | High | 71.2 | 25.9 | 0.1 | 1.0 | 26.9 | 37.8 |
| **Egypt** | Extreme high | 134.8 | 61.4 | 5.4 | 10.8 | 77.5 | 57.5 |
| **Burundi** | Low | 2.3 | 0.2 | 0.0 | 0.1 | 0.3 | 12.5 |
| **Eritrea** | Low | 8.0 | 0.6 | 0.0 | 0.1 | 0.6 | 7.3 |
| **Kenya** | Low to medium | 13.4 | 3.2 | 0.3 | 0.5 | 4.0 | 30.1 |
| **Rwanda** | Low | 1.1 | 0.1 | 0.0 | 0.1 | 0.2 | 13.3 |
| **South Sudan** | Low | 1.3 | 0.2 | 0.2 | 0.2 | 0.7 | 49.5 |
| **Uganda** | Low | 1.1 | 0.3 | 0.1 | 0.3 | 0.6 | 60.1 |
| **URT** | Low | 5.4 | 4.6 | 0.0 | 0.5 | 5.2 | 96.3 |
| **DRC** | Low | 5.3 | 0.1 | 0.2 | 0.5 | 0.7 | 12.8 |

Source: Data from AQUASTAT, 2020

The table combines the water scarcity level for each country of RNB and the water withdrawals per sector for all riparian states of the Nile basin. The water withdrawals are expressed as a percentage of the total water withdrawals. The higher the values, the bigger the competition among the users. Egypt

in comparison to the rest of the riparian countries consumes a huge amount of water for its agriculture. It falls, therefore, under the category of “extremely high” water-stressed country. To meet the needs of their population, irrigation has become essential for food security in the basin. The agricultural section in Sudan and Ethiopia covers over 90 % of water withdrawal. Egypt estimates at 80 %.

Water scarcity has been distinguished by Seckler et al. (1999) and later by Molden et al. (2007) as *Physical* and *Economical* water scarcity. The former means that the water demand exceeds the water availability and this occurs in a country when more than 75 % of river flows are withdrawn for domestic, industrial, and agricultural purposes (Brown and Matlock, 2011). The latter occurs in countries where the water resources are sufficient and the withdrawals represent less than 25 % of river flows but there is a lack of technical and financial resources for investments in water infrastructure to make these resources available (Rijsberman, 2006). As Table 5 presented, Egypt experiences physical water scarcity because the total withdrawals reach almost 80 %. Sudan experiences also physical water scarcity with almost 70 % of total water withdrawals. Whereas all the other upstream riparian countries do not experience any physical water scarcity, but economical, which could be optimized with the utilization of the water resources and water management.

Water stress and water scarcity indexes are only based on population growth and the available water resources. Water scarcity doesn't imply that there is not enough water but rather that with the current water management the population is getting a low amount of water (according to Falkenmark or WTA Index). Even to a country with physical water scarcity, the problem lays in the water management of the country and the diversification of their water resources. Therefore, it would be wrong to imply that a country with high rates of water scarcity means that the country “lacks water”. On the contrary, a country with high rates of water scarcity or water stress means that there is no efficient water management in the country and the population gets a very small percentage of water.

The importance of Nile waters is thought to be “a matter of life” itself. As President of Egypt Anwar Sadat stated in 1978, “We depend upon the Nile 100 % in our life, so if anyone, at any moment, thinks of depriving us of our life we shall never hesitate to go to war” (Kukk and Deese, 1996, p.46). This statement shows the political dimensions of water allocation. As all economies are political economies, the evaluation of them is only capable of using economic indicators. Increasingly, the basin states view water management as a principal feature of their economies, and therefore the meaning of the Nile is being shown from a majority of developmental projects to manage the waters of the Nile.

**The myth of water wars and the utilization of water as a political tool**

Water shortages, either physical or economical, is a cause of competition among the users. This competition over natural resources is based on control over the resources. It is a general assumption that in some regions, more specifically the middle eastern ones, the growing population and the existence of “unstable” governments combined with scarce water resources increase the possibilities of water wars.

Despite these claims, Aaron Wolf (1998) argues that water cannot be considered as *casus belli*. There are two significant reasons which prove why. The first one is manifested in an article about the geopolitics of water in the Middle East, where Jan Selby (2005) examines the political economies of the

region comparing the importance of water with that of oil. Questioning the liberal and realistic school of thought about water issues and following a Marxist approach on political economy, the author argues in his findings that international conflicts over oil can be real, whereas these about water, not. The reason for that is that water does not represent a significant part of the middle eastern political economies. His argument is being supported by the fact that the importance of agriculture is becoming less crucial to the political economy of the region. Especially Egypt, despite its radical changes in its economy since the 1950s, still insists on the importance of water the same way it did back then. The author concludes that the importance of water is undoubtingly enormous, however, not enough to generate transnational conflict but rather internal and local social conflicts. It is important to note, that the water crisis is a reality and its reasons does not lay on a naturalistic limitation or inefficient water management, but rather on major social features of the middle eastern political economies, such as the unsuccessful integration of former colonies to the capitalistic world, or the Arab dependency and vulnerability to changing economic conditions of the west (Alnasrawi, 1987; Selby, 2005). Selby (2005) claims that the misplacement of water as a conflict factor derives from an amalgamation which consists of the media propaganda, circulating “myths and stereotypes”, the environmental narrative of human dependence on biosphere, the orientalist misconception of civil underdevelopment, and “myths of instability” of the Middle East (Selby, 2005, p. 335). The second reason which disproves water as a cause of war derives from the London Water Research Group, a network of academics dealing predominantly with water issues (among others, John Anthony Allan, Mark Zeitoun, Ana Elisa Cascão, Naho Mirumachi, Jeroen Warner). Among their findings, the theory of power asymmetry (see 4.1.3) explains that in cases of imbalance of powers, the states follow the rules of *realpolitik*. In other words. “Infinitely weaker states ‘know their place’ in their regional neighborhood” (Zeitoun, 2008, p.4). To avoid the high opportunity costs of an attack, the weaker state is likely not to challenge the stronger.

Historically, water issues regarding a transboundary river led to more water-sharing agreements and paradoxically, to a general mistrust rather than war. In transboundary river basins the use of water as leverage, weapon, or terrorist objective to achieve a specific goal or to sabotage a case is not uncommon (ICA, 2012). For example, in the Nile basin, the use of *water as leverage* is exercised by both Egypt and Ethiopia to gain regional influence and preserve their water interests. Egypt sought international support to halt hydraulic infrastructure projects in Ethiopia. The latter proceed unilaterally to the construction of an enormous hydraulic project to change the preserved status quo and the regional power. The use of *water as a weapon* has been historically demonstrated.[1] *Water used as a terrorist objective* would contain military attack of a riparian country over a hydraulic infrastructure of another riparian upon a transboundary river. Up until today, such a phenomenon never occurred in the RNB. However, there is the possibility that in cases of “substantial harm” such a phenomenon can occur in dams or desalinization facilities. It is considerate to add, that in a case of a military attack on an operating dam could create costly measures to protect the public of even whole states from the consequences of a flood (ICA, 2012).

[1] Historically, there are some individual cases where the Nile waters have been used as a weapon. For example, during the siege of Alexandria in the late 48 BC, in year 767 during the attempts of Caliphate al-Mansur to consolidate the power of the Islamic caliphate, in the beginnings of the 19th century with the war against the Napoleonic troops in Alexandria, and in 1882 with the Urabi Revolution against the Khedivate and the British and French influence. For more details on the history of water being used as a weapon see Tvedt et al., 2020, p.94-96

**Hydropower infrastructure along the Nile**

The need to utilize the waters of the Nile prevails in the basin since time immemorial, especially in Egypt. The first traces of reservoir building are detected in the 12th pharaonic dynasty where the Fayum Oasis was used as a regulating reservoir to control the flood. Fayum, a depression west of the Nile valley surrounded by desert, was created by a combination of the nature of the Nile and a man-made and man-controlled water system. The almost 4 000-year-old regulatory dam in Egypt's central oasis was a forerunner for the thousands of similar structures that make modern society possible in the first place (Tvedt, 2020). The Fayum depression demonstrated the *hydraulic paradox* that the more water is being dammed the more increases the water scarcity. This is because of the efforts to control the water in a desert climate where the needs increase according to the social developments. As Tvedt (2020, p.27) argues "the more Egypt made itself dependent on the water of the Nile, the more vulnerable it became to the natural and man-made changes in the river".

Up until the 19th century the dam construction in Egypt was based on traditional and easy-to-build hydraulic with the technology at that time available. The modernization of the hydraulic infrastructure started with Muhammad Ali Pasha and a series of barrages at the head of the Nile delta. Table 6 presents the hydraulic infrastructures along the Eastern Nile River with a focus on the three basin-states, Egypt, Sudan, and Ethiopia.

**Table 6** Hydraulic infrastructure along the Nile River

| Country | Date of construction | Name | River | Hydropower (GW) |
|---|---|---|---|---|
| **Egypt** | 1970 | Aswan High Dam | Main Nile | 2.1 |
| **Egypt** | 1902 | Asyut Barrage | Main Nile | --- |
| **Egypt** | 1909 | Isna Barrage | Main Nile | --- |
| **Egypt** | 1930 | Nag Hammadi Barrage | Main Nile | --- |
| **Egypt** | Soon | New Valley Project | Main Nile | --- |
| **Egypt** | 1901 | Zifta Barrage | Main Nile | --- |
| **Sudan** | 1937 | Jabal al Awliya | White Nile | 0.03 |
| **Sudan** | Stopped | Jonglei Canal | White Nile | --- |
| **Sudan** | 1964 | Khashm al-Qirbah | Atbara | 0.01 |
| **Sudan** | 2009 | Merowe | Main Nile | 1.2 |
| **Sudan** | 1966 | Roseires | Blue Nile | 1.8 |
| **Sudan** | 1925 | Sennar | Blue Nile | 0.01 |
| **Ethiopia** | 2011 | GERD | Blue Nile | 6.0 |
| **Ethiopia** | 2010 | Tana-Beles-Link | Blue Nile | 0.46 |
| **Ethiopia** | 2009 | Tekeze | Blue Nile | 0.3 |

The Zifta barrage along the Damietta branch of the Nile delta was created in 1901. This was followed in 1902 and 1909 by the Asyut and the Isna barrage. The barrage projects continued and in 1930 the Nag

Hammadi was completed. The first dam at Aswan was created between 1899 and 1902 but to increase its capacity, it has been twice enlarged between 1908 and 1911 and between 1929 and 1934. The construction of the Aswan Low Dam began in 1902 (Hurst et al., 2020). As it was one of the largest of its time and due to its benefits in the annual low water period, the optimism for a second one arose.

The excessive need for the utilization of Nile waters gained momentum in the middle of the 1950s with the announcement of the construction of the Aswan High Dam (AHD). Completed in 1970 the AHD, was one of the largest dams on the Nile with an installed capacity of 2.1 GW and its reservoir, Lake Nasser, stretching some 498 km upstream from the dam site and into Sudan. The dam itself is located 965 km upstream from Cairo. The objective behind the construction of the dam was the expansion of the cultivation, the generation of hydroelectric power, and the protection downstream from flooding. In geopolitical terms, the objective of the dam was the filling of the reservoir to guarantee Egypt and Sudan a secure water flow (Wheeler et al., 2020). The AHD received a considerable amount of controversy during its construction. Proponents argued that the creation of Lake Nasser gives Egypt a secure water flow, power supply and saves Egypt from water shortages. Opponents on the other side discuss the dislocation not only of the historic remnants but also from the Nubian people which were obliged to leave to be secure from flooding. From an environmental aspect, the human intervention with the building of the AHD brought several negative consequences, such as coastal erosion and reduction in fish stock due to silt redundance, deposition of salt in the delta soils, and some areas soil salinity, and waterlogging.

After the successful example of Lake Nasser and the AHD, Egypt continued on more projects, like the Sadat Canal and its follower New Valley Project. To create usable land for agriculture, Egypt started 1978 the building of the Sadat Canal. This way the high-water level which came north of Lake Nasser would be drained into a plateau. Between 1998 and 2008 this plan created the Toshka Lakes, but because of the high evaporation level, these lakes have shrunk ever since. The bigger idea was to harness new land in the Western Desert by connecting several Oases. The New Valley Project originated in 1968 from the then-President Gamal Abdel Nasser was revived in 1997 by the Egyptian President Hosni Mubarak. The latter, in his turn, initiated the construction of the Sheikh Zayed Canal, which would pump water from the Nile into this canal and increase agriculture production. Despite the optimist plan, its high cost of irrigation in the Western Desert blocked the plans. However, President Abd al-Fattah as-Sisi endeavors to continue this project and to build a comprehensive strategic approach (Sayed, 2020).

The projects on the Nile continue upstream of Egypt. In 1925 Sudan completed the Sennar Dam on the Blue Nile, which boosted the irrigation of the Al-Jazirah plain between the Blue and the White Nile and provides Sudan with hydroelectric power. For Egyptian security reasons in the low season, Sudan built 1937 the Jabal al Awliya dam on the White Nile. In 1964 the Khashm al-Qirbah was built on Atbara River and in 1966 the Roseires dam on the Blue Nile. These dams enabled Sudan with the ability to take full advantage of the waters of the Nile. An effort to reduce the evaporation of the Nile was the construction of the Jonglei Canal (1978-1983). However, this project got interrupted by the mistrust of South Sudanese rebels as the plan was under the auspices of Egypt. The latest dam in Sudan was the Merowe dam in 2009.

**The great dam of the Ethiopian renaissance**

In 2011 the Ethiopian Prime Minister Meles Zenawi (1995-2012) announced the construction of the GERD on the Blue Nile. The dam is located in the western part of the country near the borders with Sudan. With a height of 145 m and a length of 1 800 m, the dam will create a reservoir, with a storage capacity of 63 billion $m^3$, double that Lake Tana. Its main purpose is hydroelectric power with an installed capacity of 6 GW. The idea of the GERD was a part of Ethiopian ambitions plans since the 1990s, under the name *Project X* and the time of public announcement accorded with the Egyptian protest period. When fully operational the GERD would empower Ethiopia to a hydro-political regional power (Tvedt, 2020) with a stronger negotiating power than in the past.

The Ethiopian decision to utilize the water of the Nile started with the Tekeze dam and the Tana Beles project. However, the GERD is one of the most controversial dams that it is built on the Nile because of its possible implications downstream. The Egyptian government has multiple times in the past criticized the implication of the dams or hydroelectric power plants downstream of the Nile. For example, the Beles hydroelectric powerplant in Ethiopia which was built in 2010 was seen as a provocation for Egypt because of the fears of getting to a dependent relationship with Ethiopia. Another example of provocation was the construction of the Nalubaale Power Station, formerly known as Owen Falls Dam (OFD) to reduce the water flow in Egypt and remove the former President of Egypt Gamal Abdel Nasser. The difference of the GERD with other dams on the Nile is first, the downstream concern over the release of water in drought season. Secondly, the downstream countries prefer a legally binding agreement for the operation of the dam, but Ethiopia insists on guidelines. Thirdly, the filling of the reservoir is on its own a matter of controversy between Ethiopia and the downstream countries. Egypt concerns about water access because of its high dependency ratio and insists on the slow filling of the reservoir (between 12-20 years). On the contrary, Ethiopia insists on filling in an accelerating tempo of 5-6 years. The resulting lake will lead to large amounts of water evaporation and the accelerating filling raises the fears for downstream countries that a huge amount of water would be “cut off”. Fourthly, Sudan insists on the sharing of data and transparency from Ethiopia to operate accordingly its dams. Lastly, Ethiopia argues that the dam is an opportunity for the country to generate electricity and to fight poverty (Foreign Policy, 2020). The GERD is considered for the downstream countries as an existential threat and a concern of the Ethiopian development to a regional power. For upstream Ethiopia, the dam is considered as an opportunity to utilize the waters of the Nile and escaping an established Egyptian social order.

Despite the downstream concerns, the main purpose of the GERD is considered to be hydroelectric generation to Ethiopia and export to neighboring countries. Seen nationally, the dam is the Ethiopian opportunity for economic development, energy security, foreign policy, and sustainable development. With the GERD Ethiopia follows a *vertical integration* approach which requires a harmonized policy intervention between the different administrative levels or known as *multilevel governance*. The internal political scene in Ethiopia will show if the land can adapt to the obligations and the responsibility that the GERD brings. Moreover, the vertical integration approach indicates that the existence of a variety of interests, externalities, and stakeholders which are involved in the Ethiopian water section (Varis et al., 2014).

**Examination of the RNB in the level of Superpolitics**

The effect of the GERD as a conflict catalyst is not only based on its enormous capacity and its Ethiopian objective of being a regional power but also because of the benefits and the influence that other external powers have on the GERD. This section applies as a warranty to the hypothesis that unilateral hydraulic infrastructure is a dividing factor because of the interference of external powers.

Egypt is called “the leader of the third world” and this not without reason (Shapland, 1997). Since time immemorial Egypt has been favored by the international environment. Due to Egypt’s geostrategic position, firstly with Alexandria back then as a cosmopolitan region and the greatest center of knowledge exchange, secondly, with the nationalization of the Suez Canal and Egypt posing as a controller of one of the most powerful sea lanes, and thirdly with its hegemony over the Nile, the international environment had no reason not to build strong bonds with the country. Its importance is also illustrated in the colonial period where Egypt was favored by Great Britain and during the cold war, the Egyptian alliance with the Soviet Union regarding the financial mobilization on the construction of hydraulic works increased the country’s strategic position for the two superpowers. Lastly, after the cold-war period, the Egyptian status quo was preserved due to its relationship with the World Bank and the USA, which was based on the interdependence created from financial and political support (Cascão, 2006a in Carles, 2006). Moreover, Egypt was able to be the recipient of funds from the FAO and private funds from Saudi Arabia to proceed with the construction of the Toshka project (Warner, 2006b in Carles, 2006).

The influence of the external actors on the Nile basin’s countries by manipulating water security issues and introducing new concepts such as water securitization, privatization, pricing, and exchange is an important factor that needs to be explored as it leads to severe debates over the water resources (Yihdego & Khalil, 2017).

**Playing with regional powers**

The need for a “stable and friendly” Egypt (Whittington et al., 2014, p.10) is shared by regional powers such as Saudi Arabia, Kuwait, and the United Arab Emirates (UAE). As importers of agricultural products from the Eastern Nile countries are interested in the promotion of cooperation in the Nile arena and (especially Saudi Arabia) many times act like intermediate to ease any tension on the Nile (Whittington et al., 2014).

Sudan, known as the *swing state*, shifts position according to its interests. It has an interest in the Egyptian-Ethiopia reconciliation over the utilization of the Nile waters. In the past allied with Egypt mainly because of the 1959 Agreement. To date Sudan swings between Egypt and Ethiopia. As a downstream country shares the Egyptian position over the GERD. However, as a neighboring country to Ethiopia, its agricultural and hydropower interests allies with those of Ethiopia, in terms of hydropower sales from the GERD (Whittington et al., 2014).

The United States has different positions on the Nile issues. One of the most recent ones is the promotion of the Africa project regarding a power development in Africa involving countries of West and East Africa. With the full operation of the GERD, Ethiopia would be the largest supplier to that grid increasing its regional power and the dependency of neighboring countries (Whittington et al., 2014).

The Israel-African relationship starts after announcing its independence in 1948. The strong Israel-East African relationship is considered to be the result of the Israeli diplomatic campaign and policy of *Peripheral alliance* developed by the first Prime Minister of Israel, David Ben-Gurion, who emphasized the strengthening of ties with non-Arab countries neighboring Arab nations to "break its [Israel] regional isolation" (Tal, 2001, p.44). The purpose of this strategy was to create an *anti-Nasserist block* that includes Israel and non-Arab countries "on the outer rim of the Middle East", such as Iran, Turkey, Sudan, and Ethiopia (Tal, 2001, p.152). Samaan (2017) analyses how such an outdated policy, the *Periphery doctrine*, could resurface and respond to new security challenges. According to his findings, outdated strategies could influence norms and address the preferences of a state. The Israeli *new periphery strategy* has diverse objectives but follows the same philosophy as the old one (Samaan, 2017). The exceptional interests that Israel had for Ethiopia developed since the cold-war era. The reasons revolve around Ethiopia's religious matters (as 80 % of its population is divided between Muslims and Christians), geographical location on the periphery of the Arab world, and on the shared interest of "minimizing the effects of Arab nationalism or Islamic unity in the Horn of Africa" (Bishku, 1994, p.55). From an Arabic perspective there is the suspicion and consideration that among Israel's efforts to develop its constant pursuit of security, Israel attempts to guarantee a share of the Nile waters ensuring its future water security in exchange for military, economic and technological assistance to Ethiopia (Yasii, 2016). For that to happen, Israel's basic tactic involves the strengthening of its relationship especially with Ethiopia and Eritrea but also with Uganda and Rwanda. However, the Israeli's narrative regarding its strong ties with Ethiopia revolves around climate change and the positioning of Israel as a source of knowledge and expertise for humanitarian development. In such terms, Israeli's technological contribution to Ethiopia relating to agriculture and irrigation schemes (such as the construction of dams) water-saving, and recycling, aims only at the mitigation of negative phenomena such as droughts, poverty, and hunger (Salman, 2019).

**The China Factor**

The presence of China in Africa started at the beginning of the 21st century with the involvement of Chinese national and private sector companies in Africa. This section tries to explore the Chinese involvement in the RNB as an effort of analyzing the influence of external actors in the basin and more specifically to find out the nature of the Chinese investments and their consequences.

It is considerate to note the fact that on one hand, the African states are in favor of the Chinese involvement as its seen by them as a development opportunity without political interference[2].

On the other hand, it raises the question if this effort of riparian states to be independent from "western" donors creates another form of dependency with China which in turn results in to increase in the role of China in the international scene.

[2] The Rwandan President, Paul Kagame praised in an interview the Chinese investments in Africa: Huge Chinese investments in African companies and infrastructure is helping Africa develop. The Chinese bring what Africa needs: investment and money for governments and companies. European and American involvement has not brought Africa forward (Kagame, 2009).

China's footprint in Africa created a major opportunity for both parties. For China, this is not only a way to expand its business in a whole continent and mark its presence in the region but also, it's a way to sustain its growing economy by importing minerals and oil from Africa (Albert, 2017). For the upstream countries, the Chinese involvement creates an opportunity to market and process the natural resources which they have in abundance. It is mostly Sudan and Ethiopia among the riparian states, who took advantage of this opportunity to increase their economic and political weakness compared to Egypt (Swain, 2011).

Both countries did not only profit from China in the oil sector, but also in hydro-infrastructure, such as the construction of Merowe dam and the raise of the Roseires dam in Sudan, the Tana Beles dam, and the GERD in Ethiopia. Even though that the formers are in accord with the 1959 Agreement, the dam construction in Ethiopia raises worries in Egypt (Swain, 2011). For Ethiopia the Chinese investment created a window of opportunity to get financial support, a thing which Ethiopia never received regionally (African Development Bank) or from the "west" (the World Bank, the European Investment Bank) due to Egyptian lobbying. The Ethiopian plans with Chinese support involve hydropower generation, energy export in neighboring countries, and agricultural production in the Ethiopian part of the Nile basin. Other upstream riparians such as Uganda, Burundi, and the DRC favorize and are engaged in dam building with Chinese support (Swain, 2011).

Nevertheless, the Chinese footprint in Africa has been by the international community criticized in terms of political interference, environmental standards, and exploitative behavior. Since the mid-1990s, the *Chinese policy of non-interference* in the internal political affairs of each country and its respect for sovereignty created an efficient collaboration with the African elites. By 2015, the shifting of the Chinese policy of non-interference has become visible with the placement of Chinese troops in Darfur, DRC, and South Sudan to support defense and counterterrorism (Albert, 2017). Local and non-governmental organizations raise concerns about the environmental standards of China's involvement. Among others, the lack of resource transparency, limited animal and environmental protection, poor compliance with safety and environmental standards have been pointed out. Lastly, the economic footprint in Africa has a "disproportionate level of international attention" which derives from unscrutinized examination of the Chinese involvement (Albert, 2017).

**Conclusion**

This section explored the first hypothesis of the basic research question which refers to the dividing factors in the Nile basin and how can they be used to unify the riparians. It is concluded that several factors affect the transboundary water interaction in the RNB and act as driving forces of conflict. First of all, the post-cold war era literature on water wars was created through the increase of social and environmental phenomena such as the growth of population and water scarcity. This served as a conflict catalyst as it increased the worries about water shortages. After the application of different indexes, it was found out that the upstream riparian states experience economic water scarcity which would be resolved with water investments and efficient water management. On the other side, the downstream countries experience physical water scarcity which requires not only an alternative source of water supply but also optimized water management to sustain the balance between water supply and water

demand. This results in the assumption that any changes, such as an upstream hydraulic construction would create an “existential threat” downstream. This fact has been challenged, especially studying it with the lens of the Marxist tradition which shows that water resources alone are not an adequate reason to cause conflict among riparians, as it does not take a big part of the political economy of the basin-states, compared with other energy resources. The water crisis is a reality but its causes do not lay necessarily to naturalistic limitations but to the incapability of the basin-states to adapt to a new postcolonial environment. Secondly, the hypothesis was based on the twofold character of the GERD. The dam is considered from the downstream countries as a threat and as a “hidden Ethiopian objective” of becoming a regional power. From the upstream countries, the dam is considered as a developmental opportunity. However, the operation of the GERD brings responsibilities and obligations which will determine the capability of upstream Ethiopia to operate the dam responsibly and sustainably. Thirdly, the role of external actors and their influence on regional politics serves as a dividing factor in the Nile basin. With the analysis of the Egyptian relationship to the “west”, it’s concluded that the interference of external actors manipulates water issues by securitizing and politicizing them. With the analysis of the Israeli influence in the region, it has been found out that the application of outdated policies and strategies forms norms and shows the preferences of the states to specific matters such as supporting specific projects, mostly for attaining benefits. Lastly, the Chinese involvement in Africa, which started as a policy of non-interference is shown to have been shifted. On the whole, all forms of external influence impeded any chance of regional collaboration in the Nile basin. Besides, a new phenomenon comes to the surface, which shows that the basin-states in their effort of independence from “the west”, get to a new dependency relationship with “the east”.

### 4.1.3 Power asymmetries among basin-states

This section analyzes the second hypothesis that power asymmetries among basin-states indicate the existence of a hegemonic order, a fact that works as a dividing force in the basin. This hypothesis is based on the hydro-hegemony and counter-hegemony theory. The section applies the TWINS framework in the Nile basin to illustrate the coexistence of conflict and cooperation.

#### Review of the strategies and the tactics of Egypt as a hydro-hegemon

This section demonstrates the strategies that Egypt used to find out how Egypt shaped and maintained its hegemony over the Nile. The legal and institutional facts mentioned here are thoroughly analyzed in the following sections (see 4.1.5). The hegemonic strategies and tactics are structured in four periods; the pre-colonial, the colonial, post-colonial, and the 1990s period.

#### The pre-colonial strategies (1811-1882): The dawn of the Egyptian modernization

The modern history of the Nile started with the authoritarian Muhammad Ali Pasha. He sought through military force to conduct an imperialistic policy which got spread until Uganda and Ethiopia and aimed entirely at the control of the whole watercourse of the Nile (Tvedt, 2020). Table 7 summarizes the events, the tactics used, the type of power, and the evaluation of the conflict intensity. According to the table, the attempt in the 19th century to control the waters of the Nile before its colonization by Great Britain in 1882 started with the development of irrigation infrastructure to use the Nile as an energy resource which resulted in the first attempts of the modernization of Egypt through the water. The second attempt to control the waters of the Nile was conducted by Khedive Ismail using the same strategy as Muhammad Ali Pasha but this time only for Ethiopia. This effort is considered a failed resource capture as the annexation attempts of Ethiopia did not succeed. It was a success in terms of controlling the Nile Valley by developing irrigation canals throughout the whole country.

**Table 7** Key events and strategies: pre-colonial period

| Year | Countries involved | Event | Tactic | Strategy | Type of Power | Conflict Intensity (CI) |
|---|---|---|---|---|---|---|
| **1st half of the 19th century** | All Nile riparians | Muhammad Ali's systematic use of the Nile for modernization | I – Military force | Resource Capture (RC) | Structural (S) | -5 |
| **1863-1879** | Egypt + Ethiopia | Khedive Ismail's incursions and annexation attempts in the Nile Valley | I – Military force | Failed RC | S | -5 |

Source: Data from Alula, 1999; Takele, 2004 in Carles, 2006, Carles, 2006, p.35
Note: The letter I refers to the tactics based on the Coercive compliance mechanism, as presented in Table 2 on page 20.

**The colonial strategies (1882-1952): Entering Egyptian hydro-hegemony**

The Egyptian hydro-hegemony cemented with the colonization of Egypt by the British Empire. Through a series of treaties (see Table 8) the British Empire succeeded to impede other countries in the construction of any works on the Nile River. This containment strategy which is part of the bargaining and ideational power of Great Britain (speaking for Egypt at that time) provided the legitimacy that Egypt needed to project safeguarding of the Nile waters as a national security issue (Buzan et al., 1998). This securitization tactic is present in the majority of the events. As demonstrated in Table 8, apart from the Fashoda crisis in 1898, all the other events refer to treaties, which are types of the normative compliance-producing mechanism. Waterbury (2002) argues that the role of treaties that are structured by the most powerful riparian state is to recreate existing inequalities.

The Fashoda incident between Great Britain and France in 1898 concerning their domination of the region signaled the "attitude" of Egyptian policymakers. This attitude was merely the future prevention of other powers (colonial or riparian states) of reducing the flow of the Nile. For example, the Addis Ababa agreement of 1902 and the Nile Tripartite Agreement of 1906. The former stabilized the attitude of the non-construction of hydraulic works. The latter, but also the Exchange of Notes of 1949, assisted Great Britain in knowledge construction and sanctioning the discourse concerning the Egyptian and Sudanese prior hydraulic rights.

It is considerate to add the fact that to ensure the ratification of the treaties, Great Britain and Egypt used also some structural power. In table 8 is presented that coercive compliance and utilitarian mechanisms have been used. For example, Great Britain gave incentives to France and Italy to sign the Nile Tripartite Agreement, as analyzed in the previous chapter. Italy got authorization from Great Britain to build the railway from Eritrea to Somaliland and France got from Britain the monopoly over Addis Ababa and Djibouti-railway.

In its turn, Egypt also used incentives and pressure during the colonial era. At the same time, Egypt offered hydropower to Uganda and forced Uganda to use it only if there enough water flowing downstream. Egypt used this combination of incentives and pressure to receive Uganda's compliance to the 1949 treaty for the construction of the OFD (Allan & Howell, 1994).

After consolidating its dominance over the Nile water with all the aforementioned actions, Egypt proceeded to one of the most important documents which officially secured compliance from all the riparian states regarding the uses of the Nile water. The Agreement of 1929 officially sanctioned the discourse, in other words, officially recognized the historical and acquired rights of Egypt over the Nile waters. The agreement reaffirmed the starting of an era where Egypt would enjoy its hegemonic rights and accordingly proceed unilaterally to hydraulic projects. Despite the variety of rights that the hydro-hegemon enjoys, the Agreement failed to mention the upper-riparians. This loophole adds to today's controversy over the legal basis of the Nile River.

**Table 8** Key events and strategies: colonial period

| Year | Countries involved | Event | Tactic | Strategy | Type of Power | CI |
|---|---|---|---|---|---|---|
| **1891** | GB (Egypt) + Italy (Ethiopia) | Anglo-Italian Protocol of 1891 | III – Treaty / Securitization<br>IV – Sanctioned Discourse (SD) / Knowledge Construction (KC) | Containment (C) | Bargaining (B) + Ideological (I) | 2 |
| **1898** | GB (Egypt) + France | Fashoda crisis- Dramatization of Egypt's dependence on the Nile. | I – Coercion Pressure<br>III - Securitization<br>IV - KC | C | S + B + I | -2 |
| **1902** | GB (Egypt) + Ethiopia | Addis-Ababa Agreement- no constructions on the Blue Nile | III – Treaty / Securitization<br>IV - SD / KC | C | I + B | 2 |
| **1906** | GB + France + Italy (for Egypt + Ethiopia) | Nile Tripartite agreement- "non-interference" | I – Coercion Pressure<br>II - Incentives<br>III – Treaty / Securitization<br>IV —- SD / KC | C | S + B + I | 2 |
| **1925** | Italy + GB (for Sudan + Egypt) | Exchange of notes- recognition of "prior hydraulic rights" | II – Incentives<br>III – Treaty / Securitization<br>IV —- SD / KC | C | S + B + I | 2 |
| **1929** | Egypt + GB (for Sudan) | Nile Water Treaty | III – Treaty / Securitization<br>IV – SD / KC | C | B + I | 2 |
| **1949** | Egypt + Uganda | Exchange of notes concerning the Owen falls dam for Nilotic electricity grid | I – Coercion Pressure<br>II – Incentives<br>III – Treaty | C | S + B + I | 4 |

Source: Data from Takele, 2004 in Carles, 2006; Waterbury, 2002, Carles, 2006, p.36
Note: Based on Table 2 on page 20 the Latin numbers refer to the respective mechanisms. Therefore: I= Coercive compliance mechanism, II=Utilitarian mechanism, III= Normative mechanism, IV= Ideological mechanisms.

**The post-colonial strategies (1940-1990): Preserving the hydro-hegemony**

At the beginning of the cold war, Egypt gained its independence and served not only as a hydro-hegemon of the Nile River but also representative of all the-up-until-the-1990s "Third World". Egypt wanted to "mobilize the capabilities" of the Nile River and exerted structural power to the riparians to unite the whole valley on Nile-related issues. Chesnot (1993) argues that Ethiopia as being a non-Muslim country rejected the suggestion, and Sudan was in internal tension regarding its independence in 1956. Despite that, and in the late 1950s both Egypt and Sudan had an interest in developing hydraulic projects to benefit from the Nile. These discussions over the projects resulted in the Nile Agreement of

1959. In the agreement of 1959 Egypt used all three strategies; resource capture, containment, and integration as presented in table 9. On one hand, through the Agreement, Egypt constructed the AHD. The AHD is considered as resource capture from three different perspectives. Firstly, the dam ensures the water sufficiency (knowledge construction tactic) of the country and Egypt can entirely control the waters which flow to Lake Nasser. Secondly, Chesnot (1993) agreed that the dam was a resource capture strategy because of the displacement of the Nubian people and the historical region and thus the annexation of Nubia to Egypt, to clear the region for the formation of Lake Nasser. Thirdly, the dam symbolized the Egyptian independence from Great Britain and was presented as a national security issue (securitization tactic). Tvedt (2020) observes that Great Britain proposed at that time the construction of smaller dams along the Nile, a fact which would not create any environmental issues upstream but also to which the Egyptian President Nasser could not agree.

On the other hand, with the agreements, Egypt gave incentives to Sudan to proceed to the construction of the Roseires Dam. Using integration and containment strategy, Egypt forced Sudan to respect the quota of the average annual Nile flow removing Sudan as a "potential threat" to the Egyptian hegemony. This occurred by granting Sudan 14.5 billion $m^3$ of extra water (in addition to the 4 billion $m^3$ agreed in 1929), whereas Egypt gained 7.5 billion $m^3$ extra (in addition to the 48 billion $m^3$ water agreed in 1929, also "knowledge construction" tactic). This was considered as a "hegemonic gift", which prevented Sudan from developing any unilateral hydraulic projects (Carles, 2006).

With Egypt exercising all the three dimensions of power signaled to the other riparians that Egypt was the hegemon (Carles, 2006). From the early 1960s until the 1980s the Egyptian actions are mostly characterized as cooperative to all riparians apart from Ethiopia. This long-lasting mistrust and tension between the two countries was reinforced, firstly, because Ethiopia did not recognize Egypt as a hegemon and secondly because Egypt used all over the years its structural power to weaken Ethiopia. As presented in Table 9 the Egyptian strategy of containment resulted in covert actions against Ethiopia's political and economic capabilities. For instance, during the Ethiopian-Somali conflict (1960-1964) Egypt provided moral and material support to external and internal enemies of Ethiopia (Tesfaye, 2001a). Simultaneously, Egyptian propaganda against the Ethiopian Christians supported the conflict between the Christians and Muslims in Ethiopia and during the Ogaden conflict between Somalia and Ethiopia, Egypt offered support to Somalia. The Egyptian hegemony over the Nile took also the form of pressure against Ethiopia's proposed hydraulic projects with the widely publicized declaration of the Egyptian President Sadat in 1979, that "the only matter that could take Egypt to war again is water".

Nevertheless, Egypt promoted incentives that were part of its containment strategy. As it will be in the following chapter analyzed (see 4.1.5), Egypt continued the discourse of cooperative projects such as the Hydromet (1968) or the Undugu (1977) but each time excluding Ethiopia. The cooperative projects took part in a time where tension and mistrust among the riparians were increasing. For example, the effort for resource capture by Egypt with the construction of the Jonglei Canal (1978-1983), got interrupted by the mistrust of Sudanese rebels. Another proof is that during the drought sessions in Ethiopia, Sudan, and accordingly the lowering of the water levels of the Lake Nasser in 1980, Egypt followed a securitization tactic which signaled a period of doubt and suspicion among the riparians.

**Table 9** Key events and strategies: post-colonial period

| Year | Countries involved | Event | Tactic | Strategy | Type of Power | CI |
|---|---|---|---|---|---|---|
| **1956 - 1959** | Sudan + Egypt | Tensions after Sudanese independence | I – Coercion Pressure | C | S | -2 |
| **1959** | Egypt + Sudan | 1959 Agreement | I - Covert actions / Pressure<br>II - Incentives<br>III - Treaty / Securitization<br>IV - SD/KC | RC+C+I | S | 6 |
| **Late 50s** | Egypt + Ethiopia | Propaganda-Radio broadcasts in Ethiopia against Ethiopian Christians | I – Covert actions | C | S | -4 |
| **1960-1964** | Egypt + Ethiopia | Somalia – Ethiopia war | I – Covert actions | C | S | -4 |
| **1962** | Egypt + Ethiopia | Propaganda during the April 1962 conference of the Arab League Support to the Eritrean Liberation Front | I – Covert actions | C | S | -4 |
| **1968** | All riparians (Ethiopia observer) | Hydromet | I - Covert actions<br>II - Incentives | C | S | 3 |
| **1977** | Egypt, Sudan, Uganda, ex-Zaire, Rwanda, Burundi, CAR | Undugu | I - Covert actions<br>II - Incentives | C | S | 3 |
| **1977-1979** | Egypt + Somalia | Somalia – Ethiopia war - Ogaden conflict | I - Covert actions / Coercion pressure | C | S | -4 |
| **1979** | Egypt + Ethiopia | Anwar Sadat threat against Ethiopia | I - Coercion pressure | C | S | -2 |
| **1983** | Egypt + Sudan | Jonglei Canal construction ceased | I – Military Power | Failed RC | S | -5 |
| **1979 - 1988** | Eastern Nile | Droughts - tensions | III - Securitization | C | B | -3 |
| **1990** | Egypt + Sudan | Egypt's veto on Ethiopian projects | III – Securitization<br>IV – SD | C | B+I | -3 |

Source: Data from Cascão, 2004 in Carles, 2006; El-Fadel et al., 2003; Waterbury, 2002, Carles, 2006, p.39-40
Note: Based on Table 2 on page 20 the Latin numbers refer to the respective mechanisms. Therefore: I= Coercive compliance mechanism, II=Utilitarian mechanism, III= Normative mechanism, IV= Ideological mechanisms.

**The strategies in the 1990s: The polarity between cooperation and unilateral actions**

The post-cold-war was very different from the years before the 1990s. The political mistrust among the riparians remained stable but all riparians came a long way from unilateral actions to the first form of regional cooperation. Hegemonic Egypt put a lot of effort into sanctioning the discourse that it stands in favor of basin-wide cooperation but at the same time, it used its structural power to follow unilaterally hydraulic projects on the Nile. Up until the 1990s, the Egyptian tactic of active stalling gave time to the upstream states to develop themselves technologically and politically, a fact which gave them a different negotiating position in the regional environment.

Table 10 illustrates some events which are the results of Egyptian containment strategy taking the form of incentives to some riparians, to gain time for its "New Civilisation Project (NCP)" (Warner, 2006b in Carles, 2006). This is a large-scale resource capture strategy aiming at the relocation of its population to the desert (Warner, 2006b in Carles, 2006). It incorporates two of the largest projects in the desert. The first one is called the North Sinai Agricultural Development Project (NSADP) which is the relocation project of a part of the population, a project planned in 1979 under the Egyptian President Anwar Sadat and restarted under the Egyptian President Hosni Mubarak (Carles, 2006). Through the construction of the Al-Salam Canal from the Damietta branch of the Nile, Egypt provides irrigation waters to the area west of the Suez Canal creating a residential area in a former desert. Upstream countries argue that this project is "environmentally a disaster" (Whittington and Waterbury, 1998).

The second project is the New Valley Project which consists of the Toshka project and Al-Oweinat project. The first phase, the Toshka project launched in 1997, situated in the South of Egypt, next to Lake Nasser, consists of pumping stations to divert water from Lake Nasser toward the Toshka oases. The ambition behind this project is again the relocation of a part of the population by the time it's completed. The residential area would be combined with industrial and agricultural facilities to provide employment, transportation infrastructure and tourism facilities. The second phase is the feeding of the Al-Oweinat only by groundwater (Whittington and Waterbury, 1998).

The goal of these enormous projects in Egypt is the reinforcement of Egypt's water control in the basin. These projects increase the already enormous dependency of Egypt on the Nile waters. Waterbury and Whittington (1998) argue that these projects add to the claim of prior use of Egypt, by constructing knowledge and sanctioning the discourse on Egypt's historical rights on the Nile waters.

Besides, these projects are forcing Egypt to increase its dependence on the Nile waters, and to be completed Egypt needs time which gains through proceeding to "harmless" incentives towards allegedly regional cooperation such as the transformation of the Undugu to the TECCONILE, the singing of the non-binding agreement of 1993 and the creation of the NBI.

Without a doubt, the NBI is one of the biggest steps towards regional cooperation among the riparians. The upstream states considerer it as the only regional institution through which the basin-states can negotiate over water allocation issues using the principle of equitable utilization of water resources. For Egypt, the creation of the NBI was a tactic of active stalling to preserve its status quo for as long as possible (Daoudy, 2005).

**Table 10** Key events and strategies: in the 1990s

| Year | Countries involved | Event | Tactic | Strategy | Type of Power | CI |
|---|---|---|---|---|---|---|
| **1993** | All Nile riparians (Ethiopia observer) | TECCONILE | I - Active stalling<br>II - Incentives | C | S | 4 |
| **1993** | All Nile riparians, including Ethiopia | Non-binding agreement on cooperation over Nile Waters | I - Active stalling<br>II - Incentives | C | S | 4 |
| **1994** | Egypt | Northern Sinai Agricultural Development Project (NSADP) | I - Coercion pressure<br>III -Securitization<br>IV - SD/KC | RC | S+B | -3 |
| **1995** | Egypt + Sudan + Ethiopia | Assassination attempt on Mubarak in Addis Ababa | I – Coercion / Military force | - | S | -2 |
| **1997** | Egypt | Toshka project | I - Coercion pressure<br>III - Securitization<br>IV - SD/KC | RC | S+B | -3 |
| **1999** | All Nile riparians | NBI | I - Active stalling<br>II - Incentives | I | S | 6 |

Source: Data from Cascão, 2004 in Carles, 2006; Waterbury, 2002, Carles, 2006, p.46
Note: Based on Table 2 on page 20 the Latin numbers refer to the respective mechanisms. Therefore: I= Coercive compliance mechanism, II=Utilitarian mechanism, III= Normative mechanism, IV= Ideological mechanisms.

**Ethiopia and the GERD: Unfolding the counter-hegemony and modifying the power asymmetries**

This section discusses the second hypothesis of the role of power asymmetries as a dividing factor in the Nile basin but this time analyzed through the theory of counter-hegemony. It examines the ways that Ethiopia challenges the established hegemonic social by using bargaining and ideational power, and tactics based on mechanisms for resistance and counter-hegemony to change the prevailing social order and its position in it. This is succeeded through developments in hydraulic infrastructure, changing of relations with neighboring countries, and efforts of internal political stabilization. This section includes an analysis of the GERD, an analysis of the Ethiopian tactics and mechanisms of counter-hegemony, and an exploration of the dynamics of power asymmetry in the Nile basin. It ends with a comparison of the two hegemonic positions.

**The upsurge of the GERD**

A study of the United States Bureau of Reclamation traced back to 1964 identified locations with major potential for hydropower and irrigation development in Ethiopia on the Blue Nile (USBR, 1964). In the superpolitics context, Waterbury (2002) argues that this study was a counter game played by the USA in response to Russia's financial engagement in the construction of the AHD in Egypt.

However, more studies followed during the 1980s and 1990s developed from the Ethiopian governments which included the construction of a series of small dams on the Blue Nile. The latest study developed in 2007 claimed that the Blue Nile in Ethiopia is "ungauged" and it affirmed the construction of an enormous hydroelectric powerplant. The success of it would be, however, based on a renegotiation of the 1959 Agreement to create win-win solutions for downstream and upstream countries (Block et al., 2007).

Cascão and Nicol (2016) observe that the GERD is the "outcome of failed expectations" because of the constant failure of the institutional and legal level to reach consensus regarding water allocation issues. As it will be in the following chapter analyzed (see 4.1.5), the development of regional long-term investments like the Joint Multipurpose Program (JMP) which runs under the Eastern Nile Subsidiary Action Program (ENSAP) created a great opportunity for regional cooperation and collaboration and Ethiopia thought of it as the first feasible opportunity to create the hydroelectric plant on the Blue Nile. However, the failure of the JMP due to political and financial instability and any trilateral plans under the Eastern Nile Regional Technical Office (ENTRO) were becoming unlikely, Ethiopia decided to proceed to its national project to fulfill its growing energy demands. Therefore, based on the sites identified by the US Bureau of Reclamation study and the JMP study, however, slightly modified mostly regarding the capacity of the dam, Ethiopia announced in April 2011 the construction of the GERD.

As already mentioned, it was the political and economic changes at the national level in Ethiopia which increased the internal energy demand. This fact is one of the key factors which contributed to the construction of the GERD and this creation of a "sense of urgency" regarding water development (Cascão & Nicol, 2016). The unilateral process of construction was the result of the lack of regional collaboration due to the slow process of the NBI and the political disagreements. As in the previous section analyzed, this deceleration was part of the Egyptian tactic of active stalling.

**The Ethiopian contestation of the Egyptian hegemony**

Starting with the GERD in 2010 Ethiopia forced Egypt to enter unwillingly into trilateral negotiations including Sudan on the filling process and operation of the dam. This is what Tawfik (2015, p.38) calls a "game-changer". As presented in Table 11, the decision on the construction of the GERD is based, firstly, on coercive mechanism and, secondly, on transformative (or liberative) mechanism which as in theoretical framework analyzed in the power to "manipulate the consciousness of the recipients" to provide alternative knowledge. Therefore, the tactics used from Ethiopia are the infrastructure construction as part of the coercive mechanism, the alternative knowledge and arrangements as parts of "transformative mechanism" (Zeitoun et al., 2017). In terms of strategy, Ethiopia used resource capture strategy and ideational strategy. The former is based on the construction itself and the latter is

based on the spreading the discourse of equitable utilization of water resources and redistribution of the waters of the Nile. The ideational strategy creates the situation of “common sense”, making the construction of a dam appears logical and normative. In this case, the type of power used would be the Bargaining and the Ideational one. However, at the same time, the construction of the dam works for Egypt as coercion pressure which on Table 11 presented as a Compliance mechanism.

**Table 11** Key events and strategies in the 2010s

| Year | Countries involved | Event | Tactic | Strategy | Type of Power | CI |
|---|---|---|---|---|---|---|
| **2010** | Ethiopia + Egypt | Unilateral announcement to build the GERD | I - Coercion pressure (Compliance)<br>I-Infrastructure construction (Contest)<br>III-Alternative discourse / Alternative arrangements / Alternative Knowledge (Contest) | RC + I | B+I | -3 |
| **2011** | Upstream riparian states (especially Ethiopia) | CFA proposal | II-Strategic Cooperation/Alternative agenda<br>III-Alternative discourse / Alternative arrangements / Alternative knowledge (Contest) | C+I | B+I | 0 |

Source: Data from Carles, 2006; Zeitoun et al., 2017
Note: Based on Table 2 on page 20 the Latin numbers refer to the respective mechanisms. Therefore: I= Coercive compliance mechanism, II=Utilitarian mechanism, III= Normative mechanism, IV= Ideological mechanisms.

The second contestation of Egyptian hegemony is the pressure on signing the Cooperative Framework Agreement (CFA). The coalition of interests of the upstream riparian states resulted in the CFA which, as Ibrahim (2011) puts it, is an effort to challenge the Egyptian strategy of preserving the hegemonic status over the years. As illustrated in Table 11, Ethiopia made a “strategic cooperation” with the upper riparians and provided an “alternative agenda”, which both are part of its leverage mechanism (Zeitoun et al., 2017). Continuing its transformative mechanism, Ethiopia aimed with its promotion of the CFA the supply of an “alternative discourse” and knowledge (Zeitoun et al., 2017). In the conflict intensity scale, this is graded with a 0 (zero) because the framework lacks ratification and it did not change the interaction among the riparians. With the signing and ratification of it, a new level of conflict intensity is to be calculated.

Again, the counter-hegemony reading helps to a better understanding of the situation but as Zeitoun et al., (2017, p. 287) observe, Ethiopia’s actions could merely be a pursuit of its interests under the “changing international political economic circumstances”. Ibrahim (2011) suggests that the GERD or the CFA alone are not threatening to the balance of powers created by Egypt. However, it signals the beginning of an era of questioning and challenging the Egyptian hegemony. The Egyptian status quo

could be threatened in case the upstream countries create enormous diplomatic pressure with the tactic of knowledge construction or sanctioning the discourse that they require the utilization of the waters of the Nile to fight poverty. This narrative of poverty could together with public funds of the upstream countries or private investors (however not international funds as they can be [partially] blocked by Egypt)[3] result in the decrease of the negotiating power of Egypt and guide to the destabilization of the balance of powers (Ibrahim, 2011).

Lastly, the Ethiopian success to contest the Egyptian monopoly was based also on its success to manage properly its internal issues and secondly in its success to create a good relationship with neighboring countries, especially with Sudan. Today, Ethiopia is threatened not only by the former but also by the latter. Both internally and externally Ethiopia seems to have these relationships broken. The internal contestation of the government presented with the protest in Tigray is one example (Al Jazeera, 2021). Externally, the Sudanese relationship with Ethiopia was challenged because of the positioning of the GERD which according to Sudanese and Egyptian researchers could be considered Sudanese land (Middle East Monitor, 2021). This fact is based on the land proportioning according to the Agreement of 1902 (see 4.1.5), however, Ethiopia denies the validity of this agreement (Tvedt et al., 2020).

**Changing the Power Asymmetries in the RNB**

Any changes in the power asymmetries (as discussed in the theoretical framework, see section 2) among the riparian states can affect the relationship among riparian states which share a river basin (Zeitoun et al., 2014; Zeitoun & Mirumachi, 2008). Up until the 1990s, there was no major change in the balance of powers in the RNB. As previously discussed, Egypt as a hydro-hegemon set the rules, and the riparians played along. Concerning ideational power, there was vast knowledge gap between downstream and upstream countries. On one hand, Egypt and Sudan had an established knowledge of water resources, technical establishments starting from the pre-colonial period, and a majority of developmental scenarios. On the other hand, the available knowledge on water and land resources to the upstream countries was inadequate to proceed to any development, if any think of the possibility of development and infrastructure.

Nevertheless, at the beginning of 1990s, the power asymmetries tended to reduce. After the realization of the ambitious NBI and its well-established projects, the upstream countries gained knowledge capable to influence political agendas, dialogue, negotiations, and policy formulation (Cascão & Nicol, 2016). It seemed like the efforts of Egypt of active stalling and the incentives used to collaborate with the riparians took another turn and resulted in the creation of a platform of information exchange and inspiring knowledge-sharing especially for Ethiopia. Apart from ideational power, upstream countries and

[3] One of the most efficient hegemonic tactics of Egypt against upstream riparian states is the ability to block international funds (Warner, 2006b in Carles, 2006). More specifically, due to Egypt's ideological power in the international context, Ethiopia's pledge for equitable water sharing was weakened. Due to internal political instabilities, upstream countries couldn't gather internal funds. More importantly, in 1990 Egypt blocked an African Development Bank loan to Ethiopia and because of the World Bank's Operational Directive, 7.50 downstream countries received the right to call veto for upstream projects (Waterbury, 2002).

especially Ethiopia, gained bargaining power. The possibility to discuss with other riparians about hydraulic infrastructure and proceed to negotiations of the legal framework are some of the facts that in the 1990s and before that were out of the question. A very interesting example of an unprecedented turn of events is presented by Cascão and Nicol (2016). This refers to the creation of "sub-alliances", meaning the turn of Sudan to work together with Ethiopia under the allegation of benefit sharing, in terms of power trade, water irrigation, and sediment control.

Studies on the power asymmetries (Cascão, 2009; Cascão & Nicol, 2016; Zeitoun et al., 2011) claim that the decrease of the knowledge gap between downstream and upstream states is caused due to the efforts towards multilateral cooperation which strengthened the capacities of the upstream countries in terms of ideational and bargaining power.

It is important to take into consideration the acknowledgment, developed by Warner (2007 in Zeitoun et al., 2017) that after the contestation of a hydro-hegemon, the social order that will be created can take three possible forms. The first one assimilates the previous hegemonic social order but with a different actor on stage. The second form refers to the formation of a social order based on the contestation with the construction of a different ideology, alternative ideas, and norms, from the previous hegemon. The third formation is a social order based on the state of a-hegemony. This state lacks a hierarchy and an authoritative power and serves as an escape from the cycle of hegemony and counter-hegemony. This state includes a permanent concern of the creation of a new hegemon (Acharya, 2008).

Despite the former acknowledgment, there is the belief that in the case of the Nile, Ethiopia mostly aims at the formation of the first form of social order. This means that Ethiopia's objective is the creation of a new hegemonic social order where the hegemon won't be Egypt but Ethiopia. This claim serves in this paper as a warranty for the hypothesis that cooperation in the Nile basin is unlikely not only because of the existence of power asymmetries among the riparians but also because of the intimidating existence of a counter-hegemony aiming at the downfall of the hegemon. According to Tawfik (2015), the Ethiopian approach of the Egyptian contestation, mostly with the construction with GERD, but also with the very well planned use of its bargaining and ideational power, signals the ending of an era with the "apparent" or "veiled consent" of Ethiopia to the hegemonic order (Zeitoun et al., 2014, p.13). This might not necessarily mean the ending of the hegemonic era of Egypt, but it surely means the beginning of an era with an "unstable order of contested control" (Tawfik, 2015, p.39) and a fundamental mistrust and suspicion among the riparians.

**Hydro-hegemony and counter-hegemony in retrospective**

The answer to the question of how Egypt shaped and preserved its hegemony over the years is through compliance-producing mechanisms, mostly through its structural power and using all of the strategies and tactics available to Egypt. From its pre-colonization period, Egypt was the receiver of modernization efforts using the resource capture strategy. Under the influence of Great Britain, Egypt entered its hydro-hegemony era using bargaining and ideational power to construct knowledge and sanction the discourse of the Egyptian historical rights on the Nile and through containment strategy to legitimize the claim that the Nile waters are a national security issue. Entering the post-colonial period, the already established hydro-hegemony had to be preserved using incentives to the riparian states and pressure to the

identified upstream threat; Ethiopia. The 1990s era is characterized by a controversy between cooperative efforts such as institutions and agreements but at the same time unilateral actions on side of Egypt such as the creation of the NCP.

Egypt had to either think of the Nile as parts of water distributed in territories or think of it as an organism which flows and cannot efficiently operate without the cooperation of the states through it flows. Egyptian policy in the 20th century was contradictory. Apparently, it is served both ways. On the one side, Egypt is positioning in favor of cooperation with all riparians but on the other side, it excludes Ethiopia from the cooperative incentives and works unilaterally in Nile projects without the consent of other upstream riparians, a fact which works against the principles of cooperation.

According to a summary of the conflict intensity which is demonstrated in Figure 3, the hydro-hegemony period is characterized by a pendulum between “no conflict” and “cold conflict”. In other words, a stage between “stable” and “unstable peace” with “cold relations” between Egypt and Ethiopia. It characterizes a form of “negative-sum” game with “consolidated control” and “inequitable distribution” of water resources or water benefits (Zeitoun 2006a, in Carles, 2006). The contestation of the hydro-hegemony seems to have opened up at the beginning a new era of cooperation with the establishment of institutions and the promotion of international water law principles. The cooperation in the Nile basin seems for the first time to reach levels of stable peace and equitable distribution of water resources only to fail some years later and return to a cold conflict. This sudden change could be interpreted as the outcome of a hasty and inconsiderate movement of the Ethiopian side. Political cooperation either with guidelines or binding agreements was not something that the Nile basin was ready for. On the contrary, a formation of technical cooperation on joint projects and a technical agreement upon the GERD could have been a better idea for the avoidance of returning to the same stage as two decades ago.

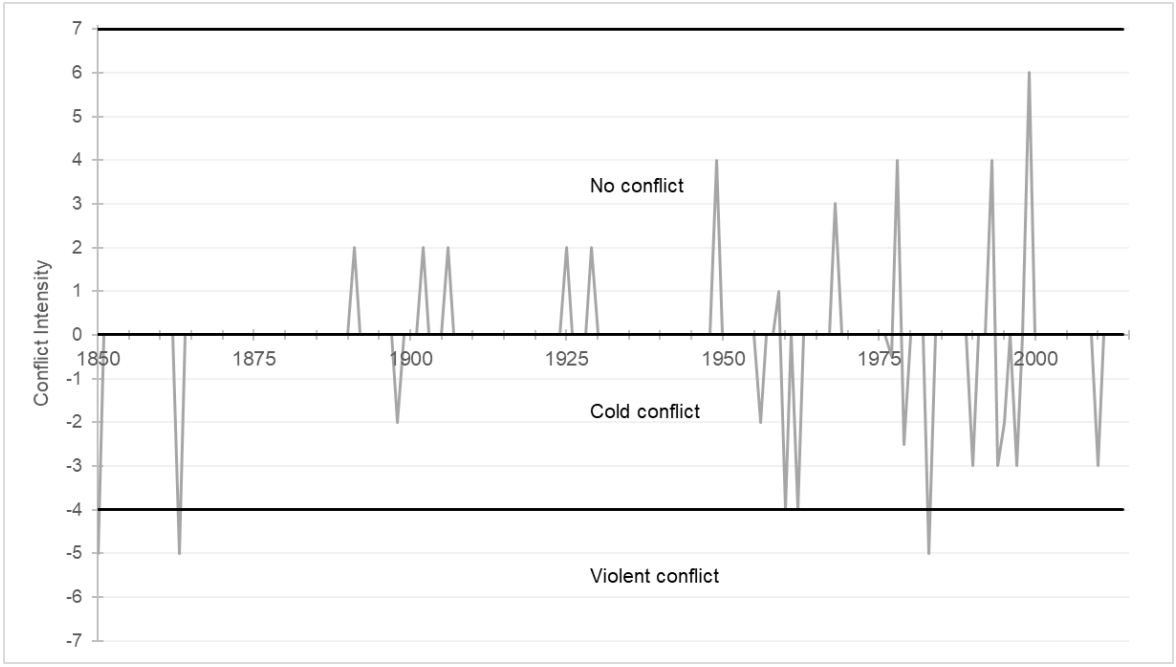



**Figure 3** Summary of the intensity of conflict in the Nile basin in the period 1850- 2015
Note: The Scala from 7 to 0 characterizes a period “without conflict”, from 0 to -4 a “cold conflict” stage, and from -4 to -7 a stage of “violent conflict” (Yoffe & Larson, 2001).

**Coexistence of conflict and cooperation**

This section provides a brief examination of the theoretical framework of TWINS to support the argument that not only is cooperation in the Nile basin doubtful but even if there was a possibility, it would be accompanied by conflict. The TWINS framework is based on two different sets of levels of intensity. The first set of levels is based on the works of Craig (1993, p.15 in Mirumachi and Allan, 2007) about the relationship among conflict and cooperation which both "coexist in various social settings" and the clarification of Zeitoun (2007 based on the CS, Buzan et al., 1998, Neumann, 1998) about conflict intensity. More specifically, conflict among states intensifies according to the prioritization of the issue in the national agenda. This intensity scale is divided into *non-politicized* issues (are not in the public domain), *politicized* issues (part of the public policy), *securitized* issues (regarding existential threats), *opportunitized* issues (chance to get improved), and *violized* (use of violence).

The second set of levels is based on the cooperation intensities classification, developed by Mirumachi (2007 in Mirumachi and Allan, 2007 based on Tuomela, 2000) which is divided into the *confrontation of the issue* (acknowledgment of the issue without action)*, ad hoc interaction* (joint action without shared goals)*, technical cooperation* (shared goals without joint action)*, risk-averting* (shared goals and joint action without undertaking future costs and risks)*, risk-taking* (shared goals, joint actions, cost and risks taken into account). The TWINS framework takes into account a third factor, which is the robustness of the political economies of the states. This is divided into *resource capture* (low), *resource sharing* (medium), and *resource alternatives* (high) and is calculated through the respective Gross Domestic Product (GDP) of each country. The political economy is taken into account because the stronger and more diverse a political economy is, the more available it is to options that involve socio-economic development.

Power asymmetries play an essential role in the TWINS framework. Power in transboundary river interaction is expressed as *coercive powe*r (higher levels of conflict), *ideational* (low levels of cooperation), and *bargaining* ("pseudo cooperation", observed in the low level of cooperation, contestation of the hegemon). Figure 4 applies the TWINS framework in the water interaction between Egypt and Ethiopia. The illustration shows the trajectory of the basin-states' relations over the years since 1955. Both sets of levels of cooperation and conflict are taken into consideration, but not the level of political economy. The political economy could be calculated with the GDP of each state and the higher the level the higher the chances for successful cooperation. The respective cells are marked with a number that shows the course of the relations through time. As illustrated, each conflicting cell goes along with a cooperative action. According to Figure 4, the water issues in the Nile basin never reached the level of a violized action. However, they are strong characterized as politicized. The technical cooperation among the basin-states made the relations securitized and opportunitized. From the illustration is apparent that the topic over the Nile waters is at the moment too securitized to reach a successful risk-averting or risk-taking cooperation. Moreover, in the 2010s, the leap from the traditional and more acknowledged ad hoc cooperation to a risk-averting cooperation was too sudden without any well-established and grounded technical cooperation with politized or even better non-politicized conflict intensity.

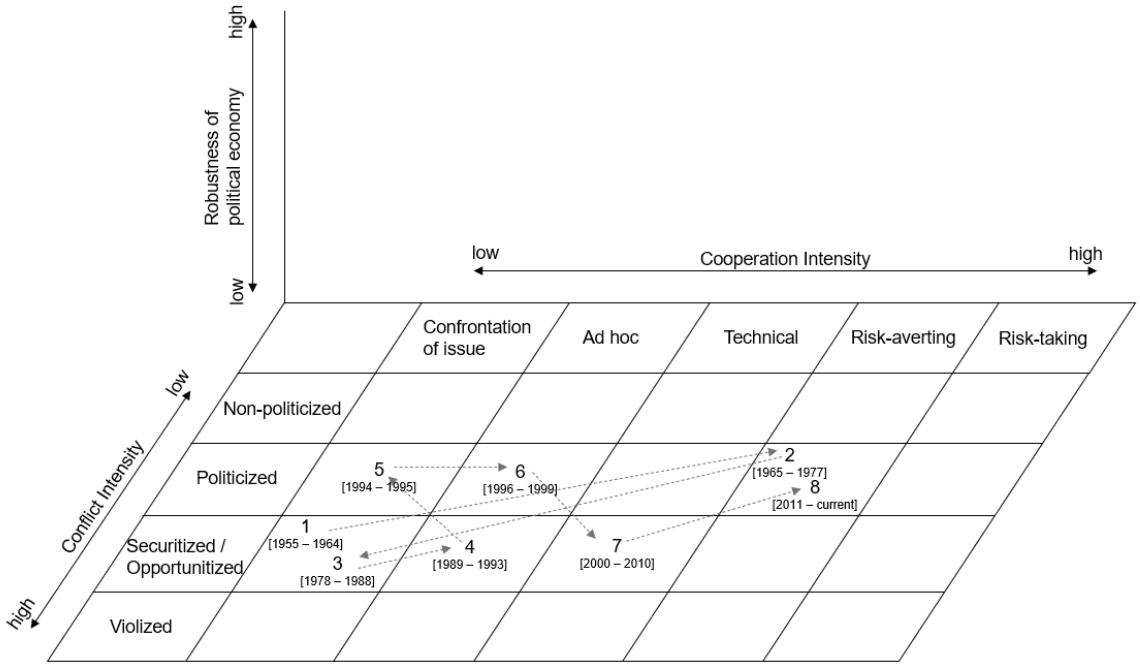



**Figure 4** Trajectory of Egypt - Ethiopia relation over the Nile
(Based on the TWINS conceptual framework by Mirumachi & Allan, 2007)

The TWINS framework agrees with the hypothesis of section 4.1.2, that phenomena such as water scarcity, population growth, and environmental changes are drivers of conflict. However, it adds simultaneously the importance of the role of third parties such as NGOs, the establishment of basin regimes, river basin organizations, or international law developments as drivers of cooperation. Financial institutions such as the World Bank are also important actors which can induce cooperation in a river basin (Mirumachi & Allan, 2007). Despite the high assistance from donors, the Nile basin is still not in a favorable position to be characterized as cooperative. Another reason for this is because of the support for unilateral construction of hydraulic infrastructure.

**Conclusion**

This chapter focused on the second hypothesis of the paper regarding power asymmetries as dividing factors and how could these be used to produce cooperation. This was explored by the theory of hegemony and the theory of counter-hegemony. Moreover, an effort was made to use the TWINS framework which argues that the existence of cooperation signals automatically the existence of conflict. Since the Egyptian independence from the colonial powers, Ethiopia was under threat when it came to Nile utilization issues. The Egyptian policy of active stalling gave Ethiopia the time needed to develop its regional diplomatic power, its internal issues, and its technological capacity to build the GERD. This construction holds the potential to develop Ethiopia into a regional power in the Nile basin. Despite Egyptian diplomatic tactics to block funds and create internal issues, Ethiopia managed to fund a part of the GERD with national funds. This action engages Ethiopia. Should it fail, it would be a huge setback

for the Ethiopian government and its popular support (Tvedt, 2020). In the same way, the Egyptian governments managed to get the support of their people by preserving control over the water resources. Should this fail, it would create the same setback for the Egyptian government too. For this to be balanced, the Egyptian side needs to consider alternatives of water management and reduce its dependency on the Nile, and Ethiopia to recognize the responsibility not to cause any harm downstream. Any possibility of cooperation in the Nile basin will be determined by the level of trust among the riparians. Currently, this is considered as a far-fetched scenario that requires fundamental changes not only in the diversification of the political economy of the riparians but also at the promotion of joint activities. With the application of the TWINS framework in the relations between Egypt and Ethiopia, it was found out that the matters over the Nile waters have become, after the introduction of the NBI, too securitized to lead to a successful ratification of the CFA. It can be assumed that the failure lays in the low robustness of the basin-state's political economies and on the sudden leap to risk-averting cooperation with a topic that is highly securitized and politicized. The development of the respective economies could discharge the Nile River from the securitized and political mantle and an established and transparent exchange of information based on technical typicalities could soften the ground for risk-taking cooperation in the Nile.

### 4.1.4 Cultural differences as a conflict catalyst

This section analyses the third hypothesis which refers to the role of cultural differences among riparian states as a dividing factor in the Nile basin. The is explored, firstly, by the role of religion in transboundary water interaction and, secondly, by the examination of the dependency of middle eastern nations to the "western civilization" as addressed by the theory of Orientalism. The purpose of this chapter is to deepen the scope of the analysis and explore other questions that could shed a light on the complexity of the river Nile and how different perceptions can assist in the conflict resolution process.

**The integration of religion in International Relations**

The role of the Nile in religion is evident from the ancient Egyptians to modern cultural traditions along the river. Throughout history, all the religions that existed along the Nile got influenced by it and were dependent on the Nile waters. The Nile shaped aspects and religious beliefs more than any other river in the world. This lays on the special character of the Nile and mostly on the duality that characterizes it since time immemorial. This duality is apparent in the religious aspect too. The two "High Religions" (Redfield, 1956), Islam and Christianity is an example demonstrating this duality of the Nile. Both Islam and Christianity are mixed in the Eastern Nile Basin. However, in terms of the majority, it is generally considered that Islam represents Northern Africa, thus the downstream Egypt, and Christianity represents upstream Ethiopia. It is an acknowledged fact that both states incorporate different religious traditions among their population. The basin division is made here by giving importance to the religious tradition that represents the majority of the population. Oestigaard (2009) compares in his article the two "great traditions" in terms of the waters of the Nile. In his findings is shown that both traditions incorporate the Nile river into their religious narrative and it has been generally believed that Ethiopians controlled the flow of the Nile (Donzel, 2000; Pankhurst, 2000; p.26, Six, 1999, p.58). This belief was a challenge in the relationship between Egypt and Ethiopia. As for the Muslims of the Nile, it was unacceptable the idea that Christians could control the Nile and had the "religious legitimacy of the precious life-giving water" (Oestigaard, 2009, p.153), a fact which according to Muslims it should be "in the hands of Allah" (Oestigaard, 2009, p.160). In other words, the Nile became for the Egyptians identical with a "divine gift", "a source of wealth, health and prosperity" (Oestigaard, 2009, p.161) and as such cannot be controlled by Christian Ethiopians. With this religious mention, it is considerate to note that the unimpeded flow of the Nile waters (e.g., without the construction of dams upstream of the Nile) lays in the center of the Egyptian beliefs, and because of this sensibility, political leaders tried to claim authority over it, which results nowadays to political disagreement.

It is considerate to add here the findings of Oestigaard (2009, p.161) which manifest the similarities between both religious traditions, in other words, "the overlapping of Nile religions". By investigating the development of classical theological texts, the author argues that the Nile's character made these two religious traditions share the same aspects and beliefs incorporating water issues into their cosmology. Hence, water-related issues make both religions blend and coexist.

**Religion as a channel of conflict and cooperation**

Despite the similarities of both religions, the "divine" character of the Nile makes both religions claim authority over it resulting in the formation of religion, as Baechler (1999, p.114) calls, as a "channel" of conflict. Through the development of a model called the Multiple Causal Role Model, Baechler (1999) analyses environmental conflict management systematizing reasons of conflict or cooperation, targets, triggers, catalyzers, and channels. The latter (channels) identifies among others, that religion is a part that influences indirectly conflict and cooperation. A significant role plays here the way religion is expressed. In cases that religion is expressed as means of group identification, it can be considered a cause of conflict. However, when used as a common ground of understanding then it can be a supporter of cooperation (Mason, 2003).

The fact that the cultural differences add as factors of impeding cooperation in the transboundary water interactions of the Nile River is being also demonstrated by examining two different legal cultural traditions. The first one refers to the tradition of international watercourse law and the second one on the Islamic legal tradition of Sharīʿa.

A detailed examination of this division is made by Mallat (1994), who, to enrich the debate on water-sharing, points out the importance of considering the proposals of the Sharīʿa in the resolution of water rights. Based on the timelessness of this tradition compared to the relatively new development of international water law and the relevant topology of the development of the Islamic legal tradition, he points out the importance of the Nile river which is capable of "bringing together perspectives which have been traditionally opaque to each another" (Mallat, 1994, p.381).

The analysis of the international water law and the agreements upon the Nile (see 4.1.5) contribute to the formation of a comprehensive framework of the legal status of the Nile. However, very little exploration has been given to the domestic law which applies within the sphere of a middle eastern state. It is therefore interesting to look into the Islamic legal tradition as it demonstrates the indigenous beliefs. The exploration of this tradition can offer some enlightenment to the debate on the sharing of water resources. The focus is given to two principles that relate to transboundary water interaction. The first one refers to the principle of no significant harm to the downstream countries which share the same transboundary river with an upstream country. The Islamic law or the Sharīʿa seems that is in agreement with the international water law of no significant harm for the downstream countries ("*La darar wa la dirar"* no-fault injury rule see Mallat 1994, p.376). The second one refers to the principle of prior rights ("*ad-darar la yakun qadlman"* see Mallat 1994, p.376) which means that the upstream has a priority to use the water, especially in cases of water scarcity, however, the upstream is not allowed to disregard or supersede an established use. As Mallat (1994) suggests, the appropriate governing of the Nile could come from the merging of the different legal traditions or in other words a "confluence of models" (Mallat, 1994, p.381).

**The binding nature of Orientalism and the perpetuation of the inferiority feeling**

This section is an effort to connect Orientalism, developed by Said (1978), with transboundary water interaction analyzing the hypothesis that the lack of regional cooperation in the Nile basin is rooted not only in opposed religious traditions but also in their past of being represented by the western "superior" civilization. This results in the fact that riparians with a history of representation tend to take regional matters for resolution at an international level or stay attached to colonial agreements without the interest in renegotiating with regional powers. In other words, this dependency path, that middle eastern economies follow tend to make them see a regional topic with international lens. This fact results in their incomprehension with their regional legal traditions, such as the Islamic legal tradition, whose interpretation in transboundary water interaction could shed a light on the conflict resolution.

In the post-Renaissance period, the development of the humanities in Europe had an impact on the lack of understanding of the Orient. The misinterpretation of the Orient by viewing it from a European perspective resulted in the feeling that the Western world is, as Said (1978) named it, "superior" to the Orient. From the 19th until the 20th century, "the Occident" promoted an intellectual tradition that strived for the total control of the Orient, even if it was only unrevealed. The western understanding of the history of Egypt stayed marginalized and was influenced by the international balance of power as well as the prevailing thinking among the intellectual travelers. Tvedt (2020, p.86-91) named Gustave Flaubert or Henrik Ibsen in his book *Peer Gynt,* as examples of the European impact on the European perception of the Orient. Their works (as European authors) defined what "the Orient" is and Europe was defined as the opposite of the Orient.

Such a perspective, which reflected the contemporary industrial Europe, overlooked Egypt's developmental obstacles and could not, therefore, deal with them. In the 19th century, Europe was getting into the era of industrialization with the development of the water wheel which resulted in nutrition and agriculture and with the revolutionized production technology in the iron and textile industry. In the meantime, this industrial production was impossible for Egypt, due to the fluctuating water level of the Nile. The civil structure and economy had to continue to adapt to the natural course of the Nile. The "mentality", as Ibsen stated, was not the reason for this non-productivity. Rather, Egypt didn't have the necessary technology for the utilization of the Nile as an energy source. In Egypt, there is no alternative water source that could have been used, as was the case in Europe. The literary works at the time dealt with and presented the mentalities of the people and the ways of thinking. Geographical contexts and structures found no place in this historical picture. This is the reason why "the Occident" had the superiority syndrome and the Orient the need to be represented.

This representation need is demonstrated during the colonial era. The theory of path dependency, as analyzed in the theoretical framework, could explain the crucial positioning of Egypt towards its historical rights or towards a resolution of the disagreement regarding the GERD in an international context and not regionally. Even after Nasser's nationalistic policy, the colonial influence over Egypt left only physically. Until today there is a historical bond between "the west" and Egypt, which is visible in Egypt's positioning regarding the resolution of transnational issues such as the Nile. Therefore, any efforts of regional cooperation cannot be taken for granted as Egypt lacks a cooperation history with other African states. Historically, regarding the regional policy, either Egypt was superior, for example with

Muhammad Ali's imperialistic policy or Egypt under the Nasserist ideas of Pan-Arabism, or all the states served as colonies of the European powers.

It is however acknowledged the fact that despite the disadvantages that colonialization caused to the middle eastern world, some developments would not have been able without it. For example, the hegemonic position and the monopoly over the Nile water resources by Egypt would not have been able without the initial support of Great Britain. As it will be in the next chapter discussed, behind the legal agreements regarding water allocation of the Nile and the non-construction of works upstream of Nile, it was the influence of the colonial powers which made it possible.

**Conclusion**

The sensibility of the issue does not allow to erase or ignore other hypotheses from the examination of the Nile. This is the reason why this chapter dealt with the analysis of alternative hypotheses regarding the water issues of the RNB. These cannot work independently from a geopolitical analysis, but rather collectively with it. Therefore, it is important to take into account, firstly, that the theological differences among the cultures of the Nile increase the possibility that the political disagreements are being fed by the religious belief of the unimpeded flow of the Nile waters. Secondly, it is important to take into account the possibility of the oriental inferiority feeling, which was defined by the European powers as they were developing their humanities field and it resulted in the definition of Europe and the west as something opposite from the Orient. A fact which leads to an independence need but at the same time to a binding with the former colonial powers cultivated through the dependency path. In conclusion, reading the issues over the Nile River in a holistic manner and not researched merely from individual fields can result in a deepened comprehension of the situation and of the complexity which in turn adds to the conflict resolution process.

### 4.1.5 Legal invalidities and institutional failure

The last section of the argumentation about the dividing forces in the Nile basin offers a discussion based on the paradoxical hypothesis that cooperation is impaired by the existing legal arrangements and institutional initiatives. At first, the validity of the legal agreements among the riparian states is explored to support the hypothesis that conflicting aspects come to the surface due to different legal principles that the respective riparians follow. This is followed by the second hypothesis which includes a discussion of the paradox of how the international water law can act as a conflict catalyst. This chapter acknowledges the liberalistic school of thought about the importance of institutions for the development of cooperation but explores how even institutionalism in the Nile basin failed to promote efficient political cooperation. The following Figure 5 illustrates the course of initiatives and institutional establishments over time.

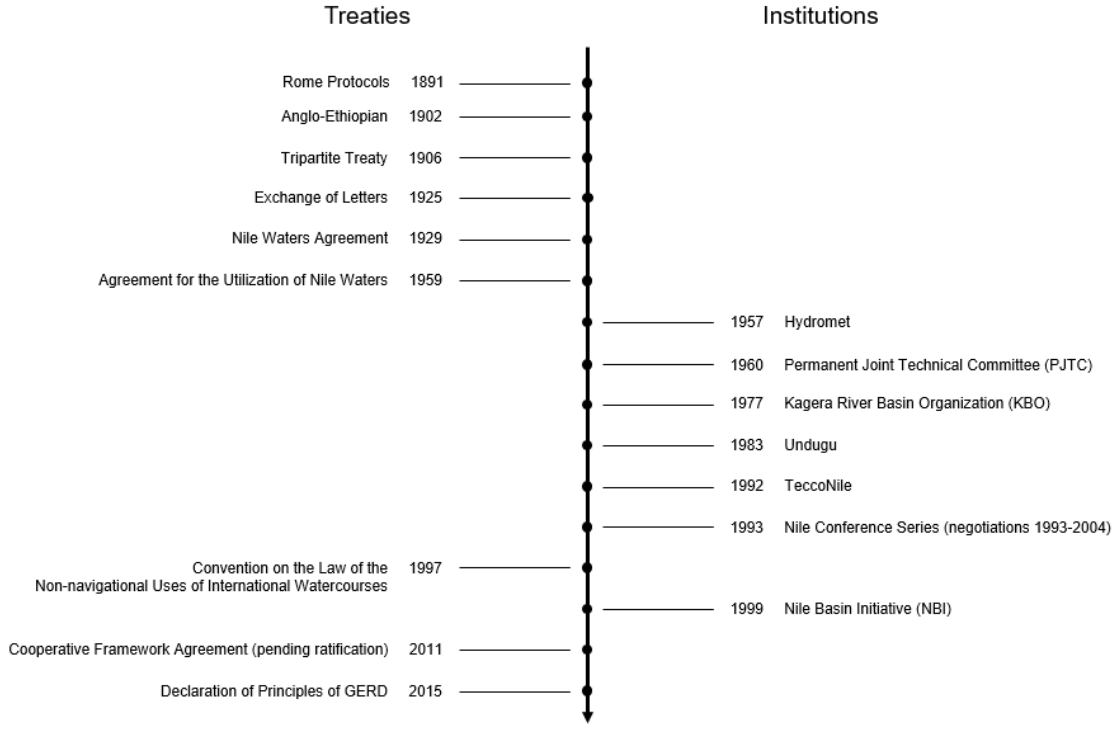



**Figure 5** Timeline of initiatives and agreements in the Nile basin since 1891

#### The validity of the regional and international water agreements for the Nile basin (1891-2015)

Over the centuries, kingdoms and empires established outposts or exercised control over various parts of the present African states. These include the Ptolemaic Egyptians (3rd C. BC), the Sennar kingdom (16th-19th C.), the Abyssinian kingdom (14th-18th C., 19th C.), the Adal sultanate (15th-16th C.), the Aussa sultanate (16th-19th C.), Egypt under Muhammad Ali (18th C.), and the Ottoman Turks (16th-19th C.). The majority of African states came into being after the European colonial period and were able to draw accords affecting the Nile without the control of the European powers. In the Nile basin, only Egypt and Ethiopia had some sort of sovereignty, however questionable. The issue that results from the legal

history is whether the now independent states are bound by the legal agreements negotiated and signed on behalf of them by the imperial powers. The main objective of this chapter is to identify and analyze the dilemmas that have been troubling the riparian states in terms of legal approach. This is based on a review of the regional and international legal constructions starting from 1891 until 2015.

**The confidentiality of the Rome Protocols of 1891**

Out of these two signed but not ratified protocols that escaped public attention was formed the first legal basis of the management of the Blue Nile waters. The protocols were not *per se* about the Nile waters but they included articles that are evoked by the states until today.

The first protocol signed March 24, 1891, entitled "A Protocol between the British and Italian Governments for the Demarcation of Their Respective Spheres of Influence in Eastern Africa from the River Juba to the Blue Nile" demarcated the spheres of influence that were allotted to Italy from Britain[4]. The second protocol signed April 14, 1891, which included the demarcation of the Red Sea, contains Article III which reads as follows: "The Italian Government engages not to construct on the Atbara, in view of irrigation, any work which might sensibly modify its flow into the Nile". According to that Article, Italy pledged to do nothing to impede the flow of the Atbara River. In 1889, despite the Italian recognition of the full sovereignty of Ethiopia, Italy proceeded to the ratification of the Treaty of Ucciali (The Treaty of Ucciali or Wichale). With this treaty, the northern part of Ethiopia (modern Eritrea and Tigray) was granted to Italy in exchange for money, muskets, and cannons. Article XVII of the Treaty stated that Italy "could" intervene in the external relations of Ethiopia, at least in an Amharic version. However, the Italian translation of this article states that Italy "must" intervene in the external relations of Ethiopia (Tesfaye, 2001). This interpretation and translation issue was gaining some acceptance in Europe and made Italy claim Ethiopia as a protectorate (Okoth-Owiro, 2004). In September 1890 King Menelik II of Ethiopia repudiated their claim and in 1893 officially denounced the entire treaty. Italy attempted to impose a protectorate with force resulted in the battles of Adwa on March 1, 1896. The defeat of Italy resulted in the Treaty of Addis Ababa (October 26, 1896) where Italy acknowledged the absolute independence of Ethiopia but was allowed to retain Eritrea. Ethiopia was acknowledged in Europe as a real political power, a fact that increased its international reputation and moved Ethiopia from the Italian influence to the French influence. At that time the French policy intended an African empire which stretched from the Atlantic Ocean to the Red Sea (Harris, 1969). However, the French influences delimited with the exchange of notes in 1898 and a declaration in 1899, as a result of the Fashoda incident in 1898. With this incident began a new era of the settlement of the Anglo-French differences[5].

[4] The term "sphere of influence" was used as a form of declaration established by a treaty between two or more controlling nations who agreed not to interfere with the other's territory. It meant competition among the controlling powers over the control of a territory. Although, after the first World War the term lost its legal power which resulted in the renunciation of the economic rights of Italy upon its sphere of influence.

[5] The Fashoda incident symbolized the climax of European imperialism in Africa, where the French government tried to rule the Upper Nile River basin excluding Britain. After a substantial tension, the French withdrew and the Anglo-Egyptian powers controlled the area. The status quo of the British control of Egypt was recognized and the Anglo-French relationship seemed to start settling.

Godana (1985b) and Garretson (1960) observe that regardless of the parties of an agreement, whether that is European powers among them or a European power with an African state, in both cases, the upper riparian states had the "standard obligation" to recognize the security of the water supply to lower riparian states. However, Kasimbazi (2010) focusing on the geographical fact that the Atbara river was not at the sphere of influence of Italy, argues that the protocol should not be seen as an agreement over property rights of the river Nile but as an intention of setting boundaries at the competition of the European powers upon the spheres of influence. Because of the vagueness of the language used in the protocols, Kasimbazi (2010) argues that it cannot create the fundamental historical base as an agreement of property rights over the Nile waters.

Nevertheless, it seems that the protocol of 1891 served both purposes. From one side, it was Britain's utmost interest to secure the recognition of Egypt's water rights from the upper-riparian states. Not on account of "good faith" but on behalf of its economic dependence on Egypt's cotton and agriculture products. On the assumption that any works were to build upstream of the Nile, it would create a water deficit to Egypt resulting in its export inability to serve Britain's needs. From another perspective, for Britain having a powerful colony reflected its status quo. After dealing with France for Egypt, it is not in Britain's interest neither to allow works on the Nile to the detriment of Egypt's status nor to lose its influence on Egypt. This also explains the reasons why Britain signed the agreement with Ethiopia in 1902, as it is later on analyzed. From the other side, the protocols illustrated, indeed, a boundary at the spheres of influence in a time where competition among the European powers peaked. It is considerate to add that both Egypt and Sudan challenged the validity of the agreements where Britain was part, resulting in embracing different resolutions. Their invalidity is much more endorsed from Ethiopia which has no benefit from the protocols, whatsoever (Garretson, 1960).

**The leonine Anglo-Ethiopian Treaty of 1902**

With the two protocols, Italy gained influence over Lake Tana, Atbara River, and the headwaters of the Blue Nile. However, after the Italian recognition of the Ethiopian sovereignty in 1896 (Treaty of Addis Ababa October 26, 1896), France took this opportunity to form an alliance with Ethiopia to confront the British and to establish itself at the core of the Blue Nile (Waterbury, 1987). After the failure of this plan, Britain proceeded into claiming its influence upon Ethiopia with the treaty of 1902.

On May 15, 1902, Britain proceeded to a bilateral treaty with Ethiopia. This agreement aimed at the regulation of the establishment of boundaries between Ethiopia and Sudan. Moreover, Article III of the agreement reads:

> His Majesty the Emperor MENELEK II, King of Kings of Ethiopia, engages himself towards the Government of His Britannic Majesty not to construct or allow to be constructed any work across the Blue Nile, Lake Tsana or the Sobat, which would arrest the flow of their waters into the Nile, except in agreement with His Britannic Majesty's Government and the Government of the Soudan" (Ullendorff, 1967).

This affirmative sense of the Article was added against a possible unilateral action to "cut" the waters of the Nile before any mutual agreement is reached. In a sense, the Article serves as a *precautionary principle* that limits the scope of action of Ethiopia before any environmental and social matter occurs

downstream. It is considerate to add some essential arguments that have been discussed in the bibliography.

Kasimbazi (2010) viewing it from a legal perspective, claims that because of the changing of the water situations since 1902, this article is "inapplicable" based on the doctrine of *rebus sic stantibus* ("in present circumstances"). Furthermore, Waterbury (1987) observes historically that the agreement lacks ratification from the side of Ethiopia because of the alteration of the meaning of the article to the Amharic version. Thirdly simply by examining the facts, it becomes apparent that later in 1925 the British position contradicts itself as Britain agreed to the construction of a dam in Ethiopia, a fact which conflicts with Article 3 of the 1902 agreement.

To sum up, the treaty of 1902 reserves the rights and privileges of one party and leaves the counterpart without any compensation. Garretson (1960) calls the 1902 treaty, a *pactus leoninus,* an imposed an unequal treaty. The reason why Ethiopia would imprudently proceed to such an agreement where its rights to the Nile are unquestionably conceded is defined by Woldetsadik (2015), as an act of *cordial milieu* with France and Britain as Emperor Menelik had gained economic and political confidence both in local and regional affairs after the defeat of Italy at the Battle of Adwa (March 1, 1896).

The fact that Ethiopia and Italy approved at that time and reaffirmed the agreement of 1902 between Britain and Ethiopia means that all signatures including Ethiopia agreed not to construct any works. The agreement of 1902 states that Egypt has an interest of Nile waters being preserved as safeguarded by Britain.

**Britain, France, and the Italy Tripartite Treaty of 1906**

Britain, France, and Italy[6] proceeded in the Tripartite Treaty on April 3, 1906 (originally signed December 13, 1906) with the objective of "maintaining the political and territorial status quo in Ethiopia", for non-intervention in Ethiopian internal affairs and consultation among the three parties (Streit, 1935). It is interesting to add the inconsistency of this treaty as, on one side, it recognized the validity of the Anglo-Italian Protocols of 1891 and the agreements of 1894 and 1895, defining Ethiopia as an Italian protectorate[7] and the agreement of 1902 (concerning spheres of influence). On the other side, it defines

[6] All three countries had a huge interest in the railway between Eritrea and Somaliland. For Britain, it was important because of the controlling of the Nile and a share on the railway. For the French and the British, it was necessary to sign the treaty, the sooner the better, before Ethiopia attempted to ask Germany about it. This means Ethiopia was of great geopolitical importance for France and Britain and didn't want that Ethiopia would take the side of Germany. Especially after the Ethio-German commercial treaty was signed in 1903. Germany wanted a share in the Ethiopian market and claimed that its intention was only for business purposes. Ethiopian purpose was financial support to build a railway. For Britain, the adding of another power into the Horn of Africa was very unsatisfying. Because Britain wanted to take Germany out of the African picture, agreed to the construction of the railway. Not only Germany but also other powers were being at that time interested in Ethiopia. France's demand referred to the economic spheres of influence which each county could exploit separately. Moreover, Italy signed this agreement because the Italian ambassadors argued in London that a bilateral treaty between Britain and France would seem bad to the Italian public opinion. That is the reason why it was considered right to add Italy to the agreement (Marcus, 1964).

[7] The agreements of 1894 and 1895 concern frontiers, they do not modify the spheres. They protect the French railway from Djibouti to Addis Ababa.

the maintenance of the status quo and the integrity of Ethiopia. With this Treaty, the protocols and the treaty of 1902 are being prolonged and extended.

Article 4a of the treaty implies that if any violation of the integrity of Ethiopia happens, the three parties shall "concert together" to safeguard "the interest of Great Britain and Egypt in the Nile Basin, more especially as regards the regulation of waters of that river and its tributaries (due consideration being paid to local interest without prejudice to the Italian interests mentioned)" (Tripartite Agreement, 1906, p.2). This means that both interests such as the integrity of Ethiopia and the interests of Britain and Egypt are to be taken into consideration but in no case should the interests of the latter on the Nile be violated. For Britain, the treaty assured the sovereignty of Ethiopia and therefore European non-interference with the water sources of the Blue Nile. In case of any future Ethiopian disintegration then Lake Tana had to be included in London's sphere of influence.

In retrospect, the 1891 protocol defined (with the consent of Britain) that any economic interests on the Nile are given to Italy. With the annulation of the Treaty of Ucciali in 1893, Italian and Ethiopian armies engaged in hostilities (among them the Battle of Adwa, 1896). At that point and until the 1902 agreement Ethiopia had the full freedom of utilization of the Blue Nile. Until after that, the Blue Nile belonged again to Britain's influence (on behalf of Egypt) but still without the ratification of Ethiopia. This gives Ethiopia still the full control of the Blue Nile. This fact was paradoxically ignored in the 1906 agreement where indirectly some Italian interests were mentioned. To sum up, the 1906 agreement seemed like a second effort from Britain's side after the non-ratification of the 1902 agreement (on behalf of Ethiopia), to safeguard its interests on the Blue Nile against other European powers and Ethiopia (Marcus, 1964).

These agreements were all supplements to one another and none of these superseded the others and still, they are contradictory regarding the Blue Nile. Nevertheless, Italy accepted the 1906 treaty despite its paradox and claimed Ethiopia as a protectorate, whereas Ethiopia rejected it at first and denied to sign, as it explicitly undermined its interests. Notwithstanding, after a great extent of pressure from the European powers and with the justification of the necessity of the "parliamentary exigency", Ethiopia officially accepted the tripartite agreement on December 10, 1906, with the understanding that Ethiopia's claimed sovereign rights were not infringed by the agreement "[…] this arrangement in no way limits what we consider our sovereign rights" (Marcus, 1964, p.38). With this affirmation, it is raised the question of whether a written affirmation but not a signing still binds the state from the articles of a treaty. If so then Ethiopia with the agreement of 1906 gained stability and protected national integrity from the European powers but no rights on constructing anything on the Blue Nile that would harm the interests of Britain and Egypt.

**Exchange of Letters between Britain and Italy (1925): The Sovereignty Question**

The Anglo-Italian Exchange of Notes of December 1925 has been commonly viewed as an arrangement whereby Britain and Italy considered overriding interests in Ethiopia. The former was interested in the availability of water supply from Lake Tana, the latter sought economic influence. The acknowledgment of the sovereignty of Ethiopia did not impede Britain and Italy to proceed in obtaining concessions in Ethiopia.

In an exchange of letters starting from 1919, Italy proposed to Britain to claim their concessions in the respective areas in Ethiopia. The British were to get a barrage at Lake Tana and a motor road from Sudan to the Lake, and as an exchange, they had to assist Italy in creating a railroad connecting Eritrea and Somaliland running to the west of Addis Ababa (Jones & Monroe, 1965). At first, the pledge was not affirmed by Britain but after the Fascist Regime started establishing the idea of Italy as a great power with Mussolini coming on power (1922), Britain changed its position and confirmed the pledge in an exchange of notes in December 1925. With these letters, Britain implicitly ignored the annulation of the Treaty of Ucciali in 1889 and suggested that Italy was still responsible for Ethiopia's external affairs (Waterbury, 1987). The agreement obliged Italy not to impede the flow of the Blue Nile and other tributaries to the White Nile, thus not constructing any work that might "sensibly modify" their flow and recognize the "prior hydraulic rights"[8] of Egypt and Sudan. Moreover, to satisfy the Italian economic interests and the economic needs of Ethiopia's population, Italy pledged for the admission of some works as long as they did not impede the predominant ("paramount") interests of Egypt and Sudan[9]. Kasimbazi (2010) interprets this as Ethiopia was allowed the construction of dams for hydroelectric power as part of the necessities of the inhabitants. Britain disagreed and suggested arbitration from an independent body in case of future difference of opinions[10]. Nevertheless, the agreement of 1925 created an international turmoil, with Ethiopia seeing their sovereignty threatened and with the French feeling disregarded for not taking part in that (Stern, 1936).

The exchange of letters resulted in two political incentives. On one side, France claimed that this is a violation of the Treaty of 1906 and proceeded to the renunciation of Italy's economic rights in Ethiopia. This resulted in a conflict in East Africa between Italian troops and Britain (Streit, 1935). On the other side, Ethiopia, as a member of the League of Nations, received the fact as a total insult of her rights on Lake Tana and protested the accord: "We should never have suspected that the British government would come to an agreement with another government regarding our lake"[11] (Jones & Monroe, 1965).

[8] A Statement of the British High Commissioner in Sudan in 1925 assures the Egyptian Government that the British Government has no intention of trespassing upon the natural and historic rights of Egypt in the waters of the Nile, which they recognize today no less than in the past (Garretson, 1960).

[9] The Italian Government's response on December 14-20, 1925 reads:

> I note that His Britannic Majesty's Government have every intention of respecting the existing water rights of the population of neighboring territories which enter into the sphere of exclusive Italian economic influence. It is understood that, insofar as is possible, and is compatible with the paramount interests of Egypt and the Sudan, the scheme in contemplation should be so framed and executed as to afford appropriate satisfaction to the economic needs of these populations (Garretson, 1960, p.140).

[10] The Exchange of Notes between the United Kingdom and Egypt, signed in Cairo on May 7,1929,17 paragraph 4 in (b), reads:

> Save with the previous agreement of the Egyptian Government, no irrigation or power works or measures are to be constructed or taken on the Nile River and its branches or on the lakes from which it flows, so far as all these are in the Sudan or in countries under British administration, which would, in such a manner as to entail any prejudice to the interests of Egypt, either reduce the quantity of water arriving in Egypt or modify the date of its arrival, or lower its level…in case of any difference of opinion arising as to the interpretation or execution of any of the preceding provisions or as to any contravention thereof, which the two governments find themselves unable to settle, the matter shall be referred to an independent body with a view to arbitration (Garretson, 1960, p.140).

[11] France and Italy agreed on adding Ethiopia to the League of Nations in 1923. The reason why Ethiopia got driven in the League of Nations was because of the British press characterizing the British mandate as "slave-ridden Ethiopia" (Streit, 1935).

**The 1929 Nile Waters Agreement**

The Egyptian annexation to Britain happened in the middle of the first World War (1916). However, a series of revolutions resulted in the partial independence of Egypt in 1922. The independence was considered partial, as Britain was in charge of the external affairs of Egypt. The British external affair policy of Egypt was characterized as twofold. On one side, Britain wanted that the Nationalist government of Egypt cooperates with Britain. As the British industry had enormous interests in the cotton industry, planned a scheme of irrigating an area in Sudan. This would have reduced the amount of water that the Egyptian farmers would receive and thus retaliate against the government. However, it didn't go as expected. The Egyptian nationalistic government after realizing the British policy, requested a full independence from Britain. This was one example where Britain used the Nile as a "weapon". The Nationalistic government exposed the policy of Britain which was that, outwardly, they would guarantee for the water, but in reality, they were ready to use it as a weapon against the Egyptians if they saw their interests endangered. On the other side, by the late 1920s, Britain changed its Nile strategy towards Egypt. In 1929, to take the Egyptian elites on its side, Britain, on behalf of the East African colonies, signed an agreement, that is until today of great importance.

An exchange of letters on May 7, 1929, between the Egyptian prime Minister, Mohammed Mahmoud Pasha, and the British high commissioner Lord Lloyd on behalf of Sudan and the East African riparians established the 1929 Nile Waters Agreement (Exchange of Notes,1929). The purpose of the 1929 Agreement was "examining and proposing the basis on which irrigation can be carried out (in the Sudan) with full consideration of the interests of Egypt and without detriment to her natural and historical rights". It was about the cotton industry of Britain in Sudan and a need for a plan to irrigate the area between the Blue and the White Nile (known as the Al-Jazirah scheme). The accompanying to the Agreement Nile Projects Commission Report of 1920 suggested in quantitative terms the acquired rights of water use for Egypt and Sudan. For the former, the amount was 48 billion $m^3$ and for the latter 4 billion $m^3$. This allocation guaranteed water supply which derived from the irrigation needs at that time.

The 1929 agreement included, first of all, the importance of preserving the historical rights of Egypt to the certain minimum discharges. Secondly, an irrigation plan for 100.000 acres in Al-Jazirah by the construction of a canal from the Blue Nile. It was then under consideration that including the construction of a new dam would increase the irrigation area to 300.000 acres. The Egyptian side proposed the building of a dam at Jebel Awliya on White Nile, upstream from Sudan which would assist to flood control and it would serve as water storage for the summer months in Egypt with the help of the already built Aswan Dam. The 1929 Agreement included also a clause which restrained Britain to proceed to the construction of any works upstream of the Nile and on its tributaries, should this construction reduce the flow of the waters (The Nile Waters Agreement, 1929).

Therefore, the 1929 agreement recognized, firstly, the need for water supply in Sudan due to developmental schemes and, secondly, the historical and acquired rights of Egypt to the Nile. Britain assured that the upstream countries would have no interest in the utilization of the Nile as they were favored from the rainy climate. The most important thing that was implemented with the 1929 Agreement was the Egyptian assumption of the veto right against any projects upstream of the Nile which would reduce its share on the Nile. With this diplomatic game, Britain assured Egypt that London is in favor of

Egypt and can guarantee the water supply to Egypt. This agreement provided the basic framework for economic development throughout the Nile region for the remainder of the British period. The 1929 agreement, more than any other diplomatic factor, determined also the post-colonial era along the entire course of the Nile (Tvedt, 2020).

The purpose of the 1929 Agreement was setting limitations on the time and the quantity of the extracted water from the Blue Nile. That meant that limitation from withdrawal would be from January the 19th until July the 15th (dry season) during the low season of the Blue Nile and the high season of the White Nile. This was the settlement between the states at that time and the quantity that they out at stake was not that important as the timing (Hodges, 1979). Apart from Egypt and Britain, no other state took part in this agreement. Ethiopia up until today does not recognize this agreement nor the Egyptian acquired rights. Uganda, however, considered 1929 to have expired by the end of 1963. Sudan having become independent in 1956, questioned the validity of the agreements signed by the former colonial powers.

The utilization of the Nile creates a circular conundrum[12] which means that any utilization efforts upstream "harms" the downstream countries, as the water supply decreases and vice versa, any utilization downstream "harms" environmentally the upstream countries. The typical example of the second case is the OFD in 1949 with the environmental issues on Lake Victoria caused by Egypt[13].

**The Agreement of 1959 for the Full Utilization of the Nile Waters**

Until the 1950s the control of the floods was the only problem that ought to be regulated by the states. After that time two more basic problems were added. The drastic increase of the population and the growth of the economies created a unified goal "of the full utilization of the Nile waters" for both Egypt and Sudan. Egypt insisted on the validity of its "acquired rights" and to be generally established by all riparian states, proceeded to the 1959 Agreement as an independent state with Sudan as an independent signatory also. Egypt and Sudan did not only claim their "acquired rights" from time immemorial but also, "reserved" rights, basically the water allotment which came into force with the 1959 Agreement. The dominant position of the downstream countries is being reaffirmed with Article 5 (2) of the Agreement, which reads:

[12] The circular conundrum is solved in the game theory and creates three different scenarios for the Nile basin. The first one is the formation of a decentralized system with liberal economies and without sovereignty. The second scenario would be the promotion of compensations to actors which would be harmed with any water utilization from other riparian states. The third scenario describes the situation as it is today without any cooperative initiative or effort towards it. A more detailed demonstration of the circular conundrum in game theory is described by Spulber (2009, p.17-35).

[13] On May 10, 1949, in an exchange of Notes, Uganda (represented by the United Kingdom) accepted the "acquired and historical rights" of Egypt and agreed that Uganda would be in charge of the Electricity Board but the discharge would be controlled by an Egyptian engineer. On July 16, 1952 (a subsequent exchange of Notes) Egypt provided financial compensation to Uganda for raising the dam one meter above the level needed for hydroelectrical power. In addition, Egypt was to pay compensation to the lake states for any environmental damages as a result of the rise if the lake due to the operation of the dam. This principle (using the water for national interests, causing environmental damages, and paying the state's compensation to repair the damages. Instead of doing no harm to the environment and regulating their interests according to environmental standards) contested the Kenyan parliament when in the 1960s the water level of Lake Victoria rose unexpectedly by two meters. Some argue this was caused because of rainfall. Others claim that it was an Egyptian measure to fill the AHD. For more, see Waterbury (1987).

> "As the riparian states, other than the two Republics, claim a share in the Nile waters, the two Republics have agreed that they shall jointly consider and reach one unified view regarding the said claims. And if the said consideration results in the acceptance of allotting an amount of the Nile water to one or the other of the said states, the accepted amount shall be deducted from the shares of the two Republics in equal parts, as calculated at Aswan" (Agreement of 1959, p.4).

The quantity measured in Aswan has been settled to 84 billion $m^3$. This has been shared between Egypt (55.8 billion $m^3$) and Sudan (18.5 billion $m^3$). The rest 10 billion $m^3$ have been considered as evaporation losses. Sudan had to proceed to the construction of the Jonglei Canal to reduce the evaporation losses in the Sudd. The costs and the benefits of this canal were agreed to be shared between Sudan and Egypt. After the failed attempt of the Jonglei canal, Sudan managed to construct the Roseires dam and Egypt managed the successful enlargement of the AHD.

The agreement of 1959 serves as a manifestation of the Egyptian dominance over the Nile in front of all other riparian states. However, Kasimbazi (2010) observes that the agreement of 1959 lays under the international law principle of *res inter alios acta*[14]. As such it can create obligations for the signatory parts but does not bind the other riparian states without their consent.

**The Convention on the Law of the Non-navigational Uses of International Watercourses 1997**

The implementation of the generally accepted principles of international law is only necessary in case of the absence of bilateral or multilateral agreements (Biswas, 1993). In the assumption that the colonial Nile treaties are not binding or valid, then the only agreement signed by independent states regarding the Nile would be the 1959 agreement. As this agreement is not signed by all riparians, it is therefore, necessary to turn into general principles of international law. Waterbury (1987, p.95) claims that "it is not clearly established in international law whether newly independent states must accept obligations assumed by treaty in their name by colonial or imperial powers". The international law regarding water resources is characterized by vagueness and has not a general acceptance from the riparians. On the lack and the controversy that the international water law offers, it is interesting the fact that according to the national interests of each country, the riparians declare several contradictory principles stemming from the international law to legally support their arguments. For example, the upper riparians adopted the Harmon doctrine, and the lower riparians, the absolute territorial integrity principle. The third principle, which is according to writers and scholars, generally accepted today is the principle of "reasonable utilization" (Godana, 1985). While each state has the right to utilize the water resources within its territory, it may not proceed to any action which would affect the other basin states. On May 5, 1997, the customary law on water utilization took the status of the law after the Convention on the Law of the Non-navigational Uses of International Watercourses (36 I.L.M 700, 1997). Article 5 of the convention states that the states that share a common basin shall utilize the water resources in a reasonable and equitable manner. Article 6 specifies the relevant factors which should be taken into

[14] This principle holds that a contract cannot adversely affect the rights of one who is not a party. In the context of international law and the conclusion of treaties, see Article 34 of the Vienna Convention on the Law of Treaties (1969), 1155 UNTS 331.

account when it comes to the utilization of a transboundary river basin. These are "…(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 each watercourse State; (d) The effects of the use or uses of the watercourses in one watercourse State on other watercourse States; (e) Existing and potential uses of the watercourse; (f) Conservation, protection, development and economy of use of the water resources of the watercourse and the costs of measures taken to that effect; (g) The availability of alternatives, of comparable value, to a particular planned or existing use". Article 7 imposes the "obligation not to cause significant harm" to another basin state. In case that any state is, despite everything, harmed, then measures should be taken to eliminate the harm and, if appropriate, to proceed to compensation.
Like most of the international texts, the law on the utilization of shared water resources does not provide any unambiguous process for the states to follow. Thus, it does not provide a satisfactory framework for the regulation of shared water resources.

**The Cooperative Framework Agreement (CFA)**

The highest point that established the political path of the Nile waters agenda was the CFA. The signing of the CFA in 2010 from five upstream countries; Ethiopia, Kenya, Rwanda, Uganda, and Tanzania signaled the first thoughts of some upstream countries that such an action could bring military action from Egypt. As for the two downstream countries; Egypt and Sudan, the allocation of the waters of the Nile became an issue of national security. Although two more countries were in favor of the CFA; Burundi joined in 2011 and Kenya gave its oral support of the agreement. For the upstream countries, the CFA is significant to promote development projects on the Nile which would help the irrigation needs of the upstream countries. As irrigation is connected with food security, the utilization of the Nile waters became for the upstream countries also a national security issue.
All of the Nile riparians agreed to the majority of the articles in the CFA. At the end of the negotiations, no consensus from Egypt and Sudan was reached on Article 14(b) which states that "The Nile Basin States therefore agree, in a spirit of cooperation […] not to significantly affect the water security of any other Nile Basin States". To this effect, Egypt proposed that Article 14(b) should be replaced by the following wording: "not to adversely affect the water security and current uses and rights of any other Nile Basin State" (CFA, p.70). It is considerate to add that all the historical agreements before the CFA, despite their controversy, shared a common characteristic. That was the existence of a settlement or reciprocation. The CFA does not provide an alternative solution for Egypt or a scenario where the rights should be disregarded by any member. On the contrary, the CFA provides numerous benefits for Ethiopia as a counter-hegemonic actor and its closest geographical neighbors.

**The Declaration of principles on the GERD of 2015**

On March 23, 2015, the three Eastern Nile countries (Egypt, Sudan, Ethiopia) proceeded to the signing of the Declaration of the Principles on the GERD in Khartoum. This controversial document is considered

by some as a step forward reaching a compromise among the Eastern Nile countries and as an agreement that consolidates the political affirmation for future cooperation on the operation of the dam. However, opponents of the document, opine that the agreement undermines the position of Egypt, as there is no reference on its historical or acquired rights. Despite that, the declaration is not considered adequate for building the mistrust among the countries and requires further technical agreements clarifying the filling process and the operation of the dam. The result of these future technical agreements will determine whether the GERD provides a new example of a win-win project or a developmental project from one state at the expense of others.

**The controversy of the customary international water law**

The controversy of the historical and the present accords among the involved states generates and is being generated from the ambiguity of three sets of theories developed by the customary international law. The first one refers to the principles of the *clean state* and the *theory of state succession*. The second set of theories refers to the antithesis among the Harmon doctrine, the absolute territorial integrity doctrine, and the limited territorial sovereignty doctrine. The third set of differences lays in the controversy between acquired rights and natural rights.

To begin with, according to the Vienna Convention on Succession of States in respect of Treaties of 1978 (put into force in 1996), the newly independent states (former colonies) receive a "clean slate" status, meaning that they do not inherit the treaty obligations of the colonial power. However, the clarification of this state succession to treaty obligations it is not clearly established in international law. Waterbury (1987) claims that the principle has been supported in a *de facto* sense, while *de jure* rejection has been considered as a potential right of the states. The riparian states are not only dissonant among them regarding this matter but also self-contradictory over time[15]. Ethiopia seems to want to have it both ways (Waterbury, 1987). For example, Ethiopia's claims to the Ogaden in 1944 upholding the principle of inherited obligations, and the construction of the dam on the Finchaa in the 1970s, promoting the clean state principle and a case, which is inspired by the Harmon doctrine. Proponents of the clean state principle, such as Mutiti (1976) argue that the treaties dealing with navigation, boundaries, delimitation, and neutralization are not necessarily binding upon successor states. Moreover, the construction of the

[15] Ethiopia might want to have it both ways. For instance, Ethiopia's claims to the Ogaden and its rejection of Somalia's claims are rooted in the upholding of the principle of inherited obligations. Wolde-Mariam contends that the Ethiopian-British agreement of December 1944, whereby Ethiopian sovereignty over the Ogaden was given explicit recognition, must be considered as binding upon independent Somalia. He goes on to cite proceedings of the Report of the International Law Commission in its twenty-sixth session (1975) to the effect that "the clean slate principle does not, in any event, relieve a newly independent state of the obligation to respect a boundary settlement and certain other situations of a territorial character established by treaty" (Wolde-Mariam and Waldamāryām, 1986, p.40).

On the other side, according to the agreement of 1902, Ethiopia is not allowed the construction of any works on the Blue Nile that would impede its flow without the consultation of Sudan. However, in the 1970s, Ethiopia proceeded to the building of a dam on the Finchaa, which is a tributary of the Blue Nile with the alibi of the clean state principle and the Harmon doctrine. Paradoxically, its national policy proacted a state seeking international agreements on water use but stated that even the absence of the agreements "does not in any way diminish the right of one basin state to go along, unilaterally, and develop the waters of international rivers within its territorial jurisdiction" (Waterbury, 1987, p.95-96).

Roseires dam from Sudan in 1958, signaled indirectly its positioning in favor of the clean state principle. The majority of East African states either refused to sign an agreement with the former colonial powers to transfer the authority or they extended the validity of the treaties for a fixed period. After that time, it was assumed that the treaties expired. Therefore, the principle of the clean state does not enjoy the agreement of all the riparian states. More importantly, this point is raised by upstream Nile basin-states as a legal tool against the downstream Egypt and Sudan (Ferede & Abebe, 2014). However, both Egypt and Sudan did not ratify the Vienna Convention and are opposed to the theory of the clean state. Both downstream countries appear in favor of the theory of succession, which obliges all newly developed states to inherit all the obligations and rights from their predecessor states. However, the use of this term has been misleading as it was applied by the Organisation of African Unity (OAU) in the postcolonial era about boundaries (Ferede & Abebe, 2014).

The second set of legal differences lays in the three water rights theories known to international law. Firstly, the doctrine of absolute territorial sovereignty ("the Harmon doctrine") gives a state the right to utilize the waters that flows within its boundaries regardless of any consequences in other states. In case an upstream state uses this doctrine, then the actions of the downstream are limited either to a "hope for cooperation" or "military action" (Okoth-Owiro, 2004, p.21). Secondly, the absolute territorial integrity doctrine obliges an upstream state not to utilize a transboundary river if this would cause harm to a downstream state. In the case of the Nile basin, Ethiopia stands in favor of the Harmon doctrine and the downstream states in favor of the absolute territorial integrity doctrine (Godana, 1985). Because of the absolute character of the aforementioned doctrines, a third approach has been under the customary international law developed. This is the limited territorial integrity doctrine which gives the right to each basin state to utilize the water resources in its territory, provided that it does not interfere with the "reasonable use" from other basin-states. This concept has been added as law in the UNWC with the name "reasonable or equitable utilization of water resources". However, this did not solve the issues in transboundary water interactions as the terms "reasonable" or "equitable" are not defined.

The third set of controversial theories refers to the acquired rights and natural rights. The former are the water rights that Egypt has from "time immemorial" and draws from the Nile to sustain its agriculture. It refers to its historic *droit acquis,* or the "priority of appropriation" of the river's waters. The respective amount of water is the amount of water needed to irrigate the cultivated area prior to the 1929 agreement. The riparian states do not challenge this principle. However, the controversy here lays in the legal binding of the exact amount of 48 billion $m^3$. Badr has put it as "first come, first served" (Badr, 1959, p. 97). The dogmatic character of the argument is translated in modern times in more flexible terms. An example of this gives Hilmy (1978). In harmony with Article 8 of the Helsinki rules of 1966, Hilmy observes that the "existing reasonable use" of the water may be replaced, modified, or terminated in case of a new utilization pattern comes to the surface which conflicts with the continuance of the traditional pattern. Taking the aforementioned into consideration one may conclude that, the prerequisite of reaching any negotiable pattern among the parties is the interpretation of the principle of acquired rights into relative terms and of any fixed quantity into a temporary function based on the current needs and agricultural practices throughout the basin (Waterbury, 1987).

On the contrary to the “acquired rights” of Egypt, come the Ethiopian “natural rights” on the Nile. Caponera observes that “The fact of having supplied 6/7 of the waters of the Nile to the riverain states from time immemorial without any compensation does not automatically constitute a tacit renunciation on the part of Ethiopia of its own ‘natural right’ to use at least a part of these waters arising on its own territory” (Caponera, 1959, p.62). The nonrecognition of the agreements, where Ethiopia not part was, reserves the Ethiopian rights on claiming a portion of the Blue Nile for utilization means.

**Institutional settings and their consequences for the Nile basin-states (1950-2010)**

This section reviews the precedents and existing institutional frameworks for cooperation in the RNB and assesses the divergent national interests that will affect any future efforts to negotiate a basin-wide accord.

**Permanent Joint Technical Committee (PJTC)**

The importance of the Nile is also reflected in the establishment of various sub-basin initiatives for the utilization of basin resources. Since the late 1950s the downstream countries, Egypt and Sudan, inaugurated the PJTC which was a part of the Agreement of 1959. The Committee met twice a year either in Cairo or in Khartoum. The functions of it are, firstly, the developing of projects which increase the yield of the Nile, secondly, the supervision and execution of them, thirdly, the drawing up of working arrangements for the construction of future schemes in downstream or upstream countries, fourthly, the supervision of the operation of the constructed works, and finally, the joint agreement of the two countries to reduce the water use in case of an equitable reduce of the average flow of the Nile. The responsibilities of the Committee are primarily technical rather than political or diplomatic.

**The Hydromet Project**

In the late 1960s started the first effort for multilateral cooperation. The need for such cooperation was based on the fact that the waters of the equatorial lakes are of a local, regional and transregional significance. This meant that any changes or developments in the hydrology of the equatorial lakes directly impact not only the neighboring countries but also the whole course of water to the downstream countries. A sustainable management of the lakes was considered of great importance as it would save the whole ecosystem of the region. For this reason, the Hydro-meteorological Survey of the Catchments of Lake Victoria, Kyoga, and Albert (Hydromet) started in 1967 and opened the road for multilateral cooperation for the better utilization of the waters of the Nile. The project had the support of the United Nations Development Programme (UNDP) and of the World’s Meteorological Organisation (WMO).
It consisted of Egypt, Sudan, Kenya, Tanzania, and Uganda, later joined Rwanda and Burundi, and ex-Zaire. In 1971, Ethiopia took only part as an observer member because of its fears that Egypt and Sudan would dominate the project due to their technical experience and political and scientific power (Tafesse, 2001). Moreover, under an Ethiopian perspective, Hydromet failed to include in its projects water distribution which persuaded Ethiopia to keep its distance from the project. The objective of Hydromet was to collect and evaluate hydrological and meteorological data on the equatorial lakes, create a

mathematical model to be adapted from the national data banks and publicize these data to the member countries. These data would be accessible to the technical professional of the countries to help the water development and water balance of the upper Nile. Behind a humanitarian goal “for the good of people” of the countries concerned, Hydromet would not “jeopardize the aspiration and interest of the other sister countries” (Krishnamurthy and Ibrahim, 1968, p.71). While some consider it one of the most outstanding examples of inter-regional cooperation to promote economic development (Biswas, 1994) and providing a platform for the Nile riparian to discuss issues relating to the water development of the Nile basin, others argue that the hope for joint planning of the water resources was not fulfilled because of political disruptions in Tanzania, Uganda, and Rwanda. The destabilizing factor within the states prevented ambitious follow-up projects (Brunnee and Toope, p.132). Ethiopia found the Hydromet project to have a very narrow objective and it lacked structure and orientation. For Uganda, Kenya, and Tanzania the Hydromet project was successful in creating hydrometeorological stations and training staff but for Uganda, it also lacked authority. Most of the projects of the Hydromet were, until its end in 1992, not realized (Tesfaye, 2001b).

**Kagera River Basin Organization (KBO)**

In 1977, the heads of states of Tanzania, Burundi, and Rwanda established the KBO. The objective of this project was the study and development of water resources of the Kagera river basin including hydropower, irrigated agriculture, transport, and communications. The KBO had the support of the UNDP and the WMO. With the assistance of the international organizations and the Belgian government at that time, a hydroelectric power plant of 80 MW installed capacity was planned at Rusumo falls. The KBO is based on mutual interests and a cooperative arrangement on all water issues and irrigation development (Kefyalew, 1995).

**The Undugu Initiative**

Before the end of Hydromet, an unofficial initiative named *Undugu* (Swahili for *brotherhood*) was formed in 1983. Undugu was the resolution of two summits. The first one was the 16th Organisation of African Unity (OAU) Summit of July 1979 at Monrovia in Liberia, which sought for inter-dependence and autonomy of African states, more specifically regarding the war (Kagera war or 1979 Liberation War) between Uganda and Tanzania at that time (Roberts, 2014). The second one was the first African Economic Summit at Lagos in Nigeria in April 1980 which called the development of Africa using a regional strategy, or the ambitious *Lagos Plan of Action* for the creation of an African Common Market (D’Sa, 1983). International and regional organization such as the OAU, the UNDP, the African Development Bank (ADB), the United Nations Economic Commission for Africa (UNECA), the Association of African Highways, the Kagera River Development and Management Organization, the African Association for Communications and Telecommunications, the African Association for Railways, and the African Association for Pedagogical Sciences occasionally took part in the meetings. The initiative comprised of the ministerial level of Egypt, Sudan, Uganda, Democratic Republic of Congo Tanzania, Rwanda, Burundi, and one none riparian state, the Central African Republic. Ethiopia, Kenya,

and Tanzania attended later as observers. The main objective of the Undugu initiative was the creation of a long-term master plan for the regional and economic cooperation of the Nile riparian states to establish a Nile Basin Economic Community. It covered a broad field for the strengthening of the economic and technical regional cooperation of the Nile riparian states in the fields of “highways, railways, rivers, air transport, energy, water resources, communications and telecommunications, and commercial exchanges” that were all under the Lagos Plan of Action (Allan & Howell, 1994). For this to happen two missions visited the Nile Basin. The first one laid the basis for a comprehensive long-term study. The second one was a fact-finding mission that proposed a preliminary plan of action for the Nile Basin for the control of the Nile waters regarding electricity generation, food security at the expense of the growing population, irrigation plans, and the development of fish farms. This mission was proposed by the Economic Commission for Africa (ECA) with the support of the UNDP. This mission would promote the development of the Nile water resources after the example of the development of the Mekong River. It covered water resources themes such as hydropower, irrigation, socio-economic and environmental protection and proposed a plan for the expansion of irrigation and water conservation projects in the Equatorial Lakes, construction of the Jonglei canal to prevent the losses in the Sudd, and a plan for groundwater and drainage water use in Egypt. The Fact-Finding Mission did not involve water allocation plans and irrigation plans and thus lost the support of Uganda at that time. Ethiopia, the major contributor of Nile water was excluded from the Fact-Finding Mission but as an observer, it proposed a revised plan. In the revised proposal of Ethiopia, not all countries participated and not all sent their comments on the Hydromet Office (such as Tanzania, Kenya). Moreover, it was on the preference of the lower riparian countries to have an unanimous vote, and not a form of majority voting such as absolute, simple, or reinforced. This decision-making process with unanimity made the evolution of the cooperative initiatives harder to take further action. In the meetings of experts from the Undugu countries, it was stated that the topic of shared waters which was also covered in the master plan should be discussed separately and not as part of the Undugu initiative (Kefyalew, 1995). As a result, the Undugu Initiative with the integration of water-related topics was becoming political when it proposed the integration of the Nile River matters as a topic of the agenda. However, many were against it and especially Ethiopia which claimed that water and energy-related topics should be excluded from the Undugu initiative and it supported the idea that there should be only a single specialized body to cover the matters of the Nile. Therefore, it proposed the “Framework for Cooperation among the Nile Co-Basin states”. Unfortunately, this plan had not the full support of all riparians and was at that time “ignored”. Apart from that, water allocation themes could not have been part of the Undugu initiative as the major water contributors, Ethiopia and Kenya were not part of the plan. Egypt and Sudan were strongly in favor of the Undugu initiative recognizing the need for basin-wide cooperation (Allan & Howell, 1994). The Undugu initiative ended in 1992.

**TECCONILE**

A year after the Undugu initiative, Uganda with the cooperation of Egypt and the United Nations Environment Programme (UNEP) established the Technical Cooperation Committee for the Promotion

of the Development and Environmental Protection of the Nile Basin (TECCONILE). Apart from the establishing countries, at TECCONILE participated also Rwanda, Sudan, Tanzania, and the DRC. Burundi, Kenya, Eritrea, and Ethiopia participated as observer members. The TECCONILE was an improvement of the Hydromet Project. It assisted in the preparation of a Nile River Basin Action Plan which would assist the participant countries in the development, conservation, and utilization of the water resources. The short-term objectives of TECCONILE were, firstly, to assist the countries in developing national water plans and their integration in the Nile River Basin Action Plan, and, secondly, to help them develop national water management such as improvement of the infrastructure, water capacity and techniques. The long-term objectives of the TECCONILE included the regulation of future cooperation in water resources matters and the understanding from all riparian countries of an equitable entitlement of the use of Nile waters. TECCONILE such as all the beforementioned initiatives didn't have the support of all the riparian states and, like all the formers, its action was stimulated through international support. Egypt was in favor of TECCONILE as it was created with a full vote of all the riparian states. Ethiopia was doubtful about TECCONILE and found its objectives to be inadequate for an integrated Nile development. TECCONILE according to Ethiopia did not cover the interests of all riparian states and could not serve as a single body for cooperation as it was based on the failure of the Hydromet Project. For example, Ethiopia and Uganda stated that they are victims of droughts and they needed irrigation plans to secure food protection but such a plan was not included at TECCONILE. For Tanzania, the TECCONILE was an improvement and more effective than the Hydromet Project as it included a committee that served as an authority and it was an institutional building with manpower development. A part of TECCONILE was the Nile 2002 Conference series which started with an Egyptian initiative in 1993 and had the support of the Canadian International Development Agency (CIDA). Its objective was the bringing together of experts and policy-makers to discuss and explore any cooperative possibilities and water management among the Nile water countries. It included ten conferences organized each year from one Nile riparian country.

**The Nile Basin Initiative (NBI)**

The NBI was the result of a dialogue between the Ministers of Water Affairs of the Nile riparian countries. At that time, it consisted of nine countries, Egypt, Sudan, Ethiopia, Tanzania, DRC, Rwanda, Burundi, Uganda, and Kenya. Eritrea took part as only an observer member. This dialogue took part in 1999 and it resulted in a shared vision from all the Nile Basin states. The vision was the further development of the Nile River in a cooperative manner including the interests of all riparian states and thus sharing any socioeconomic benefits that would come up along the way to promote regional political stabilization and water security for all the states that share the waters of the Nile. This vision includes projects at the macro-level which are undertaken under the Shared Vision Program (SVP) and embraces the whole basin area. It entitles the riparian states to determine their "entitlement" for consumptive and non-consumptive purposes. The SVP revolves around issues such as confidence building, awareness, project identification, and implementation. For the sub-basin area or the micro-level, the countries decided the implementation of the Subsidiary Action Programs (SAP). The SAP groups the Eastern Nile

Subsidiary Action Program (ENSAP) and the Nile Equatorial Lakes Subsidiary Action Plan (NELSAP). Both of them are coordinated from the Nile Basin Initiative Secretariat (Nile-SEC). The ENSAP is led by the Eastern Nile Council of Ministers (ENCOM), the Ministers of Water of the three eastern Nile countries; Egypt, Sudan, and Ethiopia, and the ENSAP Team (ENSAPT), which consists of three technical experts from the beforementioned countries. The ministerial committee established the Eastern Nile Technical Regional Office (ENTRO) as an organization for the management of the action programs. So far, the ENSAP had proposed fifteen programs about water supply, sanitation, irrigation, drainage, fisheries, and hydropower for funding from the consortium but not all of them had received approval. One of the projects of the ENSAP was the Joint Multipurpose Project (JMP), which, compared to the other small-scale projects, was a long-term, and large-scale project. The objective of the JMP was to "identify and prepare a major initial project, within a broader multipurpose program, to demonstrate the benefits of a cooperative approach to the management and development of the Eastern Nile" (World Bank, 2009). Cascão and Nicol (2016) claim that the JMP's transboundary approach embodied the "new spirit of Nile regionalism" and created a "window of opportunity" for the cooperation of the Eastern Nile countries. The study of Blackmore and Whittington (2008) included five "Blue Nile development scenarios" and analyzed the possibilities of dam construction in Ethiopia. However, Egypt challenged the technical validity of the study and JMP came to a halt in 2012. According to Tafesse (2001b) the failure of the funding of the projects is based on the lack of strength of the co-basin states organizations. The NELSAP is led by the Nile Equatorial Lakes Coordination Unit (NEL-CU), which supports the implementation and the preparation of the projects. The NELSAP consists of Burundi, DRC, Kenya, Rwanda, Tanzania, and Uganda and its objectives include poverty alleviation, economic growth, and reversal of environmental degradation. The highest decision-making body of the NBI is the Nile Committee (Nile-COM). It provides political guidance and it's fueled with technical guidance from the technical experts' committee (Nile-TAC). In 2001, with the support of external actors and to help to the coordination of the donor investments, the International Consortium for Cooperation on the Nile (ICCON) has been established. Moreover, the NBI had the support of the World Bank and other international donors, such as the UNDP. Under the supervision of the World Bank, there has been also the Nile Basin Trust Fund (NBTF) established.

The NBI promotes water security and effective water management with a joint action between the member countries. This optimistic goal of the NBI intended to create a future of common ground among the states and opened an era of the first trials of dialogue among the states in political terms. Until now, the initiatives about water resources had a technical character and were non-specific about the controversial issue of water allocation. The difference of NBI with the prior initiatives is based on the nature of the NBI which is utmost political and secondly technical. The NBI remains a single body specialized with the matters of the Nile. However, its goals do not capture water allocation issues but are going beyond the water issues *per se*. Among others, its objectives include poverty matters, economic stability, and environmental issues. As a result, the NBI enjoys a variety of sub-organizations making the NBI seem like one large institution. Despite its success in promoting cooperation in the majority of its projects, a fact which is respectable and apparent, it still lacks inner strength and cohesiveness.

**Conclusion**

This section analyzed thoroughly the legal and institutional developments since the beginning of the 20th century. Regarding the legal developments, the analysis focused mostly on the exploration of the effectiveness of the agreements and the examination of their validity until today. It was found out that the basic dilemma in the Nile basin is the upstream right of equitable utilization of the waters of the Nile and the downstream persistence on the principle of no significant harm. Both principles stem from the international water law but their use is being manipulated according to the state's preferences at each time. Over the years both positions of Ethiopia and Egypt shift and contradict each other in terms of legal background. The ambiguity of the agreements of the 20th century creates tensions, with upstream Ethiopia challenging their validity and downstream Egypt insisting on them. The resolution of this dilemma is of great importance as it can transform the regional power dynamics. More specifically, assuming that the Nile treaties are valid then the hegemonic role of Egypt in the region as an inspector and the state that has "the last word" upon matters on the Nile is being reinforced. This results at the same time, in a degradation of the power of the other riparian states regarding the Nile River. On the other side, assuming that the Nile treaties are not anymore binding and they lost their significance after the decolonization, then any utilization action of the waters of the Nile has no legal background. In the colonial and postcolonial era, the content of the majority of the agreements was intentionally unfair and unequal for the signing parts. The construction of the agreements represented the interests of the stronger state and fulfilled each time specific benefits. The introduction of the CFA was an effort to build a legal background for the Nile with the consensus of all the riparians. However, it has been a big step for which the basin-states were not ready. This resulted in the securitization of the water issues and blocked any further step towards regional cooperation. In any case, the Nile basin lacks a basin-wide legal agreement with binding guidelines and transparency.

Regarding the institutional development in the Nile basin, its concluded that from the moment that issues about the allocation of water resources become political, each cooperative effort or initiative is being either stalled or blocked and disregarded. Up until the formation of the NBI, the institutional building in the Nile basin included bilateral and multilateral technical cooperation and economic cooperation. The understanding of the regional character of water resources started upstream of the Nile in the 1960s with joint action in small infrastructure construction. The further institutions, albeit multilateral, did not consider the interests of all riparians which resulted in nonconformity. It has been found out that a hurdle to the further development of cooperative initiatives was the decision-making process and more specifically the persistence in using unanimity. A simple majority decision-making method would have been enough to reach a consensus that reflects the interests of the majority of the riparians. The institutions promoted technical cooperation, however, any efforts to add water allocation to the agenda has not been preferred and other times, even the major water contributors were not included. These inadequate institutions without, sometimes, clear objectives and goals were replaced by the formation of the NBI. For the first time, all riparians shared a vision about water cooperation and benefit-sharing from joint projects. Despite the opportunities that the NBI created, especially for the basin-states in the Eastern Nile, regional cooperation has still a long way in front of it.

All in all, the RNB does not lack of institutions about water resources. The solution, however, is not the multiplication of the organizations but in order for the step further to be made, the states have to take a step back and realize that any cooperation is a matter of “give and take” (Tesfaye, 2001b). That would mean that Egypt could accept a refreshment of the 1959 agreement without harming its share and Ethiopia from the other side could “stop waving the red flag” (Tesfaye, 2001b) and conclude the future of the Nile waters taking into account its geographical advantage.

### 4.1.6 Conclusion

The study of the Nile basin focused on finding out the dividing factors in the Eastern Nile basin and how can these be converted to unify the basin-states and generate trust. Firstly, it has been demonstrated that the water crisis is a reality and its causes do not lay necessarily to naturalistic limitations but to inefficient water management and incapability of the basin-states to adapt to the post-colonial environment. In their effort to adapt to the demands of the international political economy, the basin-states of the Nile proceed unilaterally to the utilization of the joint water resources with external support instead of regional collaboration. This results in the creation of a new dependent relationship with external powers.

Secondly, it was found out that in the last century power asymmetries played a major role in prevailing a hegemonic position of Egypt in the Nile basin. As these asymmetries tend to reduce, due to developmental efforts from the upstream states, the basin gets closer to a regional political cooperation. For this to become reality, all riparians have to enlarge their political economy portfolio. This would build state confidence and would soften the ground for regional cooperation in the basin. With the prevailing economies and political scene, any cooperative success seems like a far-fetched scenario.

Thirdly, a geopolitical analysis especially in such a sensible and complex area as the Nile basin, cannot marginalize the importance of the cultural traditions. The beliefs of each state play a major role in understanding the preferences and the established norms of the state. In the thesis, it was demonstrated, firstly, the cultural reminisce of colonization and the “western” dependency, and, secondly, the influence of religion as a channel of cooperation and conflict. Seeing the Nile matters with a regional lens and using religious matters as an effort of understanding the other could bridge differences and find similarities at aspects that are traditionally opaque to one another.

Lastly, all riparian countries of the Nile have come a long way from being represented by colonial powers signing on their behalf colonial agreements to the efforts of regional political cooperation with multilateral legal agreements and shared visions regarding the water resources of the Nile. It is, without doubt, to argue that the efforts for technical cooperation seem to succeed among the riparians but the political level seems not ready for it. The study of the Nile basin showed that the basin-states deal with transboundary matters nationally, a fact which generates mistrust and requires change. Under which circumstances such a change can happen depends on the actions and the decision to be taken for building nation-confidence and a stronger political economy for each Nile basin-state and the understanding of their regional role in the Middle East and North Africa region.

## 4.2 Transboundary water interaction in the MENA region

### 4.2.1 Introduction

This chapter serves as a comparative analysis of the three major river basins in the MENA region. The hegemonic arrangements on the Nile are being compared with the static water arrangements in the Tigris and Euphrates River and the Jordan River[16]. The objective of this chapter is to answer the second research question of this thesis which refers to the relationship between geographical position and power in transboundary river basins and how can this reflect the regional balance of powers. The analysis is followed by a brief illustration of the geography and hydro-infrastructure on the Tigris and Euphrates and the Jordan River.

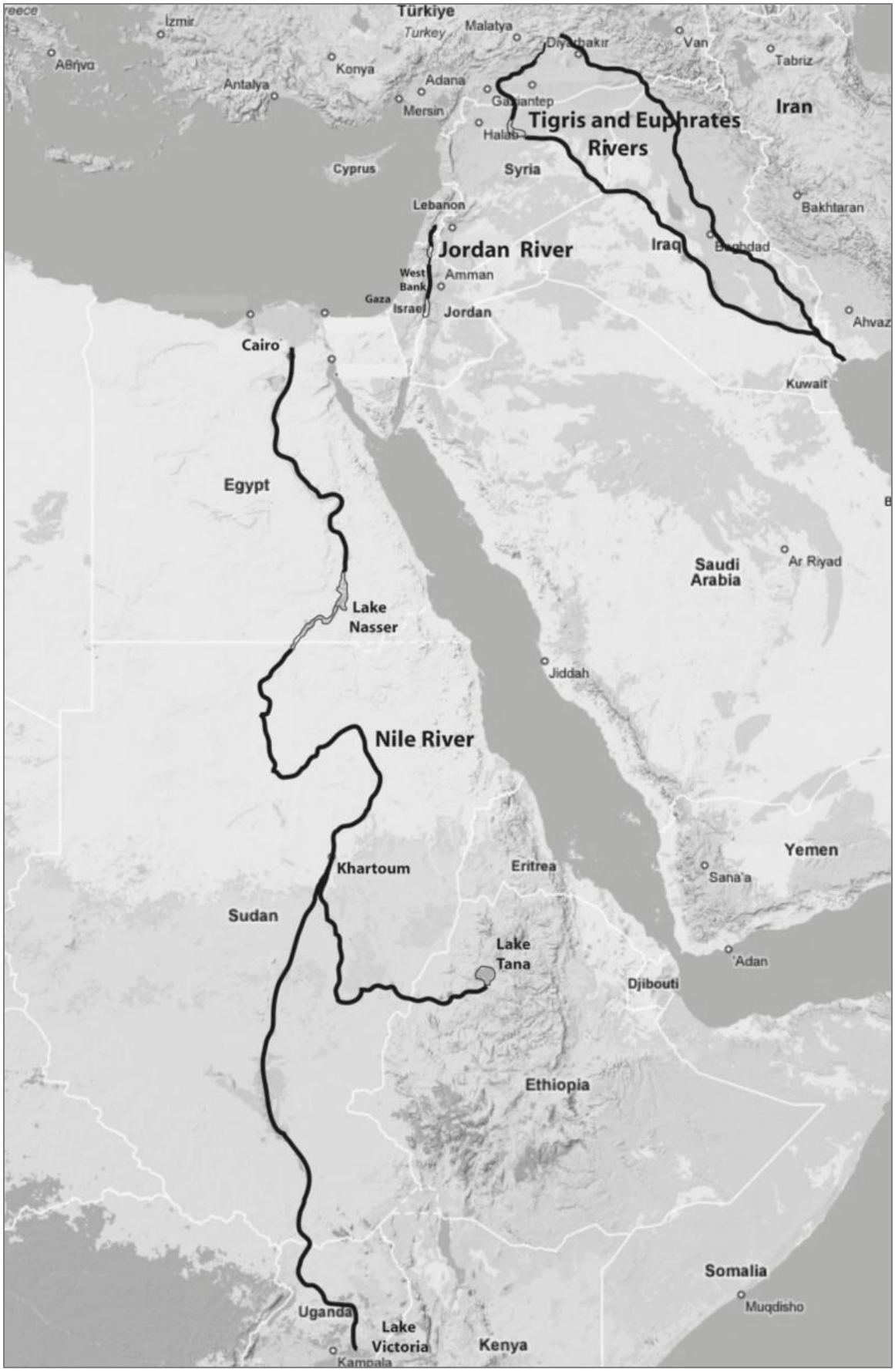
### 4.2.2 Geography and infrastructure of the Tigris - Euphrates rivers and of the Jordan river

Unlike the different sources of the White and the Blue Nile, both the Tigris and the Euphrates rivers originate from the same country; eastern Turkey. The Tigris River is approximately 1 840 km long and the Euphrates is between 2 700 and 3 000 km long (Yihdego & Khalil, 2017). The drainage area of the Tigris Basin is stretched into Turkey (12 %), Syria (0.2 %), Iraq (54 %), and Iran (34 %) and its water flow estimate around 43 billion $m^3$ per year. The Euphrates is located 28 % in Turkey, 17 % in Syria, 40 % in Iraq, and 15 % in Saudi Arabia, and its water flow is approximately 32 billion $m^3$ per year. Both rivers merge downstream in their last 190 km, forming the Shatt Al-Arab river before reaching the Arabian (Persian) Gulf (Yihdego & Khalil, 2017). Due to increasing irrigation demand in the region, there have been a series of hydraulic infrastructure projects built upon the Tigris and the Euphrates. The first dam for hydroelectric power built on the Euphrates from Turkey was the Keban Dam (1973) with an installed capacity of 1.3 GW. The second dam for irrigation and hydroelectric power on the Euphrates was the Atatürk dam (1983-1992) south-east of Turkey. Its installed capacity of approximately 2.4 GW makes it the largest dam in Turkey. Concerns about the decrease of the water flow to the downstream countries resulted in the establishment of water institutions among Turkey, Iraq, and Syria to resolve issues regarding the distribution of the waters (Yihdego & Khalil, 2017).

In one of the most agitated areas in the Middle East flow the waters of the Jordan river. Originating from the high precipitation mountains of Lebanon (4 %) the river flows through, Syria (37 %), Israel (10 %), Palestine (9 %), and Jordan (40 %) before reaching the Dead Sea. Its length is approximately 360 km having a discursive course. Its water flow is estimated approximately at 20-200 $mm^3$ with very poor quality (Yihdego & Khalil, 2017).

The following Map 2 demonstrated the three major transboundary river basins in the MENA region.

[16] There are similarities with the Mekong River in Asia. This is best described and analyzed by Naho Mirumachi (2015). However, Mekong does not belong to the geographical borders of this thesis, which is only the MENA region. Because of this geographical marginalization, the Mekong River will not be an object of analysis in this thesis.




**Map 2** The Nile, Jordan, and Tigris-Euphrates River basins
(Adapted from Zeitoun, 2008)

### 4.2.3 The role of power and the riparian position in the MENA

This chapter deals with two misconceptions that revolve around the riparian position and its power and cooperation methods. Regarding the first one, it could be rational to suppose that the geographical position of a country regarding a transboundary river basin, affects analogically its power, whether geographical, bargaining, ideational or structural. Therefore, an upstream country should have relatively more power or control over the resources compared to a mid-stream or a downstream country. However, the reality has proven otherwise. Table 12 demonstrates two relationships. The first one is the analogic relationship that exists among economic capacity, hegemonic power, and international support. These are determinants of power as seen from the realistic school of thought. Allan (2001) clarifies that the outcome (e.g., the strength of a state) is set by the economic capacity of a state together with its hegemonic advantage. The second one is the disproportionate relationship between the position of the state along a river and its percentage of water sufficiency with the relative economic capacity or hegemonic power or international support. In other words, the riparian position of a country does not reflect its economic capacity or hegemonic power. Therefore, the control over the flow of the water resources of each basin lays in different riparian positions. For both the Nile and the Jordan river, the actor who regulates the flow of the water is not the upstream country but rather downstream Egypt and the mid-stream Israel accordingly.

**Table 12** Factors affecting the control of transboundary flows.

| Riparians | Approx. Water self-sufficiency (%) | Economic Capacity | Hegemonic Power | Access to Global Support |
|---|---|---|---|---|
| | | ***Nile River Basin*** | | |
| **Ethiopia** | 100 | weak & v. weak | very weak | very little |
| **Sudan** | 100 | very weak | very weak | very little |
| **Egypt (downstream)** | 70 | moderate | moderate | significant |
| | | ***Jordan River Basin*** | | |
| **Syria** | 70 | moderate | weak | little |
| **Lebanon** | 100 | moderate | very weak | little |
| **Israel (mid-stream)** | 25 | strong & diverse | strong | very significant |
| **Palestine** | 20 | very weak | very weak | very little |
| **Jordan** | 25 | weak | weak | little |
| | | ***Tigris and Euphrates River Basins*** | | |
| **Turkey (upstream)** | 100 | strengthening | strong | significant |
| **Syria** | 90 | moderate | moderate | very little |
| **Iraq** | 100 | weak (temporarily) | weak | none |

Source: Data from Allan, 2001, p.224.
Note: Shaded rows represent the most powerful state in each basin

The critic upon this narrative comes from the liberal school of thought which argues that the emphasis on the global environment goes to the cooperation initiatives among the states. This school of thought tends to emphasize the steps towards cooperation such as the NBI, or the Joint Water Committee on the Jordan river, and Euphrates-Tigris Initiative for Cooperation. Zeitoun (2008) observes that this cooperative focus is represented by academics who analyse the dynamics of the international environment as seen from the perspective of the weaker states.

### 4.2.4 Application of the theory of change in the transboundary water interactions

The second misconception in water interaction reads that the outcome of the absence of conflict is cooperation. The disproval of this statement is best explained by the theory of change as analyzed in the theoretical framework section. It is expected that when cooperative initiatives take place then this alone is a step toward conflict prevention. However, the theory of change suggests that cooperative movements are only the first step towards the creation of counter-hegemony (Zeitoun et al., 2011; Zeitoun & Mirumachi, 2008). Therefore, in a dynamic environment of water interaction, there is never a cooperative period or a conflict period, but rather a constantly changing process and an interaction among contest and compliance of the hegemon.

**Coexistence of conflict and cooperation in the Tigris and Euphrates River**

During the time between 1980 until 2000, both Iraq and Syria contested the upstream construction of the Great Anatolia Project (GAP)[17] from Turkey (Warner, 2010). During the early 2000s, the political and military instability in both Syria and Iraq prevented them from using any kind of coercive mechanisms to challenge the projects of Turkey regarding water redistribution of the Tigris and Euphrates rivers. Zeitoun et al. (2017) refer to this as consent on behalf of Iraq and Syria and the only viable solutions for the governments would be strategic cooperation or the developing an alternative discourse. After the Turkish policy of 2008/2009 regarding “zero problems with neighbors”, Syria and Turkey allied (Conker, 2014). Moreover, Iraq considered the construction of the Ilisu Dam as a signal of peace (Warner & Zawahri, 2012).

Despite the official claims of the Turkish governments that the GAP benefits the downstream countries by reducing the water extremities (Conker, 2014), Kramer and Kibaroglu (Kibaroglu et al., 2011) argue that Turkey invoked absolute territorial sovereignty over the waters of Tigris and Euphrates. Moreover, with the construction of the Ilisu Dam, which serves as the last dam along the Tigris river, Turkey closes the GAP and concentrates on hydroelectric development from the Black Sea (Akpinar et al., 2011).

With the appearance of a fourth actor in the Tigris and Euphrates scene, namely the Iranian construction of dams in tributaries of the Tigris, Zeitoun et al. (2017) observe that Iraq is considering counter-hegemonic actions.

[17] Also known as Southeastern Anatolia Project. In Turkish as Güneydoğu Anadolu Projesi (GAP).

**Coexistence of conflict and cooperation in the Jordan river**

The arrangements on the Jordan River are not very much unlike the arrangements in the Tigris and Euphrates Rivers. The most important difference lays in the fact that the hegemonic actor in this scene is not an upstream country but a mid-stream one, namely Israel. With the hegemonic distribution of the Jordan water flows, Lebanon was never accord. The tactic of "non-compliance" invokes Lebanon together with nonstate actors to contest the hegemonic position of Israel. One of the most important tactics was the construction of the Wazzani Pumping Station in 2002 which signaled a possible counter-hegemony (Zeitoun et al., 2013). Despite this, it is believed among academics that Lebanon followed a "veiled consent" of Israel's hegemony and a nonstrategic resistance to the arrangements (Zeitoun et al., 2017. p. 282). This is believed because of the use of coercive mechanisms such as the construction of the Wazzani Pumping station or the relative minor Lebanese water withdrawals and the extreme power asymmetry which existed since 1964 (Wessels, 2015).

The relationship between Israel and Palestine is one of the most controversial in the region. Since the Israel-Palestinian negotiations of 1993, Palestine consented to the hegemonic water arrangements by Israel (Zeitoun et al., 2017). However, it is believed that the Palestinian water policy involves more than apparent consent. The Palestinian efforts to create positive-sum solutions in the water arrangements "backfired" Palestine to its disadvantage. Selby (2013) analyzing the negotiation of the Israeli-Palestinian Joint Water Committee states that "the institution has enabled Israel to compel the [Palestinian government] to assent to its own colonisation, through its formal approval of (and so consent to) water projects in Israeli settlements in the West Bank".

Viewing the strategies of each country not individually but collectively throughout the time, it is traceable that there is a significant "give and take", or a "coexistence of conflict and cooperation" as initially developed by Gramsci and Cox. However, it is important to note that the theory of coexistence applies mostly to the "weaker states" and not to the respective hegemon. It is traceable that in Tigris and Euphrates, both Syria and Iraq along with the consent of the Turkish developments they contest it. The same theory applies to the Jordan River. The Lebanese non-compliance with the Israeli hegemony over the water arrangements turns out to be veiled consent. Also, Palestine's consent coexists with the resistance over the West Bank and Gaza which creates a possible signal of counter-hegemony. Lastly, the river Nile is the epitome of the examples. Mostly Ethiopia was considered the weaker state and the theory of coexistence applies here too. Not only did Ethiopia promote the initiatives regarding regional cooperation on water issues but simultaneously proceeded to the challenging of the Egyptian hegemony with the construction of the GERD.

### 4.2.5 Conclusion

The uniqueness of the Nile River shaped from its paramount history and culture makes any comparison with other "successful examples" futile. However, the theory of change regarding the coexistence of conflict and cooperation is more than traceable in the MENA region in terms of dynamic water interaction. After analyzing the three cases, namely the Tigris and Euphrates, the Jordan River and the

Nile River, it is noticeable the fact that the respective weaker states use the same tactics of counter-hegemony which paradoxically starts with questionable cooperation and proceed to more contesting tactics which signal the footprints of an imminent challenge. It is considerate to add that the theory of change mostly applies to the weaker states rather than the hegemonic state, as it is a conceptual framework of analyzing and explaining the process of the counter-hegemony.

This constant changing process of the water interaction between contest and compliance of hegemon is apparent in a dynamic environment. In any case, the process of contestation of the hegemon signals simultaneously the existence of the hegemon and the approval of the fact that the respective state controls the water flows. Consequently, the weaker state's efforts to withdraw the hegemonic actor create a greater advantage for the hegemon, namely it increases the self-confidence of the state. Moreover, the resistance of the hegemon to share control over the waters shows the insecurity of the state and the great level of dependency on water resources.

# 5 Conclusion

Throughout the years, the development of social phenomena such as population growth and the prevalence of climate change predictions created the narration of waters wars in transboundary river interaction. Along with the discourse of political instability in the middle eastern states, the realistic school of thought connected water shortages with an “existential threat”, a fact that worked as a conflict catalyst. The constant competition of the riparians of the Eastern Nile basin over the waters of the Nile has been led by national interests and political promises neglecting the transboundary character of the Nile. In addition, the interference of external actors through the support of unilateral actions fueled the existing power asymmetries in the basin-states that were shaped in the 20th century. The establishment and maintenance of the Egyptian monopoly gave time to upstream Ethiopia to develop its counter-hegemonic mechanism and contest the established social order. The manifestation of the Ethiopian contestation was the unilateral construction and operation of the GERD. This is either interpreted as an outcome of a regular underrating and marginalization or as an outcome of the pressure of national demands. In both cases, it shakes the prevailed balance of power in the Nile region and can result to a new dynamic compared with that of the last century. The gradual transformation of the Nile waters to a securitization matter dismantled every attempt for cooperative solutions and impedes any developmental initiative. Additionally, the perception of "the Others" that got shaped in the colonization era, aggravates the situation because it fixated the middle eastern states on the western representation in their regional politics. The ambiguity of the legal agreements, made either by colonies or states themselves, served opportunistic interests and their invocation creates a controversy over their validity. Moreover, the controversy over customary law principles adds to this, with the downstream states favoring the principle of territorial integrity and acquired rights and the upstream states favoring principles of territorial sovereignty and equitable distribution of resources. The transboundary and regional character of the Nile has been initially comprehended with the beginning of the 21st century which marks the first efficient footprints of regional cooperation with the NBI and the CFA only to be stalled. The question that arises is if the Eastern Nile basin is ready for a political integration with liberal terms and institutionalism.

For the first time in the history of the Nile basin, the riparians proceeded to an initiative that has the full support of the basin-states and combines technical with political cooperation. Providing technical knowledge on Nile waters and offering a requested authority, the NBI managed to reflect a variety of interests such as the upstream pledge for a single specialized body for the Nile waters and the downstream need for a regional cooperation with an international acknowledgment. Up until the NBI, none of the initiatives could thoroughly cover all the interests of the countries regarding the Nile waters. Nevertheless, the NBI got hindered in its progression as it affected issues of water allocation. Belonging to the utmost interests of Egypt, the established water-sharing arrangements ensure its “hegemonic rights over the Nile”. The downstream countries favored initiatives as long as water allocation issues were not affected and any effort to change the water allocation stalls a basin-wide consensus.

These forces divided the eastern Nile basin-states, generating political mistrust, suspicion, and competition over the Nile waters. Despite these factors, the aspiration of sustainable development and

of regional cooperation in the Nile basin remains a shared vision among the riparians. However, Egypt seems to be unwilling to do anything about it, whereas Ethiopia tries to catch opportunities unilaterally because any effort of regional cooperation has failed. Taking the current situation into consideration, the scenario of regional political cooperation might seem far-fetched, however, actions towards this goal are of utmost importance, to avoid a forthcoming "tragedy of the commons" scenario. Developing the national political economies opens up possibilities to resolve transboundary river matters, especially for the downstream countries by reducing the dependency ratio through alternative water supply and for the upstream countries by efficient hydropower management to utilize the Nile waters reasonably without causing consequences downstream.

It is arguable if the construction of a dam upstream of the Nile could change the balance of powers in the region. The lone contention is that the GERD can expand the electricity production of Ethiopia making it a regional electricity exporter. This cannot occur without any forethought yet in years. Furthermore, assuming this is the case, Egypt can generally make moves expanding its regional force, as natural gas exporter, solar power exporter, and as an actor of sustainable use of energy. In any case, above all Egypt need to build its financial and socioeconomic levels. Should this portfolio development work out, it opens a road for the discharge of waters issue as a securitized or politicized matter resulting in the risk-averting or risk-taking cooperation among the riparians.

The exploration of the cultural perception of the riparians yielded the result that the Nile cultures and communities share the incorporation of the Nile waters in their cultural identity and the same beliefs which have been shaped and influenced by the river itself. This comprehension of the cultural binding indirectly promotes regional unification despite the differences.

It is acknowledged that both Egypt and Ethiopia are ready to compromise and have come a long way from the absolute denial on water-sharing to a recognition of Ethiopia’s right to utilize the Nile water resources. In return, Egypt expects Ethiopia to bear the responsibility not to cause any harm downstream. Regarding the operation of the GERD, it’s shown that Ethiopia is ready to commit on filling its reservoir, however, only with guidelines. Ethiopia dismisses any commitment or agreement on water sharing especially when the “final word” would be from an international arbitrary.

The Nile basin is experiencing a change that could lead to counter-hegemony or even stages without any hegemonic actors. The use of contestation mechanisms is a broad phenomenon in the MENA region. Both at the Jordan basin and the Tigris-Euphrates, the existence of power asymmetries established hydro-hegemons and counter-hegemons. Their geopolitical position in the basin is not a factor of power but other forces such as hegemonic power, international support, and economic capacity. Moreover, the water interaction in the middle eastern basins is not a linear one where conflict follows cooperation or vice versa, but it represents a coexistence either with a veiled and apparent consent or with apparent contestation of the hegemon. The development of political economies and the establishment of water justice can open an era for water cooperation. Eventually, water interaction exists on many levels and its exploration regards a holistic approach to understand what divides and what unifies each river basin. Thereafter, compared to the perception of Thales, water itself is certainly not everything but regarding the MENA region, it is a force that can bring change.

# Appendices

**Appendix 1** Water Event Intensity Scale (WEIS)

| | Scale | Event Description |
|---|---|---|
| Water Conflict | -7 | Formal Declaration of War |
| | -6 | Extensive War Acts causing deaths, dislocation or high strategic cost |
| | -5 | Small scale military acts |
| | -4 | Political-military hostile actions |
| | -3 | Diplomatic-economic hostile actions. Unilateral construction of water projects against another country's protests; reducing flow of water to another country, abrogation of a water agreement |
| | -2 | Strong verbal expressions displaying hostility in interaction. Official interactions only |
| | -1 | Mild verbal expressions displaying discord in interaction. Both unofficial and official, including diplomatic notes of protest |
| | 0 | Neutral or non-significant acts for the inter-nation situation |
| Water Cooperation | 1 | Minor official exchanges, talks or policy expressions--mild verbal support |
| | 2 | Official verbal support of goals, values, or regime |
| | 3 | Cultural or scientific agreement or support (non-strategic). Agreements to set up cooperative working groups |
| | 4 | Non-military economic, technological or industrial agreement. Legal, cooperative actions between nations that are not treaties; cooperative projects for watershed management, irrigation, poverty-alleviation |
| | 5 | Military economic or strategic support |
| | 6 | Major strategic alliance (regional or international). International Freshwater Treaty |
| | 7 | Voluntary unification into one nation |

Source: Adapted from Yoffe et al. (2003)

**Appendix 2** New weight for World Events Interaction Survey events

| Event Type | Weight |
|---|---|
| 223 Military attack; clash; assault | -10.0 |
| 211 Seize position or possessions | -9.2 |
| 222 Nonmilitary destruction/injury | -8.7 |
| 221 Noninjury destructive action | -8.3 |
| 182 Armed force mobilization, exercise, display; military buildup | -7.6 |
| 195 Break diplomatic relations | -7.0 |
| 173 Threat with force specified | -7.0 |
| 174 Ultimatum; threat with negative sanction and time limit | -6.9 |
| 172 Threat with specific negative nonmilitary sanction | -5.8 |
| 193 Reduce or cut off aid or assistance; act to punish/deprive | -5.6 |
| 181 Nonmilitary demonstration, walk out on | -5.2 |
| 201 Order person or personnel out of country | -5.0 |
| 202 Expel organization or group | -4.9 |
| 150 Issue order or command, insist, demand compliance | -4.9 |
| 171 Threat without specific negative sanction stated | -4.4 |
| 212 Detain or arrest person(s) | -4.4 |
| 192 Reduce routine international activity; recall officials | -4.1 |
| 112 Refuse; oppose; refuse to allow | -4.0 |
| 111 Turn down proposal; reject protest, demand, threat | -4.0 |
| 194 Halt negotiation | -3.8 |
| 122 Denounce; denigrate; abuse | -3.4 |
| 160 Give warning | -3.0 |
| 132 Issue formal complaint or protest | -2.4 |
| 121 Charge; criticize; blame; disapprove | -2.2 |
| 191 Cancel or postpone planned event | -2.2 |
| 131 Make complaint (not formal) | -1.9 |
| 063 Grant asylum | -1.1 |
| 142 Deny an attributed policy, action, role or position | -1.1 |
| 141 Deny an accusation | -0.9 |
| 023 Comment on situation | -0.2 |
| 102 Urge or suggest action or policy | -0.1 |
| 021 Explicit decline to comment | -0.1 |
| 094 Request action; call for | -0.1 |
| 025 Explain or state policy; state future position | 0.0 |
| 091 Ask for information | 0.1 |
| 011 Surrender, yield to order, submit to arrest | 0.6 |
| 012 Yield position; retreat; evacuate | 0.6 |
| 031 Meet with; send note | 1.0 |
| 095 Entreat; plead; appeal to; beg | 1.2 |
| 101 Offer proposal | 1.5 |
| 061 Express regret; apologize | 1.8 |
| 032 Visit; go to | 1.9 |
| 066 Release and/or return persons or property | 1.9 |
| 013 Admit wrongdoing; apologize, retract statement | 2.0 |

| | |
|---|---|
| 062 Give state invitation | 2.5 |
| 054 Assure; reassure | 2.8 |
| 033 Receive visit; host | 2.8 |
| 065 Suspend sanctions; end punishment; call truce | 2.9 |
| 082 Agree to future action or procedure, to meet, or to negotiate | 3.0 |
| 092 Ask for policy assistance | 3.4 |
| 093 Ask for material assistance | 3.4 |
| 041 Praise, hail, applaud, extend condolences | 3.4 |
| 042 Endorse other's policy or position; give verbal support | 3.6 |
| 053 Promise other future support | 4.5 |
| 051 Promise own policy support | 4.5 |
| 052 Promise material support | 5.2 |
| 064 Grant privilege; diplomatic recognition; de facto relations | 5.4 |
| 073 Give other assistance | 6.5 |
| 081 Make substantive agreement | 6.5 |
| 071 Extend economic aid; give, buy, sell, loan, borrow | 7.4 |
| 072 Extend military assistance | 8.3 |

Source: Adapted from Goldstein (1992)
Note: Weight is mean of weights assigned by eight panelists

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