

**Pursuing the Common Good:
Overcoming Barriers to Collective Action
through Transboundary Water Negotiation along the Blue Nile River**

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ABSTRACT

We are headed towards a global water crisis. While technological advancements may help reduce this gap, achieving global water security will also require establishing self-enforcing agreements negotiated among countries that share transboundary rivers. At its core, transboundary water governance is a type of collective action problem (Olson 1965), in which sovereign actors must cooperate to achieve a collective interest.

In this research, I attempt to delineate common procedural and context-specific barriers to collective action within transboundary water negotiations in the Nile River Basin. I compare efforts by three countries – Egypt, Ethiopia, and Sudan – to pursue collective action in two separate, but related, face-to-face negotiations related to water use: the basin-wide negotiations on the Nile Basin Cooperative Framework Agreement (1997 – 2010) and the ongoing project-specific negotiations on the Grand Ethiopian Renaissance Dam which started in 2011. Between 2015 and 2018, I interviewed over 50 Egyptian, Ethiopian, and Sudanese negotiators; transboundary water scholars and academics; and journalists and reviewed primary and secondary documents to identify the perceived barriers within these negotiation processes.

The conventional approach to treaty-making is through negotiations among state actors. I argue that while many barriers related to the number of actors and degree of heterogeneity among them (as defined by differences in their capacity, access to information, preferences, beliefs, and identities) can be addressed through procedural interventions, non-procedural interventions by both state- and non-state actors are necessary to reduce these barriers at different scales (e.g., between negotiators or between negotiators and the public) in the short-, medium-, and long-term. Furthermore, I argue that multi-track water diplomacy is increasingly necessary in the Nile Basin due to several context-specific factors: the ‘securitization’ of water, frequent political transitions, and lack of public trust.

Based on this research, I offer a list of procedural- and non-procedural interventions that can be employed by state- and non-state actors to reduce different types of barriers. Although reducing these barriers will not guarantee collective action, I argue that these interventions can create a more enabling environment in which collective action can occur.

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CHAPTER ONE. OUR COLLECTIVE INTEREST IN WATER

“Picture a pasture open to all. It is to be expected that each herdsman will try to keep as many cattle as possible on the commons. Such an arrangement may work reasonably satisfactorily for centuries because tribal wars, poaching, and disease keep the numbers of both man and beast well below the carrying capacity of the land. Finally, however, comes the day of reckoning, that is, the day when the long-desired goal of social stability becomes a reality. At this point, the inherent logic of the commons remorselessly generates tragedy. As a rational being, each herdsman seeks to maximize his gain.... the rational herdsman concludes that the only sensible course for him to pursue is to add another animal to his herd. And another; and another.... But this is the conclusion reached by each and every rational herdsman sharing a commons. Therein is the tragedy. Each man is locked into a system that compels him to increase his herd without limit-in a world that is limited. Ruin is the destination toward which all men rush, each pursuing his own best interest in a society that believes in the freedom of the commons. Freedom in a commons brings ruin.”

(Hardin 1968)

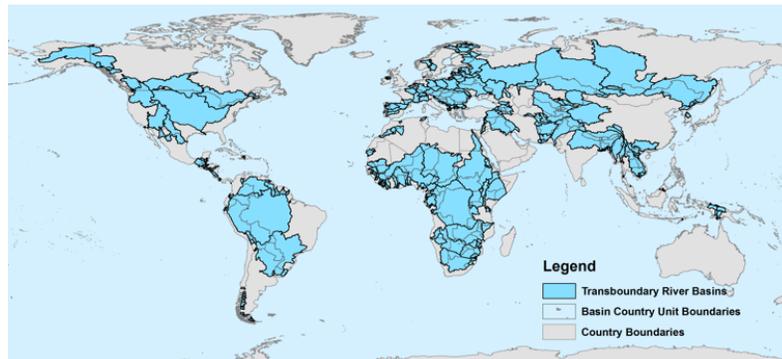
In 1968, ecologist Garret Hardin used the allegory of the growing herdsmen in a pasture to illustrate the ‘tragedy of the commons’, or a situation in which a commonly shared, non-excludable resource such as a pasture is over-utilized and degraded because it is left unregulated. Hardin recognized that rational actors, pursuing their own immediate self-interests, would work against the collective common interest (i.e., sustainable use of the pasture). A few years earlier, in his seminal book, *The Logic of Collective Action* (1965), economist Mancur Olson challenged the related assumption, prevalent in social science at the time, that groups of rational, self-interested individuals would and could voluntarily cooperate to achieve their common interest. Both he and Hardin recognized the inherent tension between pursuing individual (and often short-term interests) and meeting collective (and often long-term) goals.

The tragedy of the commons is not unlike what is happening to our water resources. By 2030, worldwide demand for water will exceed renewable supplies by 40 percent (2030 WRG 2009). Left unchecked, this growing demand will, it seems, lead to over-utilization, degradation, competition, and potential conflict. In the words of Hardin (1968), ‘there is no technical solution to the problem¹.’ Although infrastructural improvements and technological advancements hold some promise for closing the gap, the greatest gains in water security will come from collaboration among water users and adaptive water governance at all scales.

The challenge of achieving water security is further complicated by the transboundary nature of many water resources. Over forty percent of the world’s population lives in one of the 286 transboundary river basins (Figure 1) in the world (UNEP-DHI and UNEP 2016).

¹ Hardin’s (1968) full quote is as follows: “An implicit and almost universal assumption of discussions published in professional and semi-popular scientific journals is that the problem under discussion has a technical solution. A technical solution may be defined as one that requires a change only in the techniques of the natural sciences, demanding little or nothing in the way of change in human values or ideas of morality.”

Figure 1. Transboundary River Basins of the World²



Studies of the vulnerability of these river basins to climate change point to the need for more flexible institutional arrangements that can respond and adapt to rapid political, legal and physical change (Wolf, Yoffe, and Giordano 2003; De Stefano et al. 2011). This vulnerability further decreases when existing institutions (i.e., river basins or transboundary water laws) enable multilateral cooperation in transboundary river basins. Through cooperation, countries can enhance multipurpose uses of water (e.g., co-managing a cascade of hydroelectric dams), jointly address shared problems (e.g., salinization, pollution, etc.), and identify the optimal location for water infrastructure along a river. In short, the benefits of multilateral transboundary water cooperation are usually far greater than if countries were to unilaterally manage transboundary water (Subramanian, Brown, and Wolf 2012; Jeuland et al. 2014; Jeuland, Wu, and Whittington 2017).

Unfortunately, of the 286 river basins in the world, only 11³ have basin-wide agreements (HLPW 2016). Furthermore, less than half of 286 basins have any kind of multistate treaty in place, let alone a flexible agreement that allows them to make adjustments as needed (De Stefano et al. 2011). Of those that do, the majority are only bilateral – even when there are more than two countries within the river basin (Hamner and Wolf 1998; Conca et al. 2003). This propensity for bilateral agreements suggests that there is a trade-off between efficacy and efficiency⁴. In other words, although basin-wide agreements would help ensure more effective water governance, bilateral agreements are more easily reached⁵. This is sure to create problems as uncoordinated and fragmented hydraulic development lead to suboptimal water use (Zawahri and Mitchell 2011).

The paucity of multilateral and basin-wide water agreements suggests that transboundary water cooperation and, more specifically, multilateral water cooperation is a difficult goal to achieve. At its core, the challenge of reaching a basin-wide agreement is a problem of collective action (Olson 1965) in which sovereign actors must voluntarily⁶ cooperate to reach an outcome that will be in their collective (and usually long-term) interest, even if it is against their short-term self-interest. This framing also recognizes that water security, like many environmental challenges, increasingly requires regional and global cooperation.

² Source: Transboundary Water Assessment Program (River Basins). Accessible at twap-rivers.org/#global-basins.

³ My own analyses based on data from OSU's Transboundary Freshwater Dispute Database suggests that there are only eight basin-wide agreements (Amazon, Gambia, Inkomati/Maputo, La Plata, Oder, Okavango, Volta, and Zambezi). It is possible that HLPW's assessment also included Senegal River (Guinea is an observer) and Rhine (where Italy has not signed, but makes up only a small part in the river basin). See Appendix 2.

⁴ This pattern of bilateral agreements seems to support Olson's argument that collective action can only occur in small groups. However, Ostrom's work suggested that some interventions (e.g., establishing institutions) could help reduce the transaction costs associated with collective action among many actors.

⁵ One reason may be that countries with more power have more influence in bilateral agreements. In both the 1929 and 1959 Nile Agreements, for example, one party was clearly more powerful than the other.

⁶ In the case of a hegemonic power, cooperation can be enforced. However, in the absence of an overarching governing authority or hegemon, collective action will only be achieved voluntarily.

While there is a growing body of research indicating how transnational cooperation might be achieved, these studies typically focus exclusively on the state as their unit of analysis. Although this is logical in the context of transnational agreements (because states are, indeed, the signatories), the actual negotiations that lead to these agreements involve individuals acting as representatives of states. The dynamics of these negotiations (e.g., decisions about who is involved, the levels of trust between these individuals, individual perceptions of the problem, etc.) affect the likelihood that the countries will reach a negotiated agreement, as do factors outside of the negotiations (e.g., changes in political leadership, geopolitics, etc.).

This research uses face-to-face transboundary water negotiations among state representatives as the unit of analysis to differentiate procedural obstacles (i.e., those related to formal state-to-state negotiations) from non-procedural obstacles that may affect the process of negotiations. I ask, “How do the number of actors and the degree of heterogeneity⁷ among the actors affect the perceived barriers to collective action in transboundary water negotiations?”

I try to answer this question in the context of transboundary water negotiations among three countries – Egypt, Ethiopia and Sudan – involved in trying to reach an agreement regarding the filling and operation of the Grand Ethiopian Renaissance Dam (GERD), a very large hydroelectric dam on the Blue Nile in Ethiopia. I examine two related, but separate, Nile-based negotiations that occurred at different times and different scales – basin-wide and project-specific. This comparison allowed me to consider how the number and heterogeneity of actors affected the two negotiations. Using a combination of semi-structured interviews and document review, I delineate the procedural and non-procedural barriers, as well as general and context-specific barriers, that made it difficult for the countries involved to cooperate. I also describe how these barriers shifted during the two negotiations as a result of specific interventions and due to external factors.

The question of how to enable multiple individuals (or multiple groups) to cooperate in pursuit of their common goals is fundamental to society’s long-term welfare. Although this research focuses on this question in the context of transboundary water cooperation, I hope that my findings will have broader implications for other negotiations related to global environmental governance.

⁷ I define ‘heterogeneity’ across five dimensions: differences in capabilities, preferences, information, beliefs, and identity.

I. Puzzle of Nile Water Governance

The Nile, the world's longest river, has two main tributaries. The White Nile starts from Lake Victoria and flows north through the Sudd wetlands of South Sudan to Khartoum, the capital of Sudan. The Blue Nile⁸, or Abbay, flows from Lake Tana in Ethiopia's highlands down through Sudan until it meets the White Nile in Khartoum, Sudan. Together, they become the main Nile and flow north through Egypt and into the Mediterranean Sea.

The Nile River Basin (Figure 2) is home to over 257 million people, or approximately one-fifth of Africa's population, and falls within the territory of eleven countries – Burundi, Rwanda, Tanzania, Kenya, Uganda, DRC, South Sudan, Sudan, Ethiopia, Eritrea and Egypt. The Basin countries are not only filled with diverse languages, cultures, and religions, they are also marked by extreme disparity in population, levels of economic development, extent of urbanization, rainfall and dependence on the Nile (see Chapter 2).

Use of the Nile water is also extremely uneven in the basin. The right to utilize Nile water has historically been dictated by three bilateral treaties – the 1902 Nile Agreement⁹, the 1929 Anglo-Egyptian Agreement¹⁰ and the 1959 Agreement on the 'Full Utilization of the Nile Waters'¹¹. Under the most recent agreement, the 1959 Nile Agreement, Egypt is allocated 55.5 billion cubic meters per year (BCM/year) and Sudan is allocated 18.5 BCM/year of the 84 BCM/year of Nile flow (as measured at the High Aswan Dam in Egypt). The remaining 10 BCM is considered 'lost' due to evaporation and seepage at Lake Nasser, the reservoir upstream of the High Aswan Dam. This bilateral agreement established full use of the Nile River by the two most downstream countries, effectively foreclosing it to future use by upstream countries (Sadoff and Grey 2002; Salman 2010).

The 'status quo' of predominant use of the Nile by its downstream riparians, as defined by the 1959 Nile Agreement, was maintained throughout most of the 20th century, despite the fact that the legitimacy of the two most recent agreements (i.e. 1929 and 1959 Nile Agreements) is challenged by Ethiopia (which was never party to either treaty) and by most of the upstream countries (which argue against the treaties' applicability to them under the Nyerere Doctrine¹²) (Salman 2018). Three things helped maintain the status quo in the Nile, in terms of Nile water use primarily by Egypt and Sudan: political unrest in the upstream countries, Cold War rivalries, and relative differences in economic strength (Chapter 2). However, as the upstream countries became

Figure 2. Nile River Basin



⁸ The Blue Nile is technically one of the three rivers joining the White Nile from Ethiopia. The Eastern Nile consists of the Blue Nile (contributing 62 percent of the Nile at Aswan), Baro Akobo Sobat (13 percent), and the Tekeze Atbara (12 percent). The Baro Akobo Sobat, which is part of the Eastern Nile, joins the White Nile in South Sudan at Malakal and makes up about 46% of the White Nile at Khartoum. The Tekeze Atbara, again part of the Eastern Nile, joins the main Nile upstream of Khartoum at the city of Atbara in Northern Sudan.

⁹ Officially, the "Treaty between Ethiopia and the United Kingdom, relative to the frontiers between the Anglo-Egyptian Sudan, Ethiopia, and Eritrea."

¹⁰ Officially, the "Exchange of Notes between His Majesty's Government in the United Kingdom and the Egyptian Government in Regard to the Use of Waters of the Nile River for Irrigation Purposes." Hereafter referred to as the 1929 Nile Agreement.

¹¹ Officially, the "United Arab Republic and Sudan Agreement for the Full Utilization of the Nile Waters". Hereafter referred to as the 1959 Nile Agreement.

¹² More specifically, Kenya, Uganda, and Tanganyika (now Tanzania) used the Nyerere Doctrine to argue that they were not bound by the 1929 Nile Agreement (Salman 2018). The Nyerere Doctrine of state succession states that former colonies have no legal obligation to adhere to treaties that have been signed on their behalf while under British colonization. Egypt, on the other hand, argues that the 1929 Nile Agreement is still binding.

more politically and financially stable, they began to consider developing their hydraulic infrastructure and pushed for more equitable utilization of the Nile river.

In the late 1990s, representatives from all¹³ Nile Basin countries came together to draft a comprehensive and fully inclusive legal agreement on the ‘equitable and reasonable use’ of the Nile – the Nile Basin Cooperative Framework Agreement (CFA). Despite ten years of negotiation (2000-2010), the countries were unable to reach consensus. The downstream countries (Egypt and Sudan) felt that the CFA did not adequately protect their interests, and refused to sign. The upstream countries, on the other hand, signed a version of the CFA¹⁴ that included all the articles to which the countries had agreed to during negotiations, while leaving the most contentious article¹⁵ for future resolution.

The CFA requires ratification by six countries to come into force, and has so far been ratified by Ethiopia, Rwanda and Tanzania. Although it will set general principles for Nile water use, the Agreement will not apply to the whole basin without signature and ratification by Sudan and Egypt, limiting its efficacy as a regulatory instrument.

In 2011, a year after the CFA negotiations ended, former Ethiopian Prime Minister Meles Zenawi announced plans to unilaterally construct the Grand Ethiopian Renaissance Dam (GERD) on the Blue Nile. Once complete, the GERD will be the largest hydroelectric dam in Africa, with the installed capacity to generate 6,450 megawatts (Figure 3).

Ethiopians perceive this dam to be critical in terms of their economic development, poverty alleviation, and regional influence. Some Sudanese and many Egyptians, on the other hand, perceive the dam to be a threat to their water security and to their very existence¹⁶. While the dam offers many potential benefits – including power generation, flood control, and river flow regularization – there are concerns that the filling and operation of the dam may reduce the flow of the Blue Nile, affecting agriculture and electricity production downstream.

Figure 3. Grand Ethiopian Renaissance Dam



The tension among the three countries came to a head in 2013, when former Egyptian President Mohamed Morsi called a meeting of opposition party leaders and his cabinet to discuss actions against Ethiopia. Solutions ranged from sports diplomacy, to funding guerilla fighters in Ethiopia, to bombing the dam. This meeting was televised live, much to the astonishment of many Egyptians and the international community.

If the three countries – Egypt, Ethiopia and Sudan – agree on how to fill and operate the GERD, negative downstream impacts can be mitigated and the benefits can be shared. Despite years of negotiation, the three countries on the Blue Nile – Ethiopia, Sudan, and Egypt – have so far been unable to agree on how to fill and operate the GERD.

¹³ At the time, there were only nine Nile Basin countries involved in the negotiations. Eritrea chose to be an observer in the negotiations and South Sudan had not yet seceded from Sudan.

¹⁴ The CFA has been signed by Ethiopia, Rwanda, Tanzania, Uganda, Kenya and Burundi.

¹⁵ The most contentious article in the CFA is Article 14b, on Water Security (see Chapter 3).

¹⁶ Of the estimated 55.5 Billion Cubic Meters (BCM) that Egypt receives from the Nile annually, approximately 56 percent is from the Blue Nile alone (FAO 2016b). In short, the Blue Nile is crucial to Egypt’s water security.

My research focuses on these two Nile-based negotiations: the basin-wide Cooperative Framework Agreement drafting and negotiation process (1997-2010) and the ongoing three-country (Egypt, Sudan, and Ethiopia) project-specific negotiations on the filling and operation of the Grand Ethiopian Renaissance Dam (2011 – present). I delineate many of the perceived barriers to achieving collective action and the intervention strategies used by different (state- and non-state) actors to overcome them¹⁷.

In this dissertation, I use the terms ‘collective action’ and ‘cooperation’ frequently. Cooperation is necessary to achieve collective action, but they are not interchangeable. I define ‘collective action’ narrowly to mean agreement by all stakeholders regarding the pursuit of their common interest. In the case of the Nile Basin Cooperative Framework Agreement (CFA), for example, I argue that while the countries successfully cooperated, they could not achieve unanimity on how to define their collective interest or how to achieve it. If Sudan and Egypt signed some version of the CFA and managed Nile resources in concert with the other basin countries, I would argue that they had achieved collective action. In the case of the Grand Ethiopian Renaissance Dam, I define collective action as an agreement between Egypt, Ethiopia and Sudan regarding the filling and operation of the GERD. Again, the countries are actively cooperating, but have not yet achieved collective action.

My goals in pursuing this research were three-fold. First, to add to our understanding of the problem of collective action as it relates to transboundary water agreement-making. Second, delineating procedural and non-procedural obstacles to collective action to capture lessons for future negotiations on procedural elements that can help to overcome certain obstacles. Third, to shed insight as to how regions can strengthen their capacity to work cooperatively through multi-track water diplomacy by identifying non-procedural obstacles that need to be addressed.

Embedded in my research is a puzzle related to scale of water governance. If (at least theoretically) basin-wide cooperation yields greater benefits than unilateral development and, as seen in the case of the Nile, the legitimacy of bilateral agreements may later be questioned by excluded stakeholders, why are most transboundary water agreements bilateral? This puzzle can be broken down into two first-order questions. First, under what conditions will countries cooperate with one another and agree on jointly managing water? Second, how does the scale of water governance affect the likelihood, or nature, of cooperation?

The next two sections describe the evolution in both the practice and theory of transboundary water cooperation. Within the practice of water management, there has been a shift towards treating the river basin as a single hydrological unit through the emergence of Integrated Water Resources Management (IWRM). This practice becomes more difficult with transboundary rivers. Hydropolitics, or the study of transboundary water conflict and cooperation, provides some insight on (i) why more comprehensive (i.e., multilateral versus bilateral treaties in multilateral basins) agreements are necessary; (ii) why cooperation must be evaluated; and (iii) how multilateral cooperation can be enabled.

II. Shift from Unilateral to Basin-wide Water Management

Early transboundary water treaties, such as those on the Rhine or Danube in the 17th century, focused on establishing use of the river for navigational purposes and as borders. However, as the demand for water increased, the need for larger scales of governance also grew. Over time, the dominant approach to transboundary water management shifted more generally to river basin planning; treaties expanded from being narrowly focused and primarily bilateral, to covering multiple uses and demands (Wescoat 1996).

¹⁷ It should be noted here that my framing of Nile water governance as a collective action problem was inspired by the work of John Waterbury (2002) in *The Nile Basin – National Determinants of Collective Action*. My work diverges from his in that my unit of analysis is the negotiations, rather than the states, and draws on a different set of literatures.

The demand for water significantly increased due to the Industrial Revolution and rapid population growth in the nineteenth and twentieth centuries (Gleick 2003). By the middle of the 19th century, water management shifted from the local scale to the national scale, emphasizing river basins as the ideal hydrological unit (Molle 2009). The importance of transboundary water and river basin planning, heightened in the mid-20th century. In the early 1930s, the United States federal government established the Tennessee Valley Authority (TVA), a federally owned corporation established to promote regional economic development through river basin planning in the Tennessee Valley.

Part of President Roosevelt's "New Deal," the TVA represented the first modern effort to 'optimize' water use within a river basin. Rather than continuing to allow states to pursue unilateral development, government planners sought to increase the efficiency and productivity of the river's many functions (e.g., navigation, hydropower, agriculture, flood control, etc.) by coordinating development at the level of the river basin. Due to several challenges, including opposition from private hydropower companies and unwillingness of states to give up their own interests in pursuit of regional interests, this approach was never replicated elsewhere in the United States (Ekbladh 2002; Molle 2008). It was, however, exported to other parts of the world as an American-led development model. Ekbladh (2002) suggests several reasons for this, including (i) the attractiveness of the TVA's roots in democratic ideals¹⁸, especially as an alternative to communist-led development¹⁹; (ii) the enthusiasm of American organizations who had begun to see multipurpose development projects as a solution to international development; and (iii) the energy and enthusiasm of one of the TVA's three directors, David Lilienthal²⁰. By the mid-1950s, the UN Secretary General argued that river basin development was 'an essential feature of economic development' (Molle 2009).

By the 1970s and 1980s, global awareness of the significant environmental (and social) costs associated with large infrastructure development had grown. The river basin was de-emphasized as the spatial unit for planning and water management. By the 1990s, the concept and practice of Integrated Water Resources Management (IWRM), the current approach to transboundary water management, emerged as a way of balancing basin-wide economic interests with social and environmental concerns. IWRM 'promotes the coordinated development and management of water, land and related resources in order to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems' (GWP 2000; GWP and INBO 2009).

Although IWRM reinforces the river basin as the appropriate scale for planning and policymaking, it represents a shift away from earlier basin planning by emphasizing the need to achieve an 'optimal' balance between economic development, equity, efficiency and the environment. This new approach to transboundary

¹⁸ According to Ekbladh (2002), '[t]he TVA idea promised all peoples the possibility of grass-roots democratic participation in technical programs which would assure development would be done by the people, not for them.' This appeal to democratic principles is also woven into Integrated Water Resources Management (IWRM).

¹⁹ Ekbladh (2002) describes the TVA as a symbol of U.S. modernization after the Great Depression and World War II. Even though '[t]he Soviet Union, and later the People's Republic of China, showed themselves to be masters of various technologies... according to the Americans, communist methods could not promise equal participation, or share in that development – things that were assured by the grass-roots orientation of the programs the United States advocated.' Ekbladh goes on to say that despite Lilienthal's, one of the three founders of the TVA, best efforts to integrate democratic ideals into the design of TVA, its implementation (and that of similar multipurpose dam projects abroad) failed to achieve these ideals in practice.

²⁰ David Lilienthal was the most outspoken champion of the TVA's promotion of grass-roots democracy. His seminal book, *TVA: Democracy on the March* (1944), became the encapsulation of the democratic ideals that underlied the project's concept. These ideas appealed to many in the global South. Within a year of publication, 50,000 translated copies had been distributed by the Office of War Information in China alone (Ekbladh 2002). Most notably, however, Lilienthal's ideas went on to influence the World Bank's involvement in mediating the Indus Valley Treaty. Lilienthal wrote the article 'Another "Korea" in the Making?' in *Collier's Weekly* in 1951, suggesting that the United States could help resolve the Kashmir conflict by helping India and Pakistan manage the Indus waters. After reading it, Eugene Black, World Bank President at the time, reached out to both Pakistan and India to offer the World Bank's services as a neutral mediator and played a crucial role in the Indus Water Treaty negotiations.

water management was institutionalized with the adoption of the Dublin Principles²¹ in 1992, the establishment of the Global Water Partnership²² in 1996, the endorsement of IWRM as a global policy goal at the World Summit on Sustainable Development in 2002, and its continued implementation through donor funding and international advocacy (Mark Giordano and Shah 2014).

Despite the potential benefits of IWRM, river basin planning is complicated by the fact that the natural boundaries of a watershed rarely align with political boundaries (Mark Giordano and Shah 2014; Varis, Enckell, and Keskinen 2014). Managing a transboundary river basin as a single hydrologic unit would allow countries to optimize water use but, to some extent, would require them to give up their sovereignty. For the full benefits of IWRM to be achieved, fragmented cooperation will not suffice. The countries within a river basin must be able to agree on the collective action they intend to take.

Although a global framework for governing freshwater resources was successfully drafted in 1997, the negotiations preceding the agreement took two decades. The United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses (hereafter called the 1997 UN Watercourses Convention) finally entered into force on August 17, 2014 after being ratified by thirty-five, mostly downstream, countries (Gupta 2016). The 1997 UNWC enumerates general global principles regarding transboundary water sharing, but has no institutional ‘teeth.’ It is, therefore, up to individual river basins and countries within those basins to (voluntarily) generate water sharing agreements case-by-case.

III. Shift from Theories of Water Conflict to Water Cooperation

Around the same time that IWRM was adopted as the predominant approach to water management, the broader community began to recognize the potential threat posed by future water scarcity. Near the end of the Cold War, the concept of ‘national security’ extended beyond purely military issues and into competition over limited natural resources, especially water (Gleick 1993; A. Dinar et al. 2007). Boutros Boutros-Ghali, the sixth Secretary General of the United Nations, is famously quoted in 1985 as having said that ‘[t]he next war in the Middle East will be fought over water, not politics’. This sentiment has since been echoed by many other global leaders²³.

Popular and scholarly writing about water resources also reflect the assumption that water scarcity will lead to conflict (Starr 1991; Lowi 1993; Homer-Dixon 1994; Gleick 1993; Lietzmann and Vest 1999). Starr (1991) warned that the Middle East and North Africa could collapse into ‘water wars’ due to increasing water scarcity and a rapidly rising population. Homer-Dixon (1994)²⁴ recognized the added pressure of population

²¹ The current formulation of IWRM comes largely from the Dublin Statement of Water and Sustainable Development, more commonly referred to as the Dublin Principles, which were drafted in 1992 by international water experts as general principles to deal with the challenge of water scarcity. The Dublin Principles are as follows: (1) Freshwater is a finite and vulnerable resource, essential to sustain life, development and the environment; (2) Water development and management should be used on a participatory approach, involving users, planners and policymakers at all levels; (3) Women play a central part in the provision, management and safeguarding of water; and (4) Water has an economic value in all its competing uses and should be recognized as an economic good.

²² The Global Water Partnership (GWP) was established to promote integrated water resources management as a practice and principle. Its Secretariat is in the Swedish International Development Cooperation Agency (SIDA), in Stockholm.

²³ In 1995, former World Bank Vice President for Sustainable Development, Ismail Serageldin, expanded the sentiment and argued that ‘[t]he next World War will be over water.’ In 2001, Kofi Annan said that ‘[f]ierce competition for fresh water may well become a source of conflict and wars in the future.’ The link between water and conflict continues to be made, but more contemporary expressions do not assume that water itself will be the source of war. Instead, they recognize that water scarcity may exacerbate emerging, or existing, conflicts. For example, in 2008, former UN Secretary General Ban Ki-moon warned that, ‘Many of today’s conflicts around the world *are being fueled or exacerbated* [emphasis added] by water shortages and climate change is only making the situation worse’ (Strategic Foresight Group 2015).

²⁴ In his earlier work, Homer-Dixon, one of the most influential contributors of the environmental security literature, argued that ‘environmental scarcities are already contributing to violent conflicts in many parts of the developing world’

growth, and added environmental change and the unequal distribution of natural resources as sources of scarcity. He considered six types²⁵ of environmental change and concluded that, of these, ‘the renewable resource most likely to stimulate interstate resource war is river water²⁶.’ Gleick (1993) similarly suggested that ‘[w]ater already contributes to conflicts among nations, and future conflicts over water are increasingly likely.’

This ‘water wars’ thesis, or the assumption that nation states would go to war over water, was challenged several years later – most famously, by Aaron Wolf. Wolf’s (1998) seminal study on transboundary water conflicts concluded that the majority of the 3600 ‘water-related events’ that took place between 1948 and 1999 in international basins were cooperative in nature. Wolf shifted the academic community and the general public away from the fatalistic trope of ‘water scarcity will lead to war,’ although he did note the potential for water conflict to lead to disputes. By the late 1990s, the ‘water wars’ thesis had faded substantially (Aaron T. Wolf 2007; Schmeier 2010). Since then, Wolf and his colleagues at Oregon State University have produced several analyses to show there is a stronger trend towards cooperation than conflict in the water sector (Lucia De Stefano et al. 2010). This conclusion has been supported by others who also argue that water has more often than not led to inter-state cooperation (Elhance 1999; Allan 2002) and that any conflict is more likely to be at the intra-state level.

3.1 Describe, predict, evaluate and prescribe

“In a situation of growing water scarcity for multiple societal needs, states that share river basins are confronted with the choice to engage in protracted and costly conflicts with their neighbors over water or to cooperatively develop and share the bounty that water can help to produce in its multiple uses. The choices that can be and are made by states in conducting hydropolitics with their neighbors depend on the unique combinations of the geographic features of the specific basins with a multiplicity of historical, political, economic, social, strategic, and cultural factors and circumstances specific to each basin. This makes hydropolitics a multidisciplinary and complex subject of study.”

(Elhance 2000)

Hydropolitics, or the ‘systematic study of conflict and cooperation between states over water resources that transcend international borders’ (Elhance 1999, 2000), has grown substantially since the turn of the century. Although water continues to be discussed as a potential catalyst for cooperation and conflict (Chellaney 2013), this review focuses on the descriptive, predictive, evaluative, and prescriptive functions of the hydropolitics literature²⁷.

The ‘descriptive’ bucket seeks to define cooperation. The ‘predictive’ bucket attempts to identify the potential ‘hot spots’ for future water conflict so that the global community can mitigate the likelihood of conflict through (mostly institutional) interventions. The ‘evaluative’ bucket challenges instances labeled as cooperative, questions the desirability of cooperation/undesirability of conflict, and pushes for a new assessment of cooperative outcomes. Finally, the ‘prescriptive’ bucket suggests how countries might move towards transboundary water cooperation.

3.2 Defining water cooperation

and that [t]hese conflicts are probably the early signs of an upsurge of violence in the coming decades that will be induced or aggravated by scarcity.’

²⁵ The six types of environmental change that Homer-Dixon (1994) considers include greenhouse-induced climate change, stratospheric ozone depletion, degradation and loss of good agricultural land, degradation and removal of forests, depletion and pollution of fresh water supplies, and depletion of fisheries.

²⁶ In his later (and most frequently cited) work, Homer-Dixon (1999) softens his alarmist tone and suggests that “[i]n reality, war over river water between upstream and downstream neighbors are likely only in a narrow set of circumstances.”

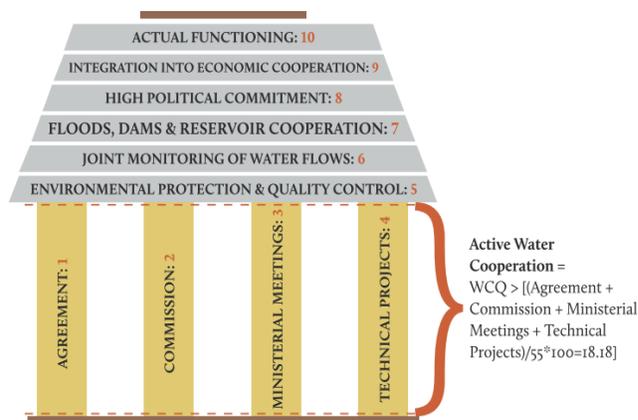
²⁷ For a more comprehensive literature review of hydropolitical literature, see Schmeier (2010).

What is water *cooperation*? Wolf's earlier work (1998) used the existence of transboundary water agreements as an indicator of inter-state cooperation. While this study was critical to dispelling the 'water wars' thesis, it relied on the existence of treaties as an indicator of cooperation²⁸. Wolf and his colleagues later modified their approach by formulating a Basins at Risk (BAR) water event intensity scale that considered a range of actions that could be considered cooperative. The BAR scale defines seven degrees of conflict (assigned a negative value) and seven degrees of cooperation (assigned a positive value)²⁹. Wolf et al. (2003) used the BAR scale to code 1831 events³⁰ that occurred between 1948 and 1999 in which water was identified as the driver of the event. Their findings supported Wolf's (1998) earlier assertion that cooperative events are more likely than conflictive events over water and also expanded the way in which water cooperation was defined.

Sadoff and Grey (2005) similarly advanced the discussion of cooperation by noting that the 'water wars' versus cooperation debate assumed cooperation to be all-or-nothing and the diametric opposite of war. They argued this framing obscured the point that countries had many reasons to cooperate, outside of avoiding war, and that there were different levels of cooperation that would satisfy their national agendas. They focused on the water management aspects of cooperation, describing a continuum of cooperation that starts with unilateral action (and disputes) on one end to joint action at the other end³¹. Several years later, they suggested that perhaps the goal should be 'effective cooperation,' which they defined as 'any action or set of actions by riparian states that leads to enhanced management or development of the watercourse to their mutual satisfaction' (Grey, Sadoff, and Connors 2016). While inexact, this definition of cooperation allows the participants to define it themselves.

There has been a recent push by the international community to, not only define, but also quantify water cooperation. In 2013, the International Year of Water Cooperation, several governments, international organizations and civil society groups issued joint declarations emphasizing the importance of 'cooperative development and management of shared water resources' (Leb 2015). With this increased attention to water cooperation came the desire to monitor levels of transboundary water cooperation. The same year, the Strategic Foresight Group, an India-based policy think tank, developed a Water Cooperation Quotient (WCQ) as a tool to

Figure 4. Water Cooperative Quotient Indicators of Cooperation



Source: SFG 2015

²⁸ As Mark Zeitoun and others from the London Water Research Group pointed out, the assumption that the existence of a treaty represents cooperation is problematic (see Section 3.2.4). In some cases, bilateral agreements may be reached through coercion.

²⁹ For example, a score of -7 represents formal declaration of war, whereas a score of 7 represents voluntary unification into one nation. A score of 0 denotes neutral acts for the international situation.

³⁰ 'Events' were defined as interactions between two or more nations that were conflictive or cooperative in nature. See Yoffe et al. (2003) or Wolf et al. (2003) for a description of their methodology.

³¹ Sadoff and Grey's (2005) continuum of cooperation starts with 'unilateral action (independent, non-transparent national plans), to coordination (Communication and information on national plans), to collaboration (adaptation of national plans for mutual benefits), to joint action (Joint plans, management or investment).' Unilateral action, defined as no communication whatsoever, would not just lead to forgoing potential benefits, but could actually lead to situations in which each country's national plan undermines another's.

quantitatively measure water cooperation intensity in transboundary river basins³².

An important contribution of the WCQ to the definition of water cooperation is that it focuses on the operationality of cooperative mechanisms³³. According to their analysis (Figure 4)³⁴, the Senegal River Basin Development (OMVS), the river basin organization overseeing the development of the Senegal river, is the most successful example of an operational water cooperation mechanism. The Permanent Indus Commission, established to oversee the implementation of the Indus Water Treaty (IWT) by Pakistan and India, does not meet the criteria for active water cooperation because it does not implement joint management of any projects. This is interesting, given that the IWT itself is often hailed as one of the most successful examples of water cooperation and negotiation (Biswas 1992; Elhance 2000).

The most recent, and most official, formulation of transboundary water cooperation was introduced in a 2018 report by the United Nations, entitled 'Progress on Transboundary Water Cooperation: Global baseline for SDG indicator 6.5.2.'³⁵ The report measures transboundary cooperation as the "[p]roportion of transboundary basin area (river, lake or aquifer) with an operational arrangement for water cooperation in place" (UN and UNESCO 2018). Several methods of defining *transboundary area*, *operational* and *arrangement* were considered³⁶. In the end, *arrangement* was defined as any 'bilateral or trilateral treaty, convention, agreement or other formal arrangement among countries that provides a framework for cooperation.' Under the indicator, an arrangement is considered operational, if and only if, these four criteria are met:

- a) a joint body or other institutional mechanism must be in place;
- b) there must be at least one annual (political or technical) meeting between riparian countries;
- c) there must be at least an annual exchange of data and information;
- d) and riparian countries have adopted joint or coordinated management plans, or joint objectives.

On one hand, this definition of water cooperation goes early definitions of cooperation because it recognizes the importance of the operationality of existing institutions. But by requiring all four criteria to be met to consider an arrangement 'operational,' the indicator misses everything on continuum of cooperation (Sadoff and Grey 2005) leading up to the joint action.

³² This tool was later modified in 2015. See Strategic Foresight Group (2015).

³³ The authors of the 2015 report argued that 'merely signing treaties for allocation of water resources between riparian countries is not cooperation... For cooperation to be meaningful, it must be active in an operational way' (Strategic Foresight Group 2015).

³⁴ The modified tool ranks cooperation based on ten indicators. The first, the existence of a formal agreement, is allocated a score of "1" in recognition that it is the formal starting point for inter-state water cooperation. The remaining nine indicators are allocated consecutive scores: existence of a river basin commission or organization (score 2); ministerial meetings (score 3); collaboration on joint technical projects (score 4); environmental protection and quality control (score 5); joint monitoring of water flows (score 6); notification, consultation and negotiation in infrastructure related development (score 7); high political commitment (score 8); integration into economic cooperation (score 9); and actual functioning of an institutional mechanism³⁴ (score 10) (Strategic Foresight Group 2015).

³⁵ Although the link between river basin planning and sustainable development was recognized through the formulation of IWRM, the link between transboundary water cooperation and sustainable development has only recently been explicitly recognized. In 2015, the United Nations adopted 17 Sustainable Development Goals (SDGs), one of which was SDG 6.5 (Water Resource Management). SDG 6.5 is broadly defined as 'implementing IWRM at all levels, including through transboundary cooperation when necessary.' While 6.5.1 focuses on ensuring the adoption of IWRM at every scale of governance, 6.5.2 encapsulates the goal of increasing transboundary cooperation.

³⁶ Three methods were considered in a Global Water Program TEC Background Paper as guidance for SDG Indicator 6.5.2. The current definition of the Indicator relies on Method 1. Method 2 defines 'operational' by the same criteria, but only one of the criteria need to be satisfied for an arrangement to be considered operational. It also measures levels of operational criteria. Method 3 establishes a typology of cooperation and defines operationality by the substantive outcomes. See McCracken 2017 for full discussion of the methods.

3.3 Predicting water conflict ‘hotspots’

The second set of writings on hydropolitics attempts to predict which river basins or regions could be potential water conflict ‘hotspots’. Scholars hoped these potential disputes over water could be avoided if there was enough time for those populations to prepare or for the global community to intervene. Some predictive research focused on the physical characteristics of the river basin as conditions that could lead to conflict. For example, Gleick (1993) emphasized the importance of four quantitative factors: the degree of scarcity (i.e., ratio of annual water withdrawals to annual renewable water availability), population growth (i.e., annual per capita water availability), fraction of total water supply that originates outside of a country’s borders, and high dependence on hydroelectricity as a fraction of total electric supply as measures that might predict water resource vulnerability. Based on these four criteria, he concluded that ‘[c]onflicts over the Nile, the Jordan, the Euphrates, the rivers of Central Asia, and the Ganges/Brahmaputra river systems appear increasingly likely because of growing competition for limited water resources, or because of disputes over the ownership and the right to use the resource.’

Later studies also considered non-physical criteria that might lead to conflict. For example, Wolf et al. (2003)³⁷ combined biophysical, geopolitical, and socioeconomic data with reported conflicts to explore their correlation. They concluded that most indicators of emerging conflict are only weakly related, and that ‘institutional capacity within a basin, whether defined as water management bodies or treaties, or generally positive international relations are as important, if not more so, than the physical aspects of a system.’³⁸ The study emphasized the importance of a river basin’s institutions to be adaptive, flexible and sufficiently established to absorb rapid changes to the basin’s physical or institutional systems (Aaron T. Wolf, Yoffe, and Giordano 2003; Yoffe, Wolf, and Giordano 2003). While identifying potential water conflict hot spots is not the focus of my research, it is important to note that many others have pursued this topic (L. De Stefano et al. 2017; Farinosi et al. 2018). What is most important, in my view, is their assertion that institutional mechanisms are crucial for reducing the likelihood of conflict.

3.4 Evaluating instances of water cooperation and conflict

The third set of hydropolitical writings, critical hydropolitical literature, can be loosely described as being ‘evaluative,’ since they seek to determine the nature and quality of cooperative efforts and outcomes. Primarily affiliated with the London Water Research Group (LWRG), the critical hydropolitical literature has played an important part in challenging earlier assumptions about cooperation and conflict in the water field. Influenced largely by realist views from international relations, critical hydropolitical scholars focus on the effect of power on water outcomes. A riparian’s power is defined by its (i) geographic power, or its riparian position along the river (upstream/downstream), (ii) material power, which refers to its ‘economic power, military might, technological prowess and international political and financial support’; (iii) bargaining power, or ability to set the agenda or rules of the game; and (iv) ideational power, or its ability to legitimize specific ideas and narratives (Zeitoun 2008; Daoudy 2009; A. E. Cascão and Zeitoun 2010). Within a river basin, the hydrohegemon³⁹, or the country with the greatest power, is presumed to push for specific outcomes either through coercive or

³⁷ Wolf et al (2003) compiled a dataset of every reported interaction between two or more countries (where water was the driver of the event) between 1948-1999. They coded 1,831 events according to a water event (BAR) intensity scale, where -7 represented the most conflictive (war) and +7 represented the most cooperative (voluntary unification into one country), and combined this data with geospatial data that included biophysical, socioeconomic and geopolitical data to identify basins at risk.

³⁸ They also surmised that the basins that are most likely to lead to political stress within the next 5 to 10 years include the Ganges-Brahmaputra, Han, Incomati, Kunene, Kura-Araks, Lake Chad, Lake Plata, Lempa, Limpopo, etc.

³⁹ When a state within a river basin has significantly greater power than the other states, it is considered the ‘hydrohegemon.’ For example, Turkey is considered the hydrohegemon within the Tigris-Euphrates River Basin (as compared to Syria and Iraq); Israel is considered the hydrohegemon in the Lower Jordan River Basin (as compared to Palestine and Jordan); and Egypt is considered the hydrohegemon in the Eastern Nile (as compared to Sudan and Ethiopia). Within each of these basins, the perceived hydrohegemons have ‘set the rules’ in terms of water allocation.

cooperative tactics (Zeitoun and Warner 2006). Critical hydropolitical literature challenges the assumptions made in earlier hydropolitical literature about cooperation (e.g., that the absence of war or the establishment of treaties and river basin organizations are signals of ‘cooperation’). It suggests that, in some cases, the absence of war can also be explained by acute power asymmetry. If power is unevenly distributed within a basin, the opportunity costs of conflict are too high for ‘weaker’ states, forcing them into a position of submission and acceptance of the status quo (Frey 1993; Zeitoun and Warner 2006).

Relatedly, these scholars also question the assumption that cooperation is always ‘good’ and that conflict is always ‘bad.’ Zeitoun and Mirumachi (2008) warn policymakers and researchers that such an uncritical view of cooperation can lead them astray in making cooperation the end goal, without notice of whether cooperation leads to more sustainable or equitable water management outcomes (also see Zeitoun 2013). They also replace the water ‘conflict/cooperation’ binary typically used in early hydropolitical literature with discussions of ‘water events,’ arguing that cooperation and conflict often co-exist (Zeitoun 2007; Mirumachi and Allan 2007; Zeitoun and Allan 2008; Mirumachi 2015).

3.5 Prescriptive approaches to cooperation

The ‘prescriptive’ stream of hydropolitical literature suggests ways in which more equitable and sustainable water distribution and use can be achieved. I have organized the literature according to what I consider the five main prescriptive approaches – institutionalist, idealist, realist, utilitarian and proceduralist – to enabling transboundary water cooperation. These approaches are not mutually exclusive, but have distinct foci.

- The **institutionalist** approach dominates the transboundary water cooperation discussion/debate. Institutionalists believe that institutions can reduce the transaction costs of cooperation by supporting joint fact-finding and data exchange. Prescriptions within this stream include focusing on ways of establishing transboundary water institutions (Yoffe, Wolf, and Giordano 2003; Meredith Giordano and Wolf 2003; Blomquist, Dinar, and Kemper 2005), making treaties more equitable with regard to water allocation (Aaron T Wolf 1999; Meredith Giordano and Wolf 2001), making them more flexible to adapt to climate change (Gleick 1993; S McCaffrey 2003; Cooley and Gleick 2011), including conflict resolution mechanisms (Robins 2013; De Bruyne and Fischhendler 2013), ensuring information exchange (Zawahri 2009), and strengthening enforcement (Meredith Giordano and Wolf 2003).
- The **idealist** approach focuses on identifying or creating a unifying ideology that will bring actors together to cooperate. The unifying ideology could range from an appeal to collectively manage transboundary water in pursuit of democratic ideals (Lilienthal 1944), basin-wide economic development (e.g., IWRM), water security (Grey and Sadoff 2007; Briscoe 2009) or achieving fair/just water use outcomes (Zeitoun 2013). The idealist and institutionalist approaches often overlap; in essence, the ‘ideal’ is the vision of shared goals whereas the institutional reform can enable goals to be realized. For example, the principles of ‘equitable and reasonable use’ and the obligation not to cause ‘significant harm’ are now widely held global ideals in water management and are codified in the 1997 United Nations Watercourses Convention. Prescriptions within this stream relate to framing transboundary water cooperation in terms of the goals being pursued.
- The **realist** approach (e.g., the London Water Research Group) focuses on the role of politics and power in shaping transboundary water management outcomes (Lowi 1993; Zeitoun 2008). There are two competing theories – the Balance of Power theory, in which peace is achieved when influential states are balanced with regard to power, and the Hegemonic Stability theory, in which hegemonic states use their power to enhance the stability of the system (Dinar 2000). Realist interventions show how countries intervene by trying to ‘level the playing field’ through different strategies. These strategies include ‘counter-hegemonic’ moves such as unilaterally building infrastructure (e.g., building a dam upstream), reducing another country’s ability to access foreign assistance, disseminating knowledge (to counter hegemonic

narratives), and funding oppositional groups within another country to reduce its capacity to manage (Cascão 2008).

- The **utilitarian** approach emphasizes the need for mutually beneficial agreements and an equitable distribution of costs/benefits (Sadoff and Grey 2002; Dombrowsky 2009; Tawfik 2016). Sadoff and Grey's (2002) identification of four types of cooperative benefits (i.e., benefits to the river, benefits from the river, reduction in costs because of the river, and benefits beyond the river) was influential in the stream because it shifted the focus from allocation of water to allocation of the benefits of cooperatively managing water. In later work, they emphasized the importance of the perceived fairness of the distribution of benefits, costs, and future risk (Grey, Sadoff, and Connors 2009). The underlying assumption is that a unifying ideology is not enough to prompt states to cooperate with one another; that they must also recognize the benefits they can gain (or individual costs they can avoid) through cooperation. Utilitarian analyses and prescriptions focus on building a rational (often economic) argument for why (and when) countries should cooperate with one another (Whittington, Wu, and Sadoff 2005; Blackmore and Whittington 2008).
- The **proceduralist/negotiated** approach focuses on the dispute resolution function of water management. The starting premise is that a core function of water management is to resolve or mitigate conflicting demands (Aaron T. Wolf 1997; Arron T. Wolf et al. 2005; Priscoli and Wolf 2009; Subramanian, Brown, and Wolf 2012; Petersen-Perlman, Veilleux, and Wolf 2017; Islam and Susskind 2013). Grey, Sadoff, and Connors (2009) draw on their experience supporting transboundary water negotiations through their work with the World Bank to remind practitioners that transboundary water cooperation is a multi-year effort that requires a high level of trust among the negotiating parties, ownership of the cooperative agenda by the parties, and, in some cases, neutral facilitation to help with process management, value creation, and ensuring a safe space for dialogue. Prescriptions include adopting a mutual gains approach to negotiation (Grzybowski, Mccaffrey, and Paisley 2010; Verdini 2017), value creation by the negotiating countries and the international community (S. Salman 2013; Islam and Susskind 2013); ensuring a process of negotiation perceived to be fair and efficient by those directly involved in negotiations; ways of reducing risk as a barrier within negotiation (Subramanian, Brown, and Wolf 2012); ensuring political commitment to the negotiations (S. Salman 2013); the potential need for ambiguity in negotiated agreements to ensure all sides 'save face' (Fischhendler 2008); the effect of negotiations on treaty design (Zawahri, Dinar, and Nigatu 2016); and the role of international organizations in mediating and supporting negotiations (Nakayama 1997; Browder 2000; Salman 2013; Grey et al. 2016).

All five prescriptive approaches⁴⁰ are useful in developing strategies for avoiding potential transboundary water conflicts but differ in the unit of analysis they emphasize, and the interventions they suggest (Table 1).

Table 1. Prescriptive approaches to transboundary water cooperation

Prescriptive Approaches	Description	Unit of Analysis	Types of interventions
Institutionalist	Focus is on how to build institutions to promote and sustain cooperation by increasing access to information and decreasing transaction costs.	Institution	Establish river basin organizations; create basin-wide agreements or transboundary water laws.

⁴⁰ Some scholars, especially those who continue to work as practitioners, also emphasize the need for pragmatism (Briscoe 2009; Leb 2015). The example often given is that of the Indus Water Treaty negotiations, during which an agreement would not have been reached if the parties or mediator (World Bank) insisted on the ideal of IWRM.

Idealist	Focus is on pursuing cooperation by identifying a unifying ideology or a shared values-based goal. These interventions typically emphasize globally acceptable goals or approaches.	Global	Encourage framings: i.e., 'equitable and reasonable use', IWRM, justice, water security, etc.
Realist	Focus is on the effect of power distribution on cooperation. Assumes that collective action requires coercion and hierarchal power.	State	Counter-hegemonic moves: constructing hydraulic infrastructure to take control, pushing a counter-hegemonic discourse into international arena, etc.
Utilitarian	Focus is on making a 'rational' argument for cooperation by quantifying potential benefits and costs.	State	Identify economic, social and/or environmental benefits of cooperation (through research, media, speeches, etc.); value creation by offering more benefits, etc.
Proceduralist (or Negotiated)	Focus is on the designing a process of negotiation that will lead to a fair, stable, and wise consensus agreement.	Negotiation	Inclusion of a third-party mediator to manage process, training water practitioners on mutual gains negotiation, etc.

In summary, institutionalists believe that cooperation can be achieved by developing appropriate institutions and focus their efforts on establishing laws and river basin organizations; idealists emphasize the need for a unifying ideology and promote that ideology through institutional collaboration; realists suggest that (non-coercive) cooperation can only be achieved by a benevolent hydro-hegemon or when all states have relatively equal power; utilitarians believe that states will cooperate when the costs of non-cooperation are greater than the costs of cooperation, and that the resulting benefits, costs and risks are equitably distributed among the states; and proceduralists believe that a 'good' process is critical to achieving agreement and can reduce the effect of disparities in relative state power⁴¹.

I aim to add to the fifth component of the prescriptive literature by focusing on the role that state- and non-state actors can play in creating enabling conditions that support states in reaching consensus on transboundary water agreements. My interest falls under the heading of water diplomacy. While there is no single definition of water diplomacy, it is usually contrasted with water cooperation in that it more explicitly focuses on conflict prevention and peace promotion and creates space for multi-track negotiation through the inclusion of many types of stakeholders (Browder 2000; Islam and Susskind 2013; Huntjens and de Man 2017; Molnar et al. 2017). This literature generally focuses on ways to integrate the interests of multiple stakeholders through a cooperative approach to adaptive governance. Similar to the proceduralist approach, it applies negotiation theory and the lessons of practice to transboundary water management. In some formulations⁴², the concept of water diplomacy goes a step further by incorporating an analysis of water conflicts in an attempt to identify intervention possibilities for both state- and non-state actors to help resolve conflict.

IV. Transboundary Water Governance as a Collective Action Problem

An inherent challenge of environmental governance is that natural boundaries rarely align with political boundaries. What separates transboundary water governance from many other types of environmental

⁴¹ One can look at the Indus Treaty negotiation process as an example of when process matters more than each state's relative 'power.' Although India was the 'stronger' party (in terms of its military, economy, and political alliances), the Indus Water Treaty (IWT) protected Pakistan's interests in the Indus Basin tributaries. Mediation (and added monetary incentive) by the World Bank arguably ensured that both countries' interests were met.

⁴² For example, in the Water Diplomacy program developed at Tufts University, MIT and Harvard.

governance (e.g. forestry, wildlife conservation, etc.) is that poor management upstream will have negative impacts downstream⁴³. This makes coordinated water management crucial to ensuring adequate water quality and quantity for all users.

In the case of river basins that fall within the boundaries of a single country, effective water governance requires harmony between policies and practices across localities. Arguably, this is less complicated than transboundary water governance because there is an overarching *Leviathan* (i.e., national government) that can impose effective legislation from above⁴⁴. Effective management of transboundary water, on the other hand, is typically more challenging because it requires voluntary cooperation among sovereign states.

What makes voluntary collective action so challenging? I consider two hypotheses based on the work of two great scholars – Mancur Olson and Elinor Ostrom – who have contributed to our understanding of collective action. Olson (1965) argues that voluntary collective action can only happen within a small group because as the group size increases, (i) the transaction costs⁴⁵ of the collective effort also increase, (ii) the likelihood of ‘free riding’ also increases as the oversight or social pressure on each actor to follow the norms of collective action decreases, and (iii) the benefits of collective action become too diffuse to overcome the individual costs associated with pursuing collective action. According to Olson, the limiting variable is the number of actors.

Elinor Ostrom’s work in the 1990s on the governance of common pool resources⁴⁶ challenges Olson’s argument by highlighting successful examples of voluntary (i.e., in the absence of coercion by a hierarchical power) collective action within large groups. Ostrom argues that the number of actors is less important than other factors (including common understanding of interests, discount rates, and transaction costs) and that collective action is possible in large, homogenous groups (Ostrom 1990). According to Ostrom, heterogeneity among actors is more likely to pose a barrier to collective action than the number of actors.

My interest⁴⁷ is in understanding how these two variables – number of actors and degree of heterogeneity among actors – create barriers to voluntary collective action⁴⁸ because they may determine the scale at which we pursue transboundary water agreements.

⁴³ One could also contrast it with a third category of environmental problems, where poor management results in negative externalities experienced by all users. Pollution by one country, for example, affects neighboring countries (e.g. haze from burning palm oil byproducts in Indonesia reduces air quality in Malaysia) and affects all countries (by contributing to factors leading to climate change). In the case of transboundary water governance, while inclusion of all affected countries is necessary for effective water governance, the number of stakeholders is at least limited the number of riparians.

⁴⁴ Although this research focuses on transboundary water governance, it should be recognized that sub-national water governance is also complicated. In the U.S. for example, governance of the Colorado River requires negotiations among the seven basin states (Colorado, Arizona, California, Nevada, New Mexico, Utah, and Wyoming) based on their water demands for urban and rural (i.e. agricultural) uses.

⁴⁵ Transaction costs are the costs related to devising, monitoring and enforcing rules governing society.

⁴⁶ Ostrom (1999) defines common pool resources as ‘natural and human constructed resources in which (i) exclusion of beneficiaries through physical and institutional means is especially costly, and (ii) exploitation by one user reduces resource availability for others.’

⁴⁷ This interest was partially inspired by the work of Ostrom and Keohane (1995). In 1995, Ostrom and International Relations scholar Robert Keohane explored how these two variables - number and degree of heterogeneity of actors – helped to explain ‘cooperation and discord at local and global levels.’ They noticed that these two variables are treated differently in International Relations (IR) theory and Common Pool Resource (CPR) literature. While CPR literature points to examples of fisheries and forest conservation to show that collective action can still be achieved in a community with a large number of stakeholders, IR literature suggests that collective action is more easily achieved when there are only a few stakeholders. While CPR literature suggests that collective action is more easily achieved when actors are homogenous, IR literature suggests that heterogeneity may be an enabler of collective action because actors can trade across their differences.

⁴⁸ The emphasis is on *voluntary* collective action because enforcement by a hegemon and incentivization by the broader global community are becoming less relevant. In the Nile Basin, cooperation at these different scales was enforced and

4.1 Research Question and Significance

This research explores how the scale of collective action interacts with cooperation. I ask, “**How does the number of actors and degree of heterogeneity affect the barriers to collective action in transboundary water negotiations?**”

My hypotheses focus on the number and heterogeneity of actors. In their most simple forms, they are:

H₁: As the number of actors increases, the barriers to collective action increase.

H₂: As the diversity of actors increases, the barriers to collective action increase.

These hypotheses are important with regards to selecting the scale at which we should pursue collective action in transboundary water negotiations. In many cases, the number and degree of heterogeneity among states increases as the geographic area under consideration increases. If pursuing collective action at larger scales poses insurmountable barriers, the countries may instead refocus their efforts on pursuing collective action at smaller scales (i.e., presumably fewer actors and lower degree of heterogeneity).

There are three scales at which transboundary water agreements are frequently pursued: basin-wide, bilaterally, and for specific projects (Table 2).

Table 2. Pursuing Collective Action at Different Scales

Scale	Basin-wide	Bilateral Agreements	Project-specific
Logic	IWRM: Can ‘optimize’ water use; only way to reach a comprehensive agreement.	Two states (lower transaction costs); degree of heterogeneity may be lower.	Number of actors limited to those impacted by project; Clear(er) distribution of costs/benefits of project (opportunity to trade across differences).
Disadvantage	Many actors; Higher likelihood that the degree of heterogeneity will be greater.	One country may ‘coerce’ the other country into agreement; May create sense of unfairness due to exclusion.	Reactive approach to cooperation may incentivize countries to unilaterally construct projects.
Example from the Nile	CFA (Case #1)	1959 Egypt-Sudan Nile Agreement	GERD (Case #2)

The largest scale to approach water cooperation is through Integrated Water Resources Management (IWRM), which promotes basin-wide hydraulic development. The underlying rationale for IWRM is that

enabled by the British in the late 19th and early 20th centuries. After British influence decreased, many countries turned to international development organizations to help finance hydraulic development along the Nile. These organizations developed safeguards to help ensure that countries continued to cooperate rather than pursuing projects without consulting their upstream and/or downstream neighbors. For example, the World Bank has applied Operational Policy 7.50 any projects on International Waterways since 1994. OP 7.50 stipulates that when a World Bank funded project is considered on an international waterway, the borrower (country) or the World Bank must notify the other riparians of the project details and give them an opportunity to raise concerns about potential negative impacts. This ensured that countries notified their neighbors before project implementation began. As the Nile countries’ economies have strengthened, and assistance from single donor countries (e.g., China) has increased, their reliance on international lenders has decreased, making the safeguards irrelevant. For example, Ethiopia was able to fully finance the Grand Ethiopian Renaissance Dam. Without a need for international assistance, the safeguards were not triggered and Ethiopia had no other requirement to inform its downstream neighbors of its plans to build the dam. The challenge now is to manage the Nile River resources in a way that benefits all the basin countries in the absence of an authoritative body.

economic development can be driven through water management across an entire river basin by optimizing water use (assuming the geographic area is large enough). Despite the potential benefits that can be realized through IWRM, collective action at this scale may be more difficult to organize than at other scales due to the high number of actors. An example of this approach is the basin-wide approach of the Nile Basin Cooperative Framework Agreement, a legal agreement drafted and negotiated by all the⁴⁹ Nile Basin countries. Collective action approaches at this geographic scale may be more difficult due to the number and heterogeneity of actors involved.

The most common approach is for collective action to be pursued bilaterally. In the Nile Basin, for example, water use has historically been dictated by two major bilateral agreements – the 1929 Nile Anglo-Egyptian Agreement, and 1959 Nile Agreement between Egypt and Sudan (Chapter 2). This approach keeps the number of actors low and may help ensure that the degree of heterogeneity among actors is manageable. The disadvantage is that a pattern of bilateral agreements can lead to fragmented water governance and to a situation perceived to be unfair by countries that are excluded from, but affected by, such agreements. In the case of the Nile, for example, Ethiopia refuses to recognize the legitimacy of the 1929 and 1959 Nile Agreements because it was not a party to either one⁵⁰.

A third approach is to pursue collective action on specific projects⁵¹. The difference between the first two models and the third has less to do with differences in geographic scale and more to do with differences in substantive focus. The current negotiations on the Grand Ethiopian Renaissance Dam (GERD) on the Blue Nile are emblematic of this type of approach in which a technical agreement must be reached on the filling and operation of the dam, but only by the affected countries (Ethiopia, Sudan, and Egypt). Project-based agreements can usually be reached more easily because (i) the costs and benefits of a project, potential tradeoffs and the distribution of impacts are clear; (ii) the number of stakeholders is confined to the number of countries affected by the project; and (iii) there are often time limits imposed on the negotiations based on how long it is likely to take to construct a project. The downside of pursuing collective action at this scale, however, is that it is reactive and does not allow the countries to optimize water use across a larger geographic scale.

4.2 Methodological Approach and Case Selection

I used a case study approach, using document analysis, participant observation, and semi-structured interviews to delineate the barriers to achieving collective action on transboundary water use in the Nile Basin.

A case study approach is employed frequently in applied social science research, especially with ‘how’ or ‘why’ questions about ‘a contemporary set of events over which the investigator has little or no control’ (Yin 2009). One advantage is that it allows researchers to explore a phenomenon in its full context. Although findings related to my first order question about collective action should be generalizable, the specific mechanics of how barriers to collective action and the resulting interventions by actors that attempt to overcome these barriers must be viewed in their specific context. The case study approach also allows researchers to rely on multiple

⁴⁹ Nine Nile countries were actively involved in the negotiations. Eritrea participated as an observer.

⁵⁰ An Ethiopian involved in the CFA negotiations described Ethiopia’s positions on the Nile agreements (Interview: March 26, 2015): “The 1929 Agreement is signed between Egypt and Great Britain, Great Britain on behalf of the upstream colonies. Ethiopia has never been the colony of anybody. So the 1929 Agreement is not applicable to Ethiopia. The 1959 agreement is between Egypt and Sudan so it is binding between the two countries. Ethiopia actually requested in 1957, when they started the negotiation, requested to be part of that negotiation but the two countries declined Ethiopia’s request. So Ethiopia automatically rejected the process itself. And then in 1959 when they signed the agreement, Ethiopia rejected the agreement and also notified the UN and other international organizations that it will not be binding on Ethiopia and that Ethiopia will not accept. To date, Ethiopia will not recognize the existing agreements.”

⁵¹ In some cases, this fourth approach may be mixed with the third model. For example, the 1959 Nile Agreement was a water-sharing agreement but was reached in part due to Egypt’s desire to construct the High Aswan Dam and Sudan’s desire to construct the Roseires dam.

sources of data and methods, enabling triangulation to reduce the likelihood of reporting bias (Patton 1999; Carter et al. 2014; Oppermann 2000).

I selected the Nile Basin as my case for several reasons. First, after the Danube⁵², the Nile River Basin includes the greatest number of countries. In this respect, it represents a collective action problem complicated by diversity in language, culture, customs, beliefs and histories of the people. This allowed me to consider heterogeneity of actors as one of the potential barriers to cooperation. Second, formal water agreements were pursued at different scales (basin-wide and project-specific) and approximately during the same time period. This allowed me to consider scale as a potential barrier to cooperation, while holding most other factors (e.g., history, institutional arrangements, physical context, etc.) relatively constant⁵³. Finally, these are existing, and evolving, cooperative efforts – providing an opportunity to interview participants in the midst of their negotiations while their perceptions are still fresh.

Within the Nile Basin, I selected two negotiations to test my hypotheses: the basin-wide negotiations on the Cooperative Framework Agreement (CFA) among all Nile countries (Case #1) and the ongoing project-specific negotiations on the Grand Ethiopian Renaissance Dam (Case #2). Comparing negotiations at two different scales enabled me to consider the effects of the number and heterogeneity of actors on barriers to collective action.

4.3 Defining the Variables

The number of actors in transboundary water negotiations can be defined in two ways. In Common Pool Resource (CPR) literature, the number is typically defined as the number of stakeholders within a community that are involved in jointly governing shared resources. In International Relations literature, on the other hand, the number of actors is defined both in terms of the number of states involved and the number of individuals who participate in formal negotiations. In this research, I consider both.

I define heterogeneity similarly to Keohane and Ostrom⁵⁴ and have added ‘identity’ (broadly defined as culture, language and history) as a fifth measure based on my research. I define ‘capability’ by each country’s negotiating, legal, and technical capacities⁵⁵; ‘preferences’ by how each country believes the common good should be pursued; ‘information’ as any knowledge or data needed to make a decision about how to proceed with the collective effort; and ‘beliefs’ by ideological differences (e.g., different conceptions of fairness) that may lead the countries to different conceptions of the common good.

I treat negotiations as a deliberative process by which actors (states/individuals) collectively define their common goal and deliberate on ways to achieve it. If the actors started with consensus on both of these items (collective goal and how to achieve it), they would arguably be able to achieve collective action relatively quickly. When actors have very different perceptions of what the collective goal is (heterogeneity in beliefs) and

⁵² The Danube River runs through 10 countries, but the river basin includes 19 countries. Of these, 14 (Germany, Austria, Czech Republic, Slovakia, Hungary, Slovenia, Croatia, Bosnia and Herzegovina, Serbia, Montenegro, Romania, Bulgaria, Moldova and Ukraine) have signed onto the Convention on Cooperation for the Protection and Sustainable Use of the Danube River (aka Danube River Protection Convention, or DRPC). The DRPC was signed in 1994 and entered into force in October 1998. For more information, see: <http://www.internationalwatersgovernance.com/danube-river-basin.html>.

⁵³ There were, of course, major political and economic changes in the Basin between 1997 until now. However, these factors are relatively constant compared to if I were to choose case studies of negotiations in different river basins.

⁵⁴ Keohane and Ostrom (1995) define heterogeneity in three ways: the actors’ (i) capabilities, or individual assets that can be used to achieve a purpose; (ii) preferences, both in terms of intensity of preferences and differences in evaluations of the costs and benefits associated with particular policies and outcomes; and (iii) information and beliefs.

⁵⁵ A second way to define differences in capabilities is by the differences in actors’ influence over others or ability to coerce others. A distinction needs to be made here between influence within and outside of the negotiations. This chapter highlights examples of both, but I limits my discussion of ‘differences in capabilities’ to those within the negotiations.

how to achieve it (heterogeneity in preferences); when there are differences in their levels of information (heterogeneity in information) or capability in pushing their desired outcome (heterogeneity in capabilities); and when there are differences in their identities (culture, language, and histories), they have a harder time achieving consensus.

‘Heterogeneity’ is a useful, but problematic, variable. Useful in that it helps us consider ways in which differences among countries may create, or reduce, barriers to collective action. Problematic because ‘heterogeneity’ is not quantifiable and is partially subjective. Therefore, in my discussions on heterogeneity, it should be noted that I am not measuring heterogeneity, but instead trying to identify ways in which differences among actors can be reduced as potential barriers to collective action. Therefore, a distinction should also be made between reducing heterogeneity *among actors* and reducing heterogeneity *as a potential barrier* to collective action. My focus is on the latter, although it may sometimes require the former. I do not try to measure heterogeneity, but instead describe them as ‘high’, ‘medium’, or ‘low’ based on how negotiators characterized the differences among the countries in their descriptions of the Nile water ‘conflict’. For example, several negotiators mentioned that the difference between the countries’ capabilities was reduced significantly as a result of the work of the Nile Basin Initiative. I therefore assigned a ‘low’ value to their heterogeneity in capability.

Some types of heterogeneity – capability, information, and beliefs – can pose considerable obstacles to collective action. When the gaps among the actors’ capabilities are wide – as was the case in the Nile, where Egypt and Sudan’s capacities were historically greater than that of the upstream countries’ – it can prevent actors from buying into the negotiation process because they are unable to forecast the consequences of various proposals. Similarly, significant gaps in access to information make it very difficult to negotiate on an equal playing field. Finally, differences in beliefs, or ideological differences (e.g., based on conceptions of fairness) may also lead to impasse if the actors have very different ideas of what is in their collective interest. Other types of heterogeneity – specifically, heterogeneity in preferences – may actually enable cooperation when they are linked to tangible outcomes. Within a process of negotiation, for example, one actor may ‘trade across differences’ and agree on an issue that is of lesser priority to them in order to gain support on a higher priority issue.

I consider these variables in terms of the extent to which they were perceived to have been obstacles to, or enablers of, collective action in two Nile-based negotiations: the basin-wide Nile Basin Cooperative Framework Agreement (CFA) negotiations and the project-specific Grand Ethiopian Renaissance Dam (GERD) negotiations (Table 3).

Table 3. Number of Actors and Changes in Heterogeneity in CFA and GERD Negotiations

Variables	Definition	Nile Basin Cooperative Framework Agreement (1997 – 2010) BASIN-WIDE	Declaration of Principles on the Grand Ethiopian Renaissance Dam (2011 – present) PROJECT-SPECIFIC
Number of actors	States	9 Ethiopia, Sudan, Egypt, Kenya, Uganda, Rwanda, Burundi, DRC, and Tanzania, Eritrea observed.	3 Ethiopia, Sudan and Egypt
	Groups	Panel of Experts (POE), Transitional Committee (TC), Negotiation Committee (NC), Nile Council of Ministers (Nile-COM) and Nile Technical Advisory Committee (Nile-TAC), UNDP, World Bank.	International Panel of Experts (IPoE), Ministries of Water, Ministries of Foreign Affairs, Ministries of Intelligence, Country leaders.
	Capability	High to Low	Low

Degree of Heterogeneity of Actors	Preferences	High to Low	Medium – but enables cooperation.
	Information	High to Low	High (trying to address through JFF)
	Beliefs	High to Medium	High
	Identity	High	High

The CFA negotiations illustrate a case in which many actors, with a high degree of heterogeneity, pursued collective action. These two variables posed considerable obstacles at the start of the CFA process. These obstacles were reduced over time through a series of process design decisions. The transaction costs associated with having a high number of actors, for example, were reduced by limiting the number of representatives involved in each stage, designating one spokesperson per country, and through professional facilitation. Barriers related to heterogeneity were also reduced by including international experts to provide additional support (capability), through deliberation on the provisions of the CFA (preferences), making the same information available to all the country representatives (information), and introducing the concept of benefit sharing (beliefs). While heterogeneity in culture, language, and histories cannot be reduced within a negotiation, trust-building (both within and outside of the negotiation process) can help reduce it as a potential obstacle to collective action. Trust was built among actors involved in the CFA drafting and negotiation process by providing multiple opportunities for informal deliberation and ensuring the same individuals were involved throughout most of the process. This case illustrates the importance of building the right institutions and ‘good’ process to enabling collective action.

In comparison to the CFA negotiations, the GERD negotiations started among fewer actors with a lower degree⁵⁶ of heterogeneity. This partially explains why the three Blue Nile countries (Egypt, Ethiopia, and Sudan) were able to reach agreement on the Declaration of Principles (DoP), a confidence-building agreement on the GERD, in a comparatively short amount of time. Although I describe several process design decisions (including joint fact-finding, value creation, and building trust⁵⁷) that helped reduce these barriers within the GERD negotiations (Chapter 4), I highlight how the specific context also creates barriers to collective action.

4.4 Data Sources

Given the need to understand the perceived barriers to cooperation within the two negotiation processes, I focused on qualitative accounts of what occurred, building on data collection through media analysis, document analysis, and semi-structured interviews.

Media Analysis of the CFA and GERD Negotiations: An initial review of media reports (within and across the three countries) and transcripts of speeches by country leaders revealed that the same events are often framed differently from country to country. I chose specific events (e.g., end of CFA negotiations, announcement of the construction of the GERD, signing of the Declaration of Principles on the GERD, current 9-party negotiations, etc.) to analyze based on my initial interviews. This review allowed me to develop an initial list of perceived barriers to cooperation in the Nile at three points in time: late 1990s (pre-CFA negotiations), 2010-2011 (end of CFA negotiations and the announcement of the construction of the GERD), and now (2018-9).

⁵⁶ In 2011, when the GERD negotiations started, the degree of heterogeneity among actors in terms of their capabilities and information was comparatively lower than it had been at the start of the CFA negotiations. This was partly because only three countries were involved in the GERD negotiations (versus nine in the CFA negotiations) and because the CFA negotiations (which took place before the GERD negotiations) helped reduce some types of heterogeneity between the parties.

⁵⁷ I focus on the countries’ joint fact finding effort (to reduce heterogeneity in information), value creation by offering to sell electricity generated at GERD to Egypt and Sudan (leveraging heterogeneity in preferences to enable collective action), and signing of the Declaration of Principles (to build trust).

Document Analysis of the CFA and GERD negotiations: I reviewed published agreements, Minutes of meetings (when available), media reports, government press releases, Wikileaks, and scholarly publications related to both negotiations.

Semi-structured Interviews: I conducted semi-structured interviews with a range of professionals and academics involved in (i) negotiations on the CFA and (ii) negotiations on the filling and operation of the GERD. I also conducted interviews with journalists, academics and researchers that focus on transboundary water cooperation in the Eastern Nile Basin. This list of interviewees is intentionally broad. First, it recognizes that the ongoing negotiations are very politically sensitive and that many individuals and organizations are reluctant to speak about the current state of negotiations. Second, I was interested in understanding what role non-state actors play in encouraging transboundary cooperation.

The questions in my Interview Protocol were designed to answer the following: At what scale (i.e., basin-wide versus sub-basin versus project-specific) do different actors define the ‘problem’ of Nile water cooperation? What were the perceived barriers in each of the two negotiation processes? How have the perceived barriers to cooperation (between Egypt, Sudan, and Ethiopia) changed over time?

4.5 Sampling Method, Research Conducted, and Data Analysis

Initial contacts for interviews were identified through reviewing project documents, academic publications, and media releases to identify formally engaged state- and active non-state actors. Once initial contacts were made, I used a snowball sampling method to identify additional subjects.

This research builds on inquiries I began in 2015-6 on the CFA negotiation process. I conducted interviews over Skype and also traveled to Cairo, Egypt and Addis Ababa, Ethiopia in February and March of 2015 to conduct face-to-face interviews. I conducted 18 semi-structured interviews⁵⁸ with a range of professionals involved in (i) negotiations leading to the 2010 Cooperative Framework Agreement; (ii) negotiations leading to the 2015 Declaration of Principles on the Grand Ethiopian Renaissance Dam; and (iii) water management in the Nile Basin. Many of the Sudanese and Ethiopian negotiators who were involved in the CFA negotiations are also involved in the GERD negotiations.

Since then, I have made four additional trips to the region. In Oct. 23-25, 2017, I attended the 5th Nile Basin Development Forum in Kigali, Rwanda. From Oct. 29 – Nov 2, 2017, I participated in a Water Diplomacy Workshop for Young Professionals in Alexandria, Egypt. Although the Water Diplomacy Workshop did not focus on Nile cooperation, the organizers convened a ‘town hall’ and invited members of the public to a panel of Egyptian water professionals and researchers about Egypt’s water security. The conversation quickly turned to Egypt’s future security with the construction of the GERD. I also conducted several interviews with civil society members and a representative of the Egyptian chapter of the Nile Basin Discourse, a basin-wide institution established to include civil society in basin planning, about the role of civil society in Nile planning. In Nov. 29 – 30, 2017, I attended the first Nile Basin Discourse (NBD) Summit in Entebbe, Uganda and conducted several more interviews.

I conducted more field research in Addis Ababa, Ethiopia; Cairo, Egypt; and Khartoum, Sudan between late June until August of 2018. I spent approximately one month in Cairo, two weeks in Khartoum, and one week in Addis Ababa. I originally planned to spend equal time in all three cities, but adjusted my schedule when it became clear that it would be the most difficult to schedule interviews in Cairo and easier to pre-arrange

⁵⁸ Of the 18 interviewees, 7 were directly involved in the CFA drafting and negotiation process (3 Egyptians, 3 Ethiopians, and 1 international consultant). 5 other interviewees observed parts of the process, but were not directly involved in negotiations. The rest were professionals and academics that worked on Nile water issues either domestically or as international consultants.

interviews in Khartoum and Addis Ababa through contacts. Most interviews lasted 1-1.5 hours⁵⁹ and were conducted in English. In that time, I conducted 18⁶⁰, 12⁶¹, and 8⁶², face-to-face interviews with individuals from Egypt, Sudan, and Ethiopia, respectively. Of these, 19 were with individuals who participated in or directly observed parts of the CFA and/or GERD negotiations⁶³.

I coded transcriptions of the interviews using Dedoose, an online coding platform, based on three broad categories of codes:

- i. **Barriers to cooperation** (drawn from my hypotheses). This included any mention of the number of actors or heterogeneity of actors (in terms of their capabilities, preferences, information, beliefs, and identity).
- ii. **Enabling conditions and interventions** (drawn from my literature review). This included any mention of institutions, unifying ideals, power (i.e. realist approach), costs and benefits (i.e. utilitarian) and procedural details (i.e. proceduralist approach).
- iii. **Intervention by state and non-state actors.**

I also used grounded theory and emergent coding to keep track of themes I noticed repeatedly coming up during the interviews.

4.6 Limitations

There were several limitations to my research. First, it was very difficult to gain access to government officials because cooperation over water use is a politically sensitive issue in the Eastern Nile Basin. This is especially true in Egypt in relation to the ongoing GERD negotiations. Nearly every Egyptian official that I met with asked me to refer to them in an anonymous capacity and/or clarified that they were providing their personal opinion rather than the official Egyptian position. I relied on Egyptian and Ethiopian journalists who actively cover Nile issues to summarize the role of the media in covering the negotiations; suggest additional sources of data; and to describe what information they were receiving about the negotiations off-record. I also met with academics well-known for their research and/or informal engagement in the Nile negotiations to provide additional perspective. I relied heavily on other primary (e.g., CFA Meeting Minutes, media interviews, and formal Ministry statements) and secondary (e.g., articles, books, commentaries) sources to ensure internal validity.

Second, the CFA negotiations occurred relatively recently and the GERD negotiations are ongoing. Release of the details of the ongoing negotiations may have a negative impact on ongoing efforts. Some of the data I have gathered through my interviews was only shared with me to give me broader perspective and is confidential. I have written my findings in a way that, I hope, will prove useful to ongoing and future negotiations in the Nile and other river basins. I have excluded any identities, direct quotes, or information that I thought could hurt the ongoing negotiations.

Third, my access to Sudan was limited due to concerns about the country's political stability. I was granted institutional approval (from my academic institution) to conduct my fieldwork in July 2018, but for the

⁵⁹ The longest interview was six hours, for which I am very grateful.

⁶⁰ Of the 18 interviews conducted in Egypt, 7 were individuals who participated directly in the negotiations on the GERD (the majority were from the Ministry of Foreign Affairs); 3 were from actively engaged in promoting public participation in Nile management; 4 were academics or researchers; and 4 were journalists covering the Nile.

⁶¹ Of the 12 interviews conducted in Sudan, 6 were individuals who participated directly in the negotiations on the CFA and/or GERD; 3 were individuals who are actively engaged in promoting public participation in Nile management; 2 were academics; and one was a journalist who covered the Nile.

⁶² Of the 8 interviews conducted in Ethiopia, 6 were individuals who participated directly in the negotiations on the CFA and/or GERD.

⁶³ I have included a select list of interviewees directly involved in the negotiations in the Appendix.

minimum time needed to conduct my interviews. I was, however, fortunate in receiving the support of the Water Resources Technical Organ, the main body involved in Sudan's transboundary negotiations, of the country's Ministry of Water Resources, Irrigation and Electricity. This, combined with support from other very generous Basin-based scholars and practitioners, enabled me to conduct most interviews I needed during my short trip to Khartoum.

Finally, there is no way to guarantee that I have all the 'facts' about perceived barriers to collective action. I have tried to write a balanced view of the two negotiation processes, but there are several reasons why my view may be incomplete or unintentionally biased. First, it is possible that the people whom I interviewed about the CFA negotiations gave a more optimistic view of the negotiations because (i) it was one of their major career achievements; (ii) most of the Basin countries would prefer to maintain the NBI, but this requires some international support, so it may be in their interest to highlight the benefits of the CFA/NBI tracks; and (iii) they may still be limited in the opinions and descriptions of the process that they can share. Second, I had greater access to Ethiopian and Sudanese negotiators, many of whom have been involved in parts of both negotiations and have longer-term views of how transboundary water cooperation has changed over time. For these reasons, I have tried to avoid making judgements about what a 'fair' outcome in either of these negotiations might be, focusing instead on the design of the negotiation processes and the perceived barriers (as described by the negotiators).

V. Dissertation Structure

The following chapters provide more of the Nile-specific context and reapply the theories introduced in this chapter to the Nile Basin Cooperative Framework Agreement and Grand Ethiopian Renaissance Dam negotiations. My overarching goal is to try to demystify the process of achieving collective action. I do this by delineating the procedural and non-procedural obstacles that often prevent countries from reaching agreement on collectively managing their shared water resources. My hope is that this type of analysis will reveal ways in which multi-track water diplomacy can improve water governance.

In Chapter 2, 'One River, Two Tributaries, and Three Countries', I introduce the Nile Basin - with a focus on Egypt, Ethiopia, and Sudan - and the two main legal instruments (i.e., the 1929 and 1959 Nile Agreements⁶⁴) used to govern use of the Nile waters. This chapter is critical to understanding the dispute over water use in the Nile Basin. Although there has been a history of regional cooperative efforts (i.e., TECCONILE, Undugu, and Hydromet) to manage water, the establishment of the Nile Basin Initiative (NBI) and drafting of the Cooperative Framework Agreement (CFA) are the first basin-wide cooperative initiatives.

I present my two case studies in Chapters 3 and 4. In Chapter 3, 'Pursuing Collective Action as a Basin', I describe the CFA negotiations and review ways in which barriers to collective action were reduced through procedural and institutional interventions. In Chapter 4, 'Pursuing Collective Action on the GERD', I point to a few process design decisions that helped reduce procedural obstacles to collective action, including joint fact-finding by the three Blue Nile countries, confidence-building, and benefit-sharing during the negotiations on the filling and operation Grand Ethiopian Renaissance Dam. I also examine how context-specific obstacles affect negotiations. In the case of the GERD, these barriers stem from two-level games, the increasing 'securitization' of water, and the rise of the media in shaping public perception and trust.

In Chapter 5, 'Demystifying Collective Action,' I return to the five prescriptive approaches to cooperation - institutionalist, idealist, realist, utilitarian, and proceduralist - and apply them to the two negotiations. In Part II, I review my major findings about ways of reducing barriers to collective action in the Nile. In Part III, I suggest a simple model that can be used to systematically analyze water interactions to identify potential intervention points by state- and non-state actors and provide few recommendations for enabling collective action in the Nile Basin.

⁶⁴ I also mention a third, the 1902 Nile Agreement between

I end with a short Coda summarizing the current status of the Blue Nile countries (as of July 2019) and the decisions they will need to make in the near future about the filling and operation of the GERD, planning for a multi-year drought, and future developments (e.g., Ethiopia's planned cascade of dams).

...

Although the focus of this dissertation is transboundary water governance, I hope that even those without an interest in water governance will find something useful and provoking in the pages that follow. At its core, the question being examined through this research is, 'how do we avoid Hardin's *tragedy of the commons*?'. Our choices are to put aside our (short-term) individual interests in recognition of the need to collectively work together towards a common interest; to align our individual interests with our common interest; or to give into our 'rational, self-interest' and adapt to the conditions we create.

Chapter Two. One River, Two Tributaries, Three Countries

Every dissertation addresses a puzzle⁶⁵. Mine begins with one river, two tributaries, and three countries – the Nile; the Blue and White Niles; and Ethiopia, Sudan, and Egypt. To assume that the puzzle of water governance in the Nile can be solved by just these three countries, however, would be a mistake. Indeed, it is this very tendency to exclude other countries that has made it so difficult to solve. There are two underlying questions to the Nile puzzle. First, how can Nile countries achieve collective action in management of the Nile waters? Second, at what scales (i.e., basin-wide or project-specific) should they pursue collective action?

Although technical solutions may help to reduce the gap between supply and demand of water, they will not ‘solve’ the Nile puzzle for two main reasons. First, as is the case in most transboundary water governance, political boundaries do not overlap with natural ones, making some ‘technical’ solutions politically infeasible. Eleven countries fall within the boundaries of the Nile Basin and overlap with the basin to varying degrees (Table 4).

Table 4. Areas of Country within the Nile Basin

Country	Estimated Total Area (x 1,000 km ²)	Area in the Nile Basin (% of total basin area)	Area in the Nile Basin (% of total country area)
Burundi	28	0.4	49
DRC	2,345	0.7	0.9
Egypt	997	9.5	30.3
Eritrea	122	0.8	21.1
Ethiopia	1,144	11.5	31.9
Kenya	593	1.6	8.7
Rwanda	26	0.7	84
South Sudan	644	19.5	97.7
Sudan	1,864	44.0	74.9
Tanzania	945	3.7	12.7
Uganda	241	7.6	99.5

Source: NBI, Nile Basin Water Resources Atlas, p.19.

For example, Burundi, DRC, Eritrea, and Rwanda, have less than a 1 percent overlap with the Nile River Basin (Table 4, Column 3). Although this overlap is relatively small, it still represents a sizeable portion of Burundi (49 percent), Eritrea (21 percent), and Rwanda (84 percent). Other countries – such as Sudan (44 percent), South Sudan (19.5 percent) and Ethiopia (11.5 percent) – have greater overlap with the boundaries of the river basin. Ideally, all eleven country governments will voluntarily agree on how to collectively manage the Nile River in a way that is in their common interest.

Second, the physical, socioeconomic, and historic context of the Nile make some ‘solutions’ impossible. The ‘status quo’ in the Nile has been ‘full utilization’ of the Nile River by the downstream countries (Egypt and Sudan) as dictated by three bilateral treaties. This has, over time, contributed to a sense of bitterness between these countries and their upstream (Burundi, DRC, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, Tanzania and Uganda) neighbors. The last of these agreements – the 1959 Nile Agreement – effectively turned the Nile puzzle into a zero-sum game: more water use by upstream countries means less water available to the downstream countries.

⁶⁵ My framing draws from the work of John Waterbury (2002), in which he frames the ‘master puzzle’ of the Nile as a collective action problem.

I begin this chapter with a description of the physical and socioeconomic contexts of the basin, delineating two narratives – ‘downstream’ and ‘upstream’ – that underlie the sense of ‘fairness’ about use of water in the Nile Basin⁶⁶. The second part describes the influence of the British in relation to three Nile agreements that have dictated water use in the basin over the past century. It also describes the historical reasons why the ‘status quo’ in Nile has favored downstream water use. The third part describes a series of cooperative efforts that took place after the Nile countries gained their independence. These led to a paradigm shift in the 1990s, with the adoption of ‘equitable and reasonable utilization’ as the overarching ideology. Together, these sections introduce the background that negotiators often refer to when making their positional arguments during negotiations and helps explain why cooperation on Nile waters has been, and continues to be, complicated.

I. Competing Perspectives: Interests Along the Nile

The Nile River stretches over 4,200 miles, making it the longest river of the world. It has two main tributaries – the White Nile and the Blue Nile. The White Nile starts from Lake Victoria, where it is fed by rivers starting in Rwanda and Burundi, and flows north through South Sudan until it meets the Blue Nile in Sudan. The Blue Nile⁶⁷, or Abbay, flows from Lake Tana in Ethiopia’s highlands, curves toward the center of Ethiopia before curving northwest into Sudan. The two tributaries meet in Khartoum, the capital of Sudan, and become the main Nile. From there, the Nile flows further north, where it is met by the Atbara River (which flows from the Ethiopian highlands) before flowing into Egypt⁶⁸. Just north of Cairo, the Nile splits into the Rosetta Branch and Damietta Branch, creating the Nile Delta, Egypt’s ‘breadbasket’. Both branches empty into the Mediterranean Sea. Approximately 85 percent⁶⁹ of the Nile (as measured at the Aswan High Dam in Egypt) flows from the Ethiopian highlands (through the Blue Nile and the Atbara River), while 15 percent flows from the White Nile (Blackmore and Whittington 2008; NBI 2012).

The flow of the Nile is characterized by high interannual and inter-seasonal variability. This has, over time, made many Nile countries immanently fearful of water scarcity, even when they are not facing drought conditions⁷⁰. For example, in 1916, the Nile flow was measured at 120 billion cubic meters (BCM), whereas in 1988, it fell to 39 BCM (Collins 1990). The ten-year drought (1978 to 1988) in the Nile Basin has burned itself into the collective memory of the region and world (Weinraub 1983). In Egypt’s case, Lake Nasser fell to its lowest level since the construction of the High Aswan Dam in 1971. This led to what Collins (2006, p. 121) describes as the ‘Egyptian water crisis of 1988’, in which the levels of the Lake Nasser were nearly too low for hydroelectric production. The impact on Ethiopia, which lacked major storage infrastructure, was far more devastating. An estimated 1 million Ethiopians died in part due to food shortages and hunger crisis from 1983 to 1985⁷¹. While nothing has reached that level of devastation since, drought and starvation remain a persistent threat in the Great Horn of Africa⁷². The puzzle of Nile water management is not just about optimization or environmental protection – it is also about survival.

⁶⁶ I frequently use ‘downstream countries’ to refer to Egypt and Sudan and ‘upstream countries’ to refer to the other Nile countries. This simplification ignores recent shifts within the Basin. Namely, Sudan’s emerging role as a ‘midstream country’ with its own interests and concerns. For more on Sudan’s emerging role, see (Cascão and Nicol 2016a, 2016b)

⁶⁷ The Grand Ethiopian Renaissance Dam (GERD) is being constructed on the Blue Nile.

⁶⁸ For a diagram of the inflows, evaporative losses, and total flow of the Nile system at different points in the basin, see Blackmore and Whittington’s scoping study (2008, Figure 8).

⁶⁹ Although construction and operation of the GERD will only affect the Blue Nile flow, it accounts for 56 percent of the water that reaches Egypt (FAO 2016). The Atbara river accounts for another 13 percent of the Nile flow.

⁷⁰ The drought conditions are partly caused by the El Niño warming effect over the Pacific Ocean. This effect has intensified, and will continue to intensify, due to climate change. Leading scientists to predict more variability in extreme weather conditions globally.

⁷¹ Starvation was due to the ‘perfect storm’ related to drought conditions, domestic conflict, and government negligence.

⁷² Horn of Africa typically refers to the peninsula in Northeast Africa. Countries include Djibouti, Eritrea, Ethiopia, and Somalia. For more on the persistent threat of drought in the Great Horn, see descriptions of droughts in 2016 and 2017 (Laing 2016; Karanja 2017).

Egypt and Sudan (the downstream countries) are the most dependent on the Nile and, historically, have been the most successful in developing hydraulic infrastructure necessary for utilizing the waters of the Nile River. The status quo in the Nile Basin for most of its history has been the ‘full utilization’ of the Nile by these two downstream countries (Part 2). As upstream countries became more politically and financially stable, and as their need for water grew, they demanded the right to develop along the Nile (Part 3). Therefore, the first part of the ‘Nile question’ can be summarized as, ‘how should Nile water be distributed?’

A second part of the ‘Nile question’ relates to the scale(s) of water management. One of the challenges of managing the water in the Nile Basin is that the two tributaries are connected, but have very different characteristics, in terms of their flow, variability, and sediment load. First, at the point where the two tributaries meet in Khartoum, the Blue Nile has twice the flow of the White Nile. This is because nearly half of the White Nile’s flow is lost to evaporation or transpiration as it passes through the Sudd wetlands⁷³ in South Sudan. The rest of the White Nile flow continues its way north to Khartoum, where it averages a long-term flow of 26 BCM. The long-term average flow of the Blue Nile is 50 BCM (NBI 2016, p. 151). Second, the two tributaries are also characterized by differences in flow variability. The White Nile has a steady flow throughout the year, whereas the Blue Nile is highly seasonal. Approximately 70 percent of its flow occurs within four months (July through September) each year (NBI 2016, p. 140). It is also characterized by high inter-annual variability. Although its long-term average (1915-2014) annual flow (as measured at Diem, Ethiopia) was 50 BCM, its lowest known low flow was 26 BCM (1978) and its highest known high flow was 65.9 BCM (1998) (NBI 2016, page 150). Egypt’s High Aswan Dam, which was built to store nearly twice the long-term average flow of the Nile, ensures that the Nile flow in Egypt is consistent throughout the year. Third, most of the sediment from the River Nile originates from the Ethiopian highlands, mainly because of the seasonal rainfall pattern, high altitude, and land management practices (NBI 2016, p. 163). This sediment has been critical to making downstream soil nutrient-rich, although very little of it makes it past the High Aswan Dam.

These differences lend themselves to thinking about the Basin as two major sub-systems – the Equatorial Nile subsystem around the White Nile, and the Eastern Nile sub-system around the Blue Nile. Hydraulic infrastructure along the White Nile has an impact downstream, but not to the extent of development along the Blue Nile (Blackmore and Whittington, 2008). Therefore, a second part to the puzzle is, at what scale(s) (i.e., basin-wide, sub-system, etc.) should Nile water be managed? One approach has been to pursue the question of distribution at the basin-wide level while pursuing the question of water management at the sub-system level (see Section 3.2).

This chapter will describe the current context, history, and cooperative efforts as they are related to the entire Basin, while also emphasizing the relationship among the Blue Nile countries (Egypt, Ethiopia, and Sudan). In the following sections, I describe two narratives - ‘downstream’ and ‘upstream’ – that prevail around water use in the Basin. Both are factually correct and legitimate, but emphasize different facts and two different kinds of inequality – water distribution and economic development.

1.1 The ‘Downstream’ Narrative: Unequal Distribution of Water Resources

The first narrative regarding the ‘Nile puzzle’ is from the perspective of the downstream countries. The unevenness in (i) the distribution of water throughout the Basin countries, (ii) the populations within each country, and (iii) the dependency on external renewable water resource (i.e., transboundary rivers or aquifers) puts an inordinate amount of pressure on the downstream countries (Egypt and Sudan) in terms of their water security.

⁷³The Sudd wetland is the second largest freshwater wetland in the world and critical to the region’s ecology.

A country's total renewable water resources (TRWR) is a function of its internal renewable water resources (IRWR), including surface water and groundwater recharge, and its external renewable water resources (ERWR), including any ground- or surface-water that flows from a neighboring country.

IRWR depends on how much precipitation, or rainfall, a country receives. The average annual rainfall in the Nile Basin is about 650 mm, but the distribution of rainfall throughout the Basin is highly uneven (NBI 2016, p. 101). Whereas Ethiopia and the countries of the Equatorial Lakes Plateau receive a great deal of rainfall, Egypt and Sudan receive little. In Ethiopia, the average annual rainfall is approximately 848 mm, whereas Egypt and Sudan only receive an annual average of 51 mm and 250 mm, respectively (FAO 2014). Rainfall within the basin is also highly seasonal. In Egypt, ninety percent of the country receives rain only once every two years (NBI 2016, p. 101). Ethiopians, on the other hand, suffer heavy downpours during the rainy season (May to October) that leads to soil erosion while facing extremely dry conditions the rest of the year.

Total renewable water resources also takes transboundary water resources into account. The dependency ratio of the Nile countries, or their dependency on transboundary water resources, is also highly uneven (Table 5⁷⁴). Transboundary water resources cover 97 percent of Egypt's renewable water needs and 96 percent of Sudan's renewable water needs (Table 5, Column 3 'Dependency Ratio'). Their dependency on transboundary water, most of which is from the Nile River, combined with their positions downstream, makes their water security dependent on upstream cooperation.

Table 5. Renewable Water Resources in Nile Basin Countries

Country	TRWR (10 ⁹ m ³ /year)	Dependency ratio (%)	Total population (2015, millions)	Total renewable water resources per capita (m ³ /inhab/year)
Burundi	13	20	11	1,122
DRC	1,283	30	77	16,605
Egypt	58	97	91	637
Eritrea	7	62	5	1,399
Ethiopia	122	0	99	1,227
Kenya	31	33	46	667
Rwanda	13	29	11.6	1,146
South Sudan	49	66	12	4,011
Sudan	38	96	40	940
Uganda	60	35	39	1,540
Tanzania	96	13	53	1,800
Total	1,771	-	487	-

Source: FAO. 2016. AQUASTAT Main Database.

The combination of internal and external renewable water resources gives a sense of how much water is available in each country. Within the basin, the total renewable water resources (TRWR) is approximately 1,770 billion cubic meters (BCM) per year (FAO 2016a), but the distribution varies significantly from country to country⁷⁵. At one extreme, the Democratic Republic of Congo (DRC) has 1,283 BCM/year of total renewable

⁷⁴ All figures in table, excluding total population, are from the most recent year available (2014).

⁷⁵ This is an overstatement of the amount of water available in the basin as some of the water is double-counted. TRWR in Sudan, Egypt, and South Sudan, for example, is also included in TRWR for Uganda and Ethiopia. It is also important

water resources while, at the other extreme, Eritrea has only 7 BCM/year of TRWR. It is important to recognize, however, that this range is partially a function of the size of each country⁷⁶. A more meaningful indicator of water availability and scarcity in each country is the total renewable water resources per capita (Column 5), which takes each country's population into account. Among the Nile Basin countries, DRC is the most water rich (with an annual TRWR of 16,605 cubic meters per inhabitant), whereas Egypt, Kenya and Sudan all fall under the threshold for 'water scarcity,' defined as 1,000 cubic meters per year per inhabitant⁷⁷. Increasing demand – due to socio-economic growth, increasing population, and urbanization (i.e., changes in consumption patterns) – decreases per capita water availability.

In summary, from the 'downstream' perspective, Egypt and Sudan are using a comparatively insignificant amount of water (74 BCM⁷⁸), or 5 percent, in relation to the total rainfall in the Basin. They do not have any options other than to rely on Nile water. Therefore, their 'right' to Nile water utilization is often framed as being necessary for basic survival.

1.2 The 'Upstream' Narrative: Unequal Distribution of Economic Development

The upstream countries' narrative also frames the Nile problem as one of unequal distribution – but it highlights the uneven levels of economic development. Of the eleven countries of the Nile Basin, only Egypt and Kenya are not listed among the least developed countries in the world⁷⁹ (UNDP 2018). In most Nile Basin countries, over forty percent of their population lives on less than \$1.25 per day (NBI 2016, p. 60). Like rainfall, the economic landscape is highly uneven throughout the Basin. At one extreme, Egypt has a poverty (\$1.25 a day) incidence of only 1.7 percent; while, at the other extreme, Burundi and DRC have poverty incidences of 81.3 percent and 87.7 percent, respectively (NBI 2016, p. 60).

Table 6: Income and poverty distribution among Nile Basin countries⁸⁰

Country	GNI per capita (constant 2010 US\$) in 2016	Poverty headcount ratio at \$1.90 a day (2011 PPP) (% of population)
Burundi	220	72 [2013]
DRC	400	77 [2012]
Egypt	2,730	1 [2015]
Eritrea	478 [2010]	-

to note that the 1,771 BCM of water available in the Nile River Basin is not from the Nile alone. For example, the TRWR of the DRC is from the Congo River.

⁷⁶ DRC has a total area of 234 million hectares; whereas Eritrea is only 11.7 million hectares. Source: FAO 2016 AQUASTAT database.

⁷⁷ Renewable water resources per capita is often used as an indicator for national water scarcity. The FAO defines 'water stress' to start when available water resources are below 1,700 m³/year per person; 'water scarcity' when resources are below 1,000 m³/year per person; and 'absolute water scarcity' when countries have less than 500 m³/year per person.

⁷⁸ The 74 BCM figure used here is based on the allocation for the 'full utilization' of the Nile under the 1959 Nile Agreement (55.5 BCM to Egypt and 18.5 BCM to Sudan). I use this number because it is used by Egyptians when making the point that what they are asking for is a paltry amount compared to all the water available in the Basin.

⁷⁹ Of 189 countries in the most recent UNDP Human Development Update (UNDP 2018), the Nile Basin countries ranked as following (from least to greatest development): South Sudan (187); Burundi (185); Eritrea (179); DRC (176); Ethiopia (173); Sudan (167); Uganda (162); Rwanda (158); Tanzania (154); Kenya (142); Egypt (115). Only Egypt and Kenya are now considered to be of 'medium human development'.

⁸⁰ Source: World Development Indicators (Updated 1/30/2019).

Ethiopia	340 [2010]	27 [2015]
Kenya	963	37 [2015]
Rwanda	560	56 [2013]
South Sudan	950	43 [2011]
Sudan	-	15 [2011]
Tanzania	859	49 [2011]
Rwanda	720	
Uganda	650	42 [2016]

The income disparity between the downstream countries (Egypt and Sudan) and most of the upstream countries reflects the downstream countries' substantial economic development. For example, Egypt's Gross National Income (GNI) per capita in 2012 was US \$3,140 – or approximately twelve times the GNI per capita in Burundi (Table 6). Relatedly, although the Human Development Index⁸¹ (HDI) has been an improving in all Nile Basin countries, most still lag far behind Egypt's HDI (NBI 2016, p. 59). The disparity remains stark even among the three countries of the Blue Nile. Egypt and Ethiopia have relatively comparable populations, at 91 and 99 million, respectively (Table 5). However, the GNI per capita in Egypt is US \$3,140, over 6.5 times greater than the GNI per capita in Ethiopia (US \$470).

In summary, there are two framings of the Nile 'puzzle' based on competing interests. Whereas the downstream countries emphasize the disparity in available water resources in the Basin, the upstream countries call attention to their desperate need for economic growth and poverty alleviation. The downstream claim to Nile water stems from the fear of a perceived existential threat (i.e., lack of water security), while the upstream claim to Nile water stems from the need to maintain and promote economic growth.

1.3 Harnessing Water for Economic Growth: Agriculture and Electricity

Water is inextricably linked to food and energy. Most Nile water (i.e., an estimated 82.2 BCM) is used for irrigation (NBI 2016). Agriculture is important throughout the Basin, not only in terms of food security, but for economic development. Although the value added by agriculture to overall GDP has decreased over time in most Nile Basin countries⁸², it still contributes to one third of the basin's GDP (NBI 2016, p. 170). Similarly, the share of employment in agriculture has decreased in most of the Nile Basin countries over time but remains significant; it provides employment for nearly three fourths of the total labor force (NBI 2016, p. 170).

A closer look at the role of agriculture in each country shows substantial unevenness in terms of agriculture as a sectoral user of water, value added to overall GDP, and employment (Table 7). Nearly 97 percent of the agricultural land under irrigation in the Basin falls within Egypt and Sudan alone⁸³. Within Egypt, 86 percent of its water is set aside for agricultural purposes. Arguably, Egypt could decrease its agricultural production to reduce its overall water demand because the contribution of 'water-related' developments to GDP has steadily been decreasing and is now only 11.5 percent. However, nearly one fourth of Egypt's working population is employed in agriculture, meaning that any national policies that reduce agricultural production must also take into account any potential socioeconomic impacts that may result from the policies.

⁸¹ HDI is a composite of access to education, healthcare and GDP.

⁸² The value added from agriculture, measured as a percent of GDP, has decreased in all the Nile Basin countries aside from Kenya (where it has slightly increased from 27.8 percent in 1980 to 34.6 percent in 2017) and Sudan (where it was 29.9 percent in 1980, increased to 40.7 percent in 2000, before decreasing again to 30.5 percent by 2017). Source: World Development Indicators.

⁸³ In contrast to Egypt and Sudan, which are dependent on irrigated agriculture, Ethiopia's agriculture is primarily rain-fed and dominated by subsistence farming.

Table 7. Agriculture as Source of Demand, Contribution to GDP and Overall Employment

Country	Annual freshwater withdrawals, agriculture (% of total freshwater withdrawal) ⁸⁴	Agriculture, value added (% of GDP) in 2018 ⁸⁵	Employment in Agriculture (% of total employment) in 2018 ⁸⁶
Burundi	77 [2000]	30.6 [2016]	91.5
DRC	12.3 [2005]	19.9	82.0
Egypt	86 [2010]	11.5	24.5
Eritrea	95 [2004]	14.1 [2009]	83.8
Ethiopia	92 ⁸⁷ [2016]	34	67.3
Kenya	59 [2010]	34.6	37.2
Rwanda	68 [2000]	31	65.7
South Sudan	36 [2011]	-	65.3
Sudan	96 [2011]	30.5	53.2
Tanzania	89 [2002]	30.1	66.0
Uganda	41 [2008]	24.6	68.4

Source: World Development Indicators and AQUASTAT.

Water is increasingly used for energy production in the Nile Basin. Access to energy and energy consumption vary considerably throughout the Basin. At one extreme, only 7.6 percent of the population in Burundi has access to electricity while, at the other, 100% of Egypt's population has access (Table 8). Similarly, the per capita energy consumption in the Nile Basin countries ranges from 39.9 kWh per capita in South Sudan to 1,658 kWh per capita in Egypt.

Table 8. Energy Consumption and Hydroelectric Production Share within Nile Basin Countries

Country	Access to Electricity (% of population) in 2016	Electric Power Consumption (kWh per capita) in 2014	Electricity production from hydroelectric source (% of total) in 2015
Burundi	7.6	-	-
DRC	17.1	108.6	99.7
Egypt	100	1,658	7.4
Eritrea	46.7	64.1 [2011]	0
Ethiopia	42.9	69.7	92.7
Kenya	56	166.7	39.2
Rwanda	29.4	-	-
South Sudan	8.9	39.9	0
Sudan	38.5	190.2	64.5
Tanzania	32.8	99.2	33.5
Uganda	26.7	-	-

Source: World Development Indicators. Last Updated 1/30/2019. Accessed 2/2019.

⁸⁴ Source: AQUASTAT. Indicator name: "Agricultural water withdrawal as % of total freshwater withdrawal."

⁸⁵ Source: WDI for 2018 unless otherwise indicated (Burundi and Eritrea). No information available in the case of South Sudan. Indicator name: "Agriculture, value added (% of GDP)."

⁸⁶ Source: WDI for 2018. Variable: "Employment in agriculture (% of total employment) (modeled ILO estimate)."

⁸⁷ Total water withdrawal in 2016 in Ethiopia was 10,548 million cubic meters per year. Of this amount, 9,000 million cubic meters per year went towards irrigation. It is important to remember that although this figure seems significant, Ethiopia only withdraws an average of 8 percent of its total renewable water resources per year (2013-2017) (FAO 2016a).

Overall, there is roughly 5,660 MW of installed hydropower capacity within the Nile Basin⁸⁸. Of this, 40 percent is generated in Egypt, 28 percent is generated in Sudan, and 18 percent is generated in Ethiopia. Interestingly, although 40 percent of installed capacity for hydropower is within Egypt, hydropower only contributes to 7.4 percent of the country's overall electricity production. The majority comes from natural gas (71 percent) and oil (21 percent) (World Development Indicators 2015). Meanwhile, in both Ethiopia and Burundi, over 90 percent of the electricity production is from hydropower.

Increasing demand for energy has led to an increase in water demand for hydroelectricity, especially in Ethiopia. Within the Basin, the Blue Nile has the largest hydropower potential because of its 1,360 meter altitude drop from Lake Tana into Sudan (NBI 2016, p. 176). The Grand Ethiopian Renaissance Dam (GERD) will have an installed capacity of 6,450 MW, doubling the installed capacity of the entire basin⁸⁹.

Both interests – ensuring the water security of the downstream countries and the economic development of the upstream countries – must be addressed and, because they are interconnected, they must be addressed collectively.

1.4 Added Pressure: Population Growth and Climate Change

Population growth and climate change will only add pressure on water resources in the Nile Basin. In 1960, the combined population of the Nile Basin countries was approximately 107 million; by 2010, this number quadrupled to 426 million (UN 2017). By 2050, the population of the Nile Basin countries is projected to hit 1 billion (UN 2017). Among the Nile Basin countries, Burundi, Uganda, Tanzania and DRC have the highest annual population growth rates (Figure 5), at 3.2 percent, 3.3 percent, 3.1 percent and 3.3 percent, respectively (WB 2017)⁹⁰.

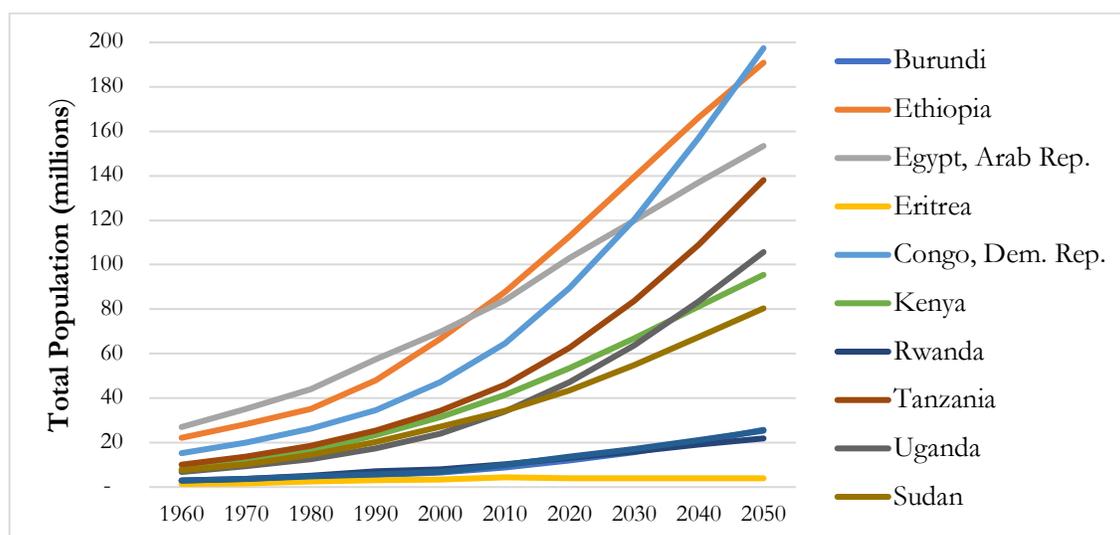
Despite the overall decrease in rate of population growth throughout the Basin, the growing population (in absolute terms) continues to put immense pressure on existing water supplies. Several Nile Basin countries (Egypt, Sudan, and Kenya) already fall under the 1,000 cubic meter per capita per year 'water scarcity' threshold, and their populations are continuing to grow (Figure 6).

⁸⁸ Most hydropower plants on the Nile are run of the river, meaning they do not significantly change or alter the course of the Nile, although some water can be 'lost' due to evaporation or seepage from the reservoirs.

⁸⁹ A distinction should be made, however, between installed capacity and actual energy generation. The installed capacity for the GERD is likely an overestimation of how much energy would actually be generated by the dam (Whittington, Waterbury, and Jeuland 2014)

⁹⁰ Egypt's population growth rate has held relatively steady between 1.8 – 2.2 percent over the past decade.

Figure 5. Nile Basin Country Population Estimates and Projections⁹¹



Source: United Nations Population Division. World Population Prospects: 2017 Revision.

Unrestricted population growth will plunge these, and other countries, further into a state of water scarcity and, potentially, into political instability. A rough calculation, using TRWR from 2016 and population projections for 2050, can be made of the projected total renewable freshwater resources per capita likely to be available in 2050 for the each of the Nile Basin countries (Table 9). According to these calculations, eight countries will be below the water scarcity threshold of 1,000 cubic meters per capita and, of these, four (Burundi, Egypt, Kenya, and Rwanda) will be below or near the absolute water scarcity threshold of 500 cubic meters per capita by 2050⁹². While these calculations are rough estimations (due to the unknown effect of climate change on distribution of rainfall in the Basin and the inexactness of population projections in general), they suggest that water scarcity will become a more pervasive threat in the Nile Basin.

Table 9. Projected Total Renewable Water Resources Per Capita in Nile Countries in 2050

Country	Total Renewable Freshwater Resources (Billion Cubic Meters)	Projected Population in 2050	Projected Total Renewable Freshwater Resources Per Capita in 2050
Burundi	13	25,762,000	505
DRC	1283	197,404,000	6,499
Egypt	58	153,433,000	378
Eritrea	7	4,390,840 [2010]	1,594
Ethiopia	122	190,870,000	639
Kenya	31	95,467,000	325
Rwanda	13	21,886,000	594
South Sudan	50	25,366,000	1,971
Sudan	38	80,386,000	473
Tanzania	60	138,082,000	435
Uganda	96	105,698,000	908

⁹¹ Population projections were not included for Eritrea for years 2020 – 2050. For the purposes of this figure, I maintained the population at 4 million.

⁹² The actual figure of TRWR per capita in 2050 could be lower than what is calculated here depending on the amount of double counting across the basin in terms of TRWR.

Source: TRWR figures (Column 1) are from 2016 (AQUASTAT). Projected Population in 2050 is from UN Population Projects (2017 Revision).

Climate change will add more pressure on the Nile Basin due to changing rainfall patterns, increased temperatures and sea level rise. First, some climate simulations suggest that although there may be a slight increase in precipitation in the basin, the interannual variability of total Nile flow could increase by as much as fifty percent in the twenty first century as compared to the twentieth century (Siam and Eltahir 2017). This suggests that the basin will experience more extreme weather events (i.e., more droughts and flooding). Second, climate change induced temperature rise will also lead to higher evaporation rates from reservoirs; increasing crop water requirements; reduced agricultural yields due to extreme temperatures; changing rainfall patterns; and sea level rise (Blackmore and Whittington 2008). Third, the threat of sea level rise is acute in the Nile Delta, the area responsible for 30 to 40 percent of Egypt's agricultural production on the Mediterranean coast. Most of the delta is only one meter above mean sea level, and is subject to land subsidence⁹³ (especially in the northern delta), making it vulnerable to sea level rise (Stanley and Clemente 2017). Saltwater intrusion is already a concern for Egyptian farmers, but will increase with sea level rise. Thus, climate change poses a threat to both water and food security.

Climate change will have different impacts on different parts of the Nile Basin. If the Basin is managed as a single hydrological unit, countries may be able to increase their collective resilience by trading across their differences (e.g., in supply and demand for water, agriculture, and energy) and coordinating the management of hydraulic infrastructure to temper any major fluctuations in weather patterns. This assumes, of course, that cooperation is desirable and politically feasible.

II. Status Quo: 'Full Utilization' by Downstream Countries

Downstream use of Nile water has been historically protected by three treaties – the 1902, 1929 and 1959 Nile Agreements⁹⁴. The first two were signed under British colonization, the third by sovereign states; all three are bilateral agreements. This section describes the influence of the British in developing and controlling the Nile flow in the Basin as well as the hydropolitical context that led to the signing of these agreements. The second half of this section describes the role of the United States, United Kingdom, World Bank, and Soviet Union in financing the High Aswan Dam (HAD) as an example of how the Nile has been affected by global geopolitics. The HAD is important to the Nile story in three ways: first, it significantly reduced Egypt's sensitivity to upstream variations in flow; second, it (along with the Roseires Dam in Sudan) was a major catalyst for reaching agreement on the 1959 Nile Agreement; third, it remains a sore spot for upstream countries (which point to Egypt's failure in notifying or consulting the upstream countries about its plans to construct the HAD) and for Sudan (which points to the relocation of the Nubian people⁹⁵).

2.1 Safeguarding British interest in Egyptian cotton: 1902 Nile Agreement

Historically, Egyptians have been the most successful at utilizing Nile water. In Pharaonic times, agricultural development in the Delta was driven by flood irrigation (Tvedt 2004, p. 20). Annual Nile floods filled Egyptian fields with water and rich silt from the Ethiopian highlands. This allowed farmers one cropping season per year, but meant that Egyptians were entirely at the mercy of the annual floods. In the early nineteenth century, under Muhammad Ali's rule, this system was replaced by perennial irrigation made possible by the creation of barrages, specifically the Delta Barrage in the case of the Nile Delta (Tvedt 2004, p. 20). This regularized the flow of water throughout the year, allowing farmers to grow one to two more crops each year.

⁹³ Stanley and Clemente (2017) attribute land subsidence in the Nile delta to three factors: 'neotectonic lowering, compaction of Holocene sequences, and diminished sediment replenishment by much reduced Nile flow to Egypt's coast.'

⁹⁴ There are other agreements in the Nile basin, but none as frequently cited as these three.

⁹⁵ Nubians, a distinct ethnolinguistic group in Africa and early inhabitants of the Nile valley, live in Sudan and southern Egypt. Approximately 50,000 Nubians in Eastern Sudan (in the region of Wadi Halfa) were displaced by the construction of the High Aswan Dam and forcibly resettled (Janmyr 2016).

In 1820, ‘cotton production and exports were negligible’ but, by 1860 and on, ‘cotton made up 80 percent of Egypt’s total exports’ (Tvedt 2004, p. 20).

Throughout most of the nineteenth century, European powers jockeyed for control over Africa. In 1882, Britain gained control of Egypt, becoming the country’s de facto protectorate and establishing Britain as the main colonial influence in the Nile Basin. At the time, the British desire for control of Egypt had less to do with the Nile and more to do with the Suez Canal⁹⁶ and the access it provided to the Indian Empire (Tvedt 2004). British interest in controlling Egypt soon expanded due to cotton production in the basin, which fueled the textile industry in England. As profits from Egyptian cotton grew, so did the need for greater control of the Nile – along both the White and Blue Niles.

The British expanded their reach on the Nile through several moves in the 1890s and early 1900s (Tvedt 2011). First, they occupied present day Uganda, the head of the White Nile, in 1894. Second, with the help of Egyptian forces, they reconquered⁹⁷ the Sudan and, in 1899, agreed to rule Sudan together through the Anglo-Egyptian Condominium⁹⁸. By 1899, Great Britain had control of the entire White Nile – either through colonization or agreements with other colonizing European countries. Ethiopia, along the Blue Nile, was the only country in the region to resist colonization. In 1902, Great Britain secured its use of the Nile through an agreement that would limit Ethiopia’s future use. Article III of the 1902 Nile Agreement⁹⁹ states that former Ethiopian Emperor Menelik II agreed that neither he, nor his government, would allow “any work across the Blue Nile, Lake Tana, or the Sobat which would arrest the flow of their waters except in agreement with His Britannic Majesty’s Government and the Government of Sudan.’ Although the legitimacy of the agreement is now broadly disputed¹⁰⁰, at the time, it ensured that Egyptian cotton production would not be threatened by future development along the Blue Nile.

Hydraulic development in the Nile Basin flourished under British rule through their control and careful planning. They were the first to think of the Nile Basin as a single hydrological unit. In 1891, the British repaired the barrage system in the Delta (Tvedt 2004, p. 23), doubling the production of cotton in the Delta. Within a few years, British water engineers had prepared a series of reports on increasing agricultural production potential through other hydraulic infrastructure. Chief among them was the Aswan Dam, now called the Aswan Low Dam. The Aswan Low Dam, constructed in Sudan, provided flood protection in Egypt and enabled more control of the Nile flow throughout the year. At the time of its construction, between 1899 and

⁹⁶ The Suez Canal was constructed between 1859 and 1869 and connects the Mediterranean Sea to the Red Sea. It was of great importance to Great Britain as it reduced the journey between the North Atlantic and northern Indian Oceans.

⁹⁷ After breaking off with the Ottoman Empire in 1914, Egypt started to expand its control south, into Sudan. Under the rule of former Egyptian leader Ali Pasha, Egypt gained control of Sudan in 1820. It lost its control in 1881, with the Mahdist revolt in Sudan. The River War, which took place from 1896-1899, replaced the Mahdist rule of Sudan with Anglo-Egyptian control in 1899. Tvedt (2002) argues that this was the first move by the British to gain control over the entire Basin, largely motivated by the desire to control the entire flow of the Nile.

⁹⁸ In 1899, the Anglo-Egyptian Agreement set the political boundary along the 22nd parallel north. In 1902, the British redrew an ‘administrative boundary’ which gave part of the land just north of the first line to Sudan. The land between these two boundaries, referred to as the Halayeb Triangle, has been a major source of contention between Egypt and Sudan since Sudan’s independence in 1956. Both countries claim sovereignty over the area and Egypt has maintained military occupation. This area is worth noting as it has been linked to Sudan’s loss of Egyptian support during the GERD negotiations, most recently in 2018.

⁹⁹ The full name of the 1902 Nile Agreement is the ‘Treaty between Ethiopia and the United Kingdom, relative to the frontiers between the Anglo-Egyptian Sudan, Ethiopia, and Eretria’.

¹⁰⁰ Ethiopia has long contested the 1902 Agreement due to two main differences in the Amharic and English versions. First, the Ethiopian version of the treaty states that Ethiopia will not ‘fully arrest the flow’ and, second, it states that prior agreement must be with the British government (without mention of Sudan) (Ferede and Abebe 2014). Furthermore, the agreement was not ratified by Ethiopia.

1902, it was the largest masonry dam in the world even though the original planned storage of the dam (2.5 BCM) had to be reduced by half, due partly to technical and political problems¹⁰¹ (Tvedt 2004, p. 25).

2.2 Shifting to Gezira in Sudan: 1929 Anglo-Egyptian Nile Agreement

The British became more interested in Sudan¹⁰² at the turn of the 20th century for two main reasons. First, the British realized that control over Sudan meant control over Egypt and, indirectly, control over the Suez Canal (Tvedt 2004, p. 197). This interest in Sudan intensified with recognition of the agricultural potential of Gezira, a small strip of land between the Blue and White Niles (Teclaff 1967, p. 161). The promise of higher cotton production again fueled Britain's desire to control and use Nile water, especially as an alternative to Egyptian produced cotton¹⁰³ (Tvedt 2011). Small-scale cotton production in Gezira began in 1904 and, by 1913, the British planned to irrigate 100,000 feddans¹⁰⁴ with water from the Blue Nile through a canal, which would be supplied by a barrage at Makwar. The plans for a diversion dam were replaced with plans for a storage dam at Sennar due to low flow of the Blue Nile in 1913-14 (Nile Water Commission, 1926)¹⁰⁵. The additional reservoir from the storage dam increased Gezira's irrigation potential to 300,000 feddans¹⁰⁶. Although construction of the dam started in 1914, work was suspended until after World War I.

Egyptian water security was initially ensured by British interests in Egyptian cotton production¹⁰⁷. This changed after World War I. Dissatisfaction with British occupation of Egypt and Sudan grew, partially in response to widespread frustration with Egypt's increasing role in the war. Egyptian nationalism increased and, after the war, Egyptians fought to regain control over their country. The Egyptian revolution of 1919 led to Great Britain's recognition of Egyptian independence in 1922. As Egyptian production of cotton became more uncertain, Great Britain refocused on the Gezira Scheme in Sudan.

Soon after Egyptian independence, the Government of Sudan signed a contract with a British contractor (Pearson & Sons Ltd.) to construct the Sennar Dam,¹⁰⁸ the irrigation canals, and other works for the Gezira Scheme¹⁰⁹ (Tvedt 2004, p. 109). Plans for Gezira increased tension between the British and Egyptian nationalists, who viewed this as a direct threat to their water supply. The tension reached a breaking point in 1924, when the Sudan Governor-General was assassinated in Cairo. In direct retaliation for the murder, the

¹⁰¹ Archaeologists in France and Britain demanded that the government lower the level of the Aswan Low Dam to protect the Pharaonic temples from inundation (Tvedt 2004, p. 25). The dam was heightened twice, once in 1912 and again in 1933.

¹⁰² British influence over the Nile did not stop there. In the early 20th century, Britain sent soldiers and explorers further south to start gathering data on the length of the Nile. According to Tvedt (2002, p. 65), '[e]verything was done with one aim in mind: how Nile measurements here could improve Nile control in Egypt.' For more on British plans to control the Nile, see reference to the 1904 report in Tvedt (2002).

¹⁰³ Egyptian cotton was fueling Lancashire, the site of England's cotton textile industry. As Egyptian nationalism grew, British concern also grew over the possibility that their access to cotton would be affected by political change. The Gezira scheme represented a safe alternative to cotton supply. Gezira eventually became the world's largest cotton farm.

¹⁰⁴ A 'feddan' is a unit of agricultural area, roughly equivalent to 1 acre.

¹⁰⁵ Included in the text of the 1929 Nile Agreement.

¹⁰⁶ In February 1920, the British Government promised the Egyptian Government that the Gezira Irrigation Scheme would not exceed 300,000 feddans without the consent of the Egyptians (Nile Basin Commission, 1925).

¹⁰⁷ Egypt had become one of the main producers of cotton; especially after cotton production in the United States fell dramatically after the Civil War. See Collins 1990; Waterbury 1997; Waterbury 2002.

¹⁰⁸ The Sennar Dam was completed and came into operation in July 1925.

¹⁰⁹ The Gezira Scheme became the largest cotton farm in the world. As its significance increased, so did the influence of the cotton industry in British foreign affairs. For example, Tvedt (2004, p. 107) describes how the British Lancashire cotton industries submitted several memoranda to the Foreign Office asking Egypt to prevent farmers from replacing one type of cotton plant (Sakellaridis) with a short-staple cotton plant (Pelion). As Egyptian nationalism grew, the certainty of access to Egyptian cotton fell and the cotton lobby in England became more vocal about the need for Great Britain to take control of Sudan. For more on the role of the British Cotton syndicate and Lancashire industries and their effect on British foreign policy, especially in relation to the Gezira Scheme and the Sennar Dam, see (Tvedt 2004, p. 107-9).

British, who had promised to cap water use for the Gezira Scheme at 300,000 feddans, threatened unrestricted water use (Teclaff 1967, p. 161; Tvedt 2004, p. 110). In protest to Great Britain's political flexing, former Egyptian Prime Minister Saad Zaghloul resigned and was replaced by Ahmad Ziwari Pasha. Pasha's government accepted all British demands and pulled all remnants of the Egyptian army out of Sudan, leaving Britain fully in control of Sudan.

Soon after his ascent to power, in late January 1925, Ziwari Pasha wrote a note to Lord Allenby, the British High Commissioner in Egypt, referencing Allenby's earlier ultimatum that the Gezira scheme be 'increased from 300,000 feddans to an unlimited extent.' Pasha noted that,

[n]ow that friendly relations have happily been re-established between our two countries, it is my duty to draw your Excellency's attention to the fact that the measure announced in your note of the 23rd November has raised the most serious apprehensions in this country... The Egyptian Government has always maintained that this development should in no case be of such a nature as to be harmful to the irrigation of Egypt or to prejudice future projects, so necessary to meet the needs of the rapidly increasing agricultural production of this country... I have, therefore, to request our Excellency be so good as to reconsider the question of the irrigation of the Gezira and to withdraw the instructions referred to in the above-mentioned note of the 23rd November, 1924...

[Exchanged Note from Ziwari Pasha to Lord Allenby, Cairo, January 26, 1925]

Allenby sent his response the same day. In it, he reassured Pasha that the British Government would rescind its earlier ultimatum with the understanding that an expert committee, the Nile Water Commission, would be established to study how irrigation in Sudan could be increased with minimal impact to Egypt.

In an effort to improve Great Britain's relationship with Egypt, and in the wake of water shortages in Egypt in 1928, the two powers negotiated terms of use of the Nile in the 1929 Anglo-Egyptian Agreement, hereafter 1929 Nile Agreement, through an exchange of notes¹¹⁰. The Notes were accompanied by the 1925 Nile Commission report¹¹¹, which estimated the total discharge of the Nile, as measured at Aswan, to be over 80 billion cubic meters (or BCM) per year. The total water available for use, however, was estimated to be 52 BCM per year due to the limited storage capacity of the existing infrastructure¹¹². Of this, Egypt was allotted 48 BCM, while Sudan received 4 BCM. The remaining 30 BCM 'represented the peak of the annual flood that could be neither stored nor used directly in agriculture' and was left to flush into the Mediterranean (Waterbury 2002, p. 73). Besides receiving the bulk of the share of Nile water, Egypt was also given veto power over all upstream development¹¹³. This last point – Egypt's veto power – became a major point of contention within the basin¹¹⁴.

2.3 Decline of British control of the Nile

¹¹⁰ Officially, the 'Exchange of Notes between His Majesty's Government in the United Kingdom and the Egyptian Government in Regard to the Use of Waters of the Nile River for Irrigation Purposes'. Full text of the Notes available on Oregon State University's Transboundary Freshwater Dispute Database.

¹¹¹ The Nile Water Commission produced a final report on March 21, 1926.

¹¹² The Aswan Low Dam and the Sennar Dam could only hold seasonal storage. As a result, most of the river water could not be put to use. It was estimated that only 52 BCM could be used at the time (Tesfaye Tafesse 2011, p. 75, footnote 59).

¹¹³ Paragraph 4(b) of the agreement states that 'Save with the previous agreement of the Egyptian Government, no irrigation or power works or measures are to be constructed or taken on the River Nile 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.'

¹¹⁴ Why would the British grant Egypt veto power? Tvedt (2017) suggests this was 'a diplomatic move by London to appease anti-British feelings in Egypt.'

Great Britain tried several times to reach an agreement with Ethiopia about constructing a reservoir at Lake Tana. A reservoir at Lake Tana, the source of the Blue Nile, would regularize the flow of water into Sudan, making it possible to extend the Gezira scheme without imposing any negative impact on Egypt. It would also provide the British greater diplomatic power over Egypt because it would give them more control of the Blue Nile (Tvedt 2017). During the 1920s and 1930s, Great Britain again negotiated unsuccessfully with former Ethiopian Emperor Haile Selassie, and then with Italian Prime Minister Mussolini, to win support for a reservoir at Lake Tana¹¹⁵. Tvedt (2004) suggests that part of Great Britain's great reluctance to condemn Italy's occupation of Ethiopia in 1935-6 in the League of Nations¹¹⁶ was because it hoped that Mussolini would allow British control of Lake Tana. Instead, much to Britain's chagrin, the Italians took control of the lake and drafted their own plans for a dam at Lake Tana. Italian control of the Blue Nile would pose a threat, not only to Egypt, but also to British interest in Gezira cotton. In 1941, under the leadership of Haile Selassie, British and Ethiopian troops drove the Italians out. It is still a huge source of pride among Ethiopians that the country was one of the few in Africa to resist colonization.

Despite this success, Great Britain's influence in the Nile Basin faltered after World War II for several reasons (Tvedt 2017). First, rising anticolonial sentiment weakened any remaining authority that Great Britain had in the Nile region¹¹⁷. Second, the United States emerged as a great world power and increased its involvement in the Middle East and Africa, establishing itself as an attractive alternative to former colonial powers. Third, the Nile Basin countries slowly won their independence, making Great Britain's earlier plans to manage the basin as a single hydrological unit more difficult.

By the end of World War II, Egypt's demand for water had increased beyond its 1929 allocation due to population growth and industrialization. In 1946, the Ministry of Public Works in Cairo published a seminal study of the Nile basin by Hurst, Black and Simaika called *'The Nile Basin, Volume VII, The future conservation of the Nile.'* This 1946 study¹¹⁸ recognized that Nile water could be optimized if the basin was managed as a single unit and proposed a Century Storage scheme. The scheme would entail constructing basin-wide hydraulic infrastructure in the Equatorial Lakes region and the Eastern Nile sub-basins to ensure an annual outflow at

¹¹⁵ See Tvedt (2002) for a more detailed discussion of Great Britain's pursuit of building a dam at Lake Tana and their concern about the United States' growing influence in the Nile region.

¹¹⁶ On October 3, 1935, Italian forces under Mussolini invaded Abyssinia (former Ethiopian Empire that included present day Eritrea and Ethiopia) from Eritrea. This was considered an act of aggression by the League of Nations and, by October 15, the League imposed sanctions on Italy. The sanctions were largely ineffective because the boycott excluded iron, steel, and oil and then were removed altogether within a year. Part of the League of Nation's failure to protect one of its own members (Abyssinia) is traced back to the lack of strong support by France and Britain, which both preferred to "have a finger in the 'Abyssinian pie' rather than to enrage Mussolini with sanctions" (Tvedt 2004, p. 172). Former Emperor Haile Selassie fled Ethiopia in May 1936, leaving Mussolini in control of the empire.

¹¹⁷ In a description from a World Bank Memorandum (dated June 16, 1950), the author described that the Egyptians were reticent to accept any additional involvement by the British with regards to their hydraulic development: "Incidentally, I am reliably informed that although a British group, which had already spent many years on the plans, submitted the lowest tender, it was disregarded – apparently, for no other reason that the Egyptian Government at that time wished to eliminate the British from its large public works contracts." This speaks not only to Egyptian sentiment towards British involvement in the Nile, but also the World Bank's recognition that relations between the two countries had soured. Source: Letter from Van H. Engert to W.A.B. Iliff at the IBRD. Found in the World Bank Archives; "Aswan Dam Hydroelectric Project – United Arab Republic Egypt – Correspondence – Volume I."

¹¹⁸ The 1946 study by Hurst, Black and Simaika is seen as a continuum of the work of Sir William Garstin, who published a basin-wide plan for the Nile in 1904, and that of Sir Murdoch MacDonald, who developed another plan in 1920 as the British Advisor to the Ministry of Public Works. MacDonald's plan, *Nile Control Works: Note on a series of control works to regulate the irrigation water supply of the Nile valley*, suggested that Egypt's increasing water needs could be met through upstream development. The plan emphasized the importance of the Gezira scheme by suggesting seasonal storage reservoirs at Sennar (on the Blue Nile); but suggested that Egypt would receive compensation for the water by suggesting projects on the Upper White Nile. These included the Gebel Aulia (on the White Nile), a channel through the Sudd swamps, and over-year storage at Lake Albert and Lake Tana (Said 1993, p. 72; Tvedt 2004, p. 91)

every reservoir equal to the average outflow over a century. It would, in theory, make the entire basin resilient to extreme weather events – drought and floods – by increasing storage capacity.

Many of the components were similar to those proposed in a 1920 Nile plan by Sir Murdoch MacDonald: a hydroelectric dam at Owen Falls to store water for irrigating Egypt and Sudan and generate power for Kenya, Tanzania and Uganda; continuation of the role of Jebel Aulia Dam¹¹⁹ in Sudan on the Sobat River; and the Jonglei Canal in southern Sudan to divert water away from the Sudd. In addition to these, the 1946 study recommended a dam at Lake Tana, in Ethiopia. According to the plan, although most of the projects would be outside of Egypt, all planning, implementation, and management was to take place within Egypt. Furthermore, each location was to be staffed with an Egyptian official to ensure compliance with Egyptian plans¹²⁰ (Elhance 1999, p. 70-1). Despite the comprehensiveness of the plan, the political situation made it unrealistic to pursue a basin-wide approach¹²¹.

Great Britain looked for opportunities to increase its legitimacy in the region by catalyzing economic development through dam construction. Gaining political support, even domestically, proved to be a challenge. In 1949, during a foreign policy speech at the Labour Party Conference, former British Foreign Minister Ernest Bevin made a case for the creation of a Nile Valley Board, similar to the Tennessee Valley Authority¹²², to oversee basin-wide planning. Campbell, the British Ambassador to Egypt, criticized the plan, arguing that the Nile countries ‘differ immensely... [a]ll these peoples, in varying degrees and ways, are so backward that, as it seems to me, the first and main object must be for each to get things done in its own area individually’¹²³. An alternative proposal was suggested in which an International Board, seated in Cairo, would oversee social and economic development in the Nile (Tvedt 2004, p. 221). This, again, was rejected; this time out of concern that Egypt would try to influence the organization and take control of the Nile.

Of the Century Storage projects, only the Owen Falls Dam and Jonglei Canal¹²⁴ projects were pursued at the time. In 1954, Great Britain constructed Owen Falls Dam¹²⁵, a hydroelectric dam on Lake Victoria in Uganda. Although Egypt helped finance the dam and reached a treaty with Uganda to ensure that the Nile flow would not be affected, the construction served as another reminder that Britain had control of Egypt’s lifeline (Tvedt 2017).

¹¹⁹ The Jebel Aulia Dam was constructed between 1933-1937. It is a hydroelectric dam near Khartoum, Sudan.

¹²⁰ This made both upstream countries and the British uncomfortable. As Tvedt (2002, p. 216) describes, ‘[a]lthough it made sense from a technical and financial point of view, it was described as politically undesirable to permit the Egyptian Government to have representatives under its direct control in a British protectorate where it had ‘from time to time made territorial claims (though admittedly far-fetched ones).’

¹²¹ Tvedt (2002, p. 193) states that the Hurst ‘projects brought out contradictions not only between the Egyptian Government and the colonial authorities in Uganda, Egypt and the Sudan, between the Northern Sudan and Southern Sudan and between Ethiopia and the rest, but also within the British Empire itself, where the Foreign Office and the Government in London found themselves in the position of arbiters.’

¹²² The Tennessee Valley Authority was a relatively successful experiment started in 1933 by the United States federal government to promote economic development in the Tennessee Valley by managing the river basin as a single unit. Although the model was never repeated in the U.S., this approach to basin-level planning was exported to other parts of the world.

¹²³ Quote from Tvedt 2004 (p. 221). Original source is Campbell to Foreign Office, 16 July 1949, FO 371/73619.

¹²⁴ The idea of draining the Sudd swamps was first introduced in Sir Garstin’s 1904 plan, but not seriously pursued until it was presented as part of the Century Storage Scheme. The Jonglei Canal, according to the 1964 Egyptian plan, would drain the Sudd swamps, produce hydroelectricity for both countries, control irrigation for farming in Sudan, and reduce the effect of floods in the Sudd wetlands (Elhance 1999). Construction of the dam did not begin until 1978 due to lack of support from both Egyptians (who were skeptical of depending on their southern neighbor) and the British (who felt Sudan’s interests would not be met). When construction finally began, it was met with fierce opposition from groups in the south due to the potential disastrous environmental impacts the project could have. The project was finally discontinued when, in 1983, civil war broke out in southern Sudan.

¹²⁵ Egypt contributed to the Owen Falls scheme under the condition that the dam would be jointly owned and operated by Egypt and Uganda.

2.4 Zero-Sum Game: 1959 Nile Agreement

“The Government of the Republic of the Sudan has at no time recognized the 1929 Agreement as binding upon her. It has been concluded by the Government of the United Kingdom and the then Government of Egypt as part of a general political settlement without regard to Sudan interests.”¹²⁶

In July 1952, Egypt’s monarch, King Farouk, was overthrown in a bloodless coup d’état led by the Free Officers Movement. Egypt’s British-friendly king was replaced by a group of nationalist Egyptian officers who wanted to see an end to British occupation in both Egypt and Sudan. With a new government in place, Gamal Abdel Nasser, who led the coup d’état, ‘needed a spectacular demonstration of the resurgence of revolutionary Egyptian nationalism under their leadership’ (Collins 2002, p. 163). Very soon after, Nasser came across Adrian Daninos, an engineer who had developed plans for a future century storage dam that could also produce electricity at Sudd al-Ali. Once complete, this dam (now known as the High Aswan Dam) would store two years of Nile flood, reducing floods and drought, and generate much needed power. It would also reduce Egypt’s vulnerability to upstream development. Furthermore, because it would be constructed within Egypt’s borders, it would not necessarily require approval from upstream riparians¹²⁷.

Nasser’s government made the decision to build the dam in September 1952 but quickly realized that negotiations with Sudan were unavoidable. First, plans to construct the High Aswan Dam raised questions about how the Nile waters should be apportioned. Many Sudanese were unhappy with the comparatively meager share of water that their country received in the 1929 Nile Agreement and demanded a renegotiation¹²⁸. Second, the reservoir that would be created behind the dam would flood Nubian land, increasing the need for an agreement.

Sudan also wanted a dam, but at Roseires, on the Blue Nile near the border with Ethiopia. Egypt was concerned that the upstream dam might affect its share of the water. Egypt and Sudan had negotiated on the Roseires dam in September 1953, but were unable to reach agreement. The Aswan High Dam now became an extra bargaining chip and increased Egypt’s interest in reaching an agreement on the two dams as well as the apportionment of water. Egypt’s interest in settling the matter of Nile water apportionment may have partially been motivated by the need for external funding for the dam¹²⁹.

¹²⁶ Source: Letter from the Ministry of Foreign Affairs of the Republic of the Sudan to the Embassy of United Arab Republic. Aug. 19, 1958. Aswan Dam Hydroelectric Project – United Arab Republic Egypt – Correspondence – Volume 3(2), Folder ID [1578423], World Bank Group Archives, Washington, D.C., United States.

¹²⁷ Egypt’s certainty that the High Aswan Dam would not require negotiations is reflected in the following text from a letter addressed to the World Bank President, “As to the question of international agreements with countries which take part in the Upper Nile Projects, approaches have already been made in this connection. Agreement has already been reached, both as regards costs and our rights to water, on the Victoria Reservoir. **No agreement of the kind is needed for the High Aswan Reservoir which will be constructed in Egyptian territory and at the expense of the Egyptian Government alone.**” [Emphasis added] Source: Letter from Egyptian Minister of Finance and Economy Abdel Galeel El-Emary to World Bank President Eugene Black in January 1952, [Aswan Dam Hydroelectric Project – United Arab Republic Egypt – Correspondence – Volume 1], Folder ID [1578420], World Bank Group Archives, Washington, D.C., United States.

¹²⁸ In 1950, Egyptians led another effort to renegotiate Nile water use. Collins (2002, p. 165) describes that these negotiations “... included Sudanese proposals for the release of more water for the Gezira from the Sennar Dam, a new dam at the fourth cataract, and a greater allocation of Nile water than allowed in the 1929 Agreement. These ‘technical discussions’ disguised the essential question – the respective shares of water for Egypt and Sudan. The talks were unfriendly and unproductive, and they terminated early in 1951. The representatives promptly retired to their ministries in Cairo and Khartoum to plan projects to meet their own needs for Nile water.”

¹²⁹ The World Bank, United States, and United Kingdom, made Egypt an offer in 1955 to fund the High Aswan Dam even though discussions between Egypt and the World Bank on funding the dam started in 1953. One of the reasons for the delayed offer was that all three were hesitant to support Egypt’s pursuit of the dam without first reaching an agreement

Sudan and Egypt restarted negotiations in September 1954 – this time, on both dams. According to Collins (2002, p. 167), the negotiations were ‘characterized by the erosion of trust among the professional engineers thanks to the acrimonious exchanges of political leaders, who conducted a vitriolic campaign to discredit the other side’s technicians.’ This point is worth noting – the Nile has historically been (and continues to be) heavily politicized, although the tone among leaders has improved in recent years.

There were three main issues central to these negotiations. First, fair distribution of Nile water between Sudan and Egypt. Second, Egypt’s compensation to any Nubians that were to be relocated. Third, Sudan’s interest in building infrastructure to make use of its full allocation of the Nile waters.

Negotiations continued on the Nile for four years. Ultimately, the impasse was overcome as a result of political change. Sudan became an independent country in January 1956. However, it was not until November 1958, when General Ibrahim Abboud led a military coup and took control of the government, that Sudan’s government shifted towards Egypt¹³⁰. The two countries negotiated again, this time with an Egypt-friendly Sudanese government, and reached the 1959 Agreement on the ‘Full Utilization of the Nile Waters’¹³¹ on November 8, 1959.

Due to planned infrastructure (i.e., the High Aswan Dam in Egypt and the Roseires Dam in Sudan), the amount of water available for utilization increased to 84 BCM under the 1959 Nile Agreement. Based on population increases, changes in agricultural production, and projected use by the two countries, of the 84 billion cubic meters, Egypt was allotted 55.5 billion cubic meters per year, while Sudan received 18.5 billion cubic meters per year¹³². The remaining 10 BCM was considered ‘lost’ due to evaporation and seepage at Lake Nasser, the reservoir upstream of the High Aswan Dam.

The agreement included several other important components. First, it gave Egypt the right to build the High Aswan Dam and Sudan the right to build Roseires on the Blue Nile, along with any other hydraulic works it needed to utilize its full share. Second, Egypt agreed to pay Sudan 15 million Egyptian Pounds as compensation for any damage from constructing the Sudd al Aali Reservoir and Sudan agreed to relocate the affected Nubian population. Third, the two countries agreed to share the cost of future works to reduce evaporation in southern Sudan and increase the flow of the White Nile. Fourth, they established a Permanent Joint Technical Commission (PJTC) to oversee future hydraulic works. Fifth, it included a provision that recognized that upstream countries might also want to use Nile water in the future. More specifically, Article 5.2¹³³ stated that,

with Sudan: “Mr. [Eugene] Black then said that he wanted to come to the biggest “if” which was the Sudan problem. Until question of the division of water was settled with the Sudan, the Bank could not sign a loan agreement. The U.S. and the U.K. Governments were ready to help Egypt to reach an agreement with the Sudan. How they would do it Mr. Black didn’t know... An international institution, the Bank could not make a loan for a project which would result in the flooding of a foreign territory. Dr. Kaissouni [Egyptian Foreign Minister] said that the Sudanese had never raised the question of flooding their territory. The only thing they had raised was the division of water.” Source: Files of Joseph Rucinski. “Egypt-Minutes of the meeting with the Finance Minister.” Nov. 26, 1955. Aswan Dam Hydroelectric Project – United Arab Republic Egypt – Correspondence – Volume 3(1), Folder ID [1578420], World Bank Group Archives, Washington, D.C., United States

¹³⁰ According to Collins (2002, p. 173), by March 1959, Abboud had very little choice but to approach Nasser because Sudan needed additional water for the Managil extension of the Gezira scheme.

¹³¹ Officially, the United Arab Republic and Sudan Agreement for the Full Utilization of the Nile Waters.

¹³² Waterbury (1997) argues that the 1959 Nile Agreement indicates recognition by Egypt of the need of a more equitable distribution of water with Sudan as, of the 32 BCM made available for utilization, Sudan received an additional 14.5 BCM, while Egypt received a mere 3.5 BCM increase. He suggests, however, that this is a ‘fairly charitable interpretation of Egyptian concessions’ (p. 291).

¹³³ Full text of the 1959 Nile Agreement is available online:

https://www.internationalwaterlaw.org/documents/regionaldocs/uar_sudan.html

[a]s 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. **The Technical Commission** mentioned in this agreement shall make the necessary arrangements with the states concerned, in order to **ensure that their water consumption shall not exceed the amounts agreed upon**. [Emphasis in bold added]

In short, the two countries recognized that upstream countries might want to use the Nile in the future but bilaterally agreed that they would be the ones to decide whether other states would receive a share of the water and, if so, how much. They also made themselves the enforcers of Nile water use. This may have seemed sensible at the time, given both countries' dependence on the Nile but it generated outrage by the upstream countries since they were excluded from these negotiations.

The 1959 Agreement set the status quo for water use in the Nile Basin and effectively turned it into a zero sum game, in that any extraction of Nile water by upstream countries would be considered a 'loss' to the water supply of the downstream countries. By reserving their right to 'full utilization,' the downstream countries were foreclosing future use of the Nile by the upstream countries (Sadoff and Grey 2002).

Ethiopia has always denied the legitimacy of both the 1929 and 1959 Nile Agreements, since it was not included in either discussion¹³⁴. Other upstream countries claim that the 1929 Nile Agreement no longer applies to them under the Nyerere Doctrine¹³⁵ because they are now independent states. Despite these objections, the status quo (under the 1959 Agreement) has been maintained by three things (Waterbury 2002): political unrest in the upstream countries, Cold War rivalries, and differences in economic strength. First, the upstream countries suffered from long bouts of political unrest, which kept them from adequately focusing on developing their water infrastructure. Second, Cold War rivalries determined Western support of specific Basin countries, ultimately favoring Egypt and Sudan (Arsano & Tamrat, 2005; Waterbury & Whittington, 1998; Waterbury 2002). The United States, for example, recognized Egypt as an important ally in the Israeli-Arab peace process, ensuring regional stability, and as a barrier to the spread of Islamic fundamentalism (Waterbury 1997). As such, Egypt has historically been among the top recipients of U.S. foreign aid¹³⁶. This has also affected the distribution of funding from multilateral donors such as the World Bank and the International Monetary Fund (Waterbury 2002; Zeitoun and Warner 2006). Finally, the disparity in the economic strength of the upstream and downstream countries prevented the upstream countries from investing in large-scale hydraulic infrastructure. They opted, instead, to invest in micro-dams, which were low-cost (and therefore did not require external funding) and could be easily constructed with local labor (Waterbury and Whittington 1998). The downstream countries, on the other hand, were financially able to construct large dams (e.g. High Aswan Dam in Egypt), which helped solidify the 'status quo' as a fact on the ground.

2.5 Geopolitical Tension: High Aswan Dam as a Bargaining Chip

¹³⁴ Ethiopia requested to be a part of the negotiations in 1957 for the 1959 Nile Agreement, but this request was rejected by Egypt and Sudan. After the 1959 Nile Agreement was signed, Ethiopia filed its rejection of the law with the United Nations and Organization of African Unity (email correspondence with Fekahmed Negash on July 1, 2019).

¹³⁵ The Nyerere Doctrine of state succession is named after Julius Nyerere, former President of Tanzania (president from 1964 – 1985). In the 1960s, when Tanzania tried to develop the Kagera basin water resources, they were confronted with the 1929 Nile Agreement, which stated that upstream countries did not have a right to develop the Nile water resources without approval from Egypt. Drafted in 1962, the Nyerere Doctrine calls for provisional application of bilateral treaties for a two year period from the date of independence so that newly independent states have an opportunity to decide whether or not to be bound by, or renegotiate, treaties formerly negotiated on their 'behalf' by colonial powers.

¹³⁶ In FY 2012, Egypt received a total of \$1.4 billion, making it the fourth largest recipient of U.S. foreign aid after Afghanistan, Israel, and Iraq. Most of this was toward Security Assistance, as opposed to Development Aid. See website on US foreign aid distribution (<http://us-foreign-aid.insidegov.com>).

“Your Chief may be known as a banker but in my humble opinion he has achieved one of the greatest strokes of diplomacy in getting Egypt to accept the development and financing by the West of the huge Nile power and irrigation project. I know nothing about international politics but it seems to me the Mid-East situation might have been quite sticky if the Russians had got a foothold in Egypt.”¹³⁷

Although British colonization ended in the 1950s, the influence of the West – and the motivations of the countries of the West – continued to have an impact on the region. In January 1953, Daninos, the engineer who designed the Aswan Dam, visited the World Bank. A World Bank official wrote in a memo¹³⁸ that,

Daninos... [f]irst met Mr. Black, then came to my office. Daninos is a man with a mission. Whether a crackpot, I do not know, but investigation would tell whether his scheme had merit, irrespective of his personal idiosyncrasies. **Scheme concerns a dam near Aswan... Daninos did not come in to ask for a loan. He wanted to explain to the Bank how the matter of the Nile development should be approached...** [i]f the approach to the Egyptian Government is through a U.S. firm, the U.S. Government or representatives of any single nation, the project is doomed to failure. **Egyptians are suspicious of attempts at penetration economically or otherwise...** If the old Egyptian Government were still in power, Daninos would, for the above reason feel that it would be pretty much a waste of time to try to see a project through. However, **the young military officers who are around Naguib have a fresh point of view, a fresh morality, want to get things done, and if they can stay in power long enough, will get them done.** Daninos does not give them more than a year or two in which to get underway with some constructive scheme like this. **If something is not done soon, anarchy will ensue.** [emphasis added in bold]

Daninos visited the World Bank in anticipation of former World Bank President Eugene Black's¹³⁹ trip to the Middle East. He came with advice for Black about how to deal with Egypt and with a request that the World Bank communicate with technical firms on Egypt's behalf to find a suitable firm to conduct the necessary studies.

Nasser's government had something to prove. The dam was more than infrastructure – it was a symbol of Egypt's resurgence and independence (particularly, from the West). Although Nasser needed external support for the construction of the dam, it was important that outside help be neutral, or free from hidden political agendas. The World Bank was arguably neutral.

The dam was of great economic and political significance to outside forces. It was estimated to cost between US\$200 million to US\$450 million and presented an entry point into influencing Egyptian, and potentially Middle Eastern, politics (Tvedt 2004, p. 268). In early 1955, negotiations began between Egypt and a Consortium of British, English, and French companies for the contract for the High Aswan Dam. The Consortium was problematic for Great Britain which, on one hand, wanted to be able to influence Egyptian politics while, on the other hand, did not want to alienate Sudan by supporting the project before a new legal

¹³⁷ Letter to William Bennet from the Office of Public Relations for the International Bank for Reconstruction and Development (World Bank) on Feb. 13, 1956. Reflects the perceived importance of former World Bank President Eugene Black's work in helping put together a counter-proposal to Soviet funding of the High Aswan Dam. Source: Letter from Matheson to Bennet. Feb. 13, 1956, Aswan Dam Hydroelectric Project – United Arab Republic Egypt – Correspondence – Volume 3(2), Folder ID [1578423], World Bank Group Archives, Washington, D.C., United States.

¹³⁸ Source: Hector Prud'homme, memorandum, “Nile Project – visit of Mr. Daninos,” 27 Jan 1953, Aswan Dam Hydroelectric Project – United Arab Republic Egypt – Correspondence – Volume 1, Folder ID 1578420, World Bank Group Archives, Washington, D.C., United States.

¹³⁹ Around the same time, Black was also helping India and Pakistan negotiate the Indus Water Treaty, which was signed in 1960.

agreement had been reached on the Nile (Tvedt 2004, p. 269). Over the next few months, the British Government realized the project was not financially feasible without the support of the World Bank. It distanced itself from the Consortium and reached out to Eugene Black. By August 1955, the Egyptians were presented with two proposals – the first by the Consortium and the second by the World Bank. Soon after, the Soviet Union also offered to provide financial backing for the construction of the dam. Eventually, in an effort to prevent Soviet influence in the region¹⁴⁰, the United States, Great Britain, and the World Bank presented Egypt a joint offer on December 14, 1955 (Tvedt 2004, p.276).

Their motivations for offering the joint proposal were slightly different¹⁴¹. The U.S. and U.K. seemed primarily motivated by the desire to present Egypt with an attractive counter-offer to the Soviet Union's offer as the East and West jockeyed for power during the Cold War. The World Bank, on the other hand, shared this interest but seemed genuinely interested in financing the dam. After all, World Bank engagements with Egypt started in 1953, long before the Soviets made an offer or the US and UK decided to act in concert in the region.

In March 1956, several months after presenting the joint offer to Egypt, the World Bank received a letter from the Sudanese Ministry of External Affairs¹⁴²:

The Sudan Government have learned with surprise that the Governments of the United Kingdom and the United States and the World Bank contemplate lending money to Egypt to enable that country to build a High Dam which would flood an important part of the territory of the Sudan. It appears that the project has been discussed in some detail, although the Sudan has not been invited to take part.

The new Sudanese government also started to more publicly describe its disapproval of the proposal to fund the High Aswan Dam (Tvedt 2004, 291). Although the World Bank and the two governments had been pushing Egypt to reach a resolution with Sudan on the flooding of Nubian lands and allocation of Nile waters, Sudan's formal expression of betrayal put all three in an awkward position. The UK quickly responded that it would not act against Sudan's interests and signaled to Sudan that it should not feel bound by the 1929 Nile Agreement and should, instead, push for a greater allocation (Tvedt 2004, p. 291). Within a month, Black also responded to the letter, emphasizing the World Bank's commitment to ensuring Sudan's interests were met.¹⁴³

¹⁴⁰ Several documents in the World Bank archives, particularly in September 1955, point to the need for the three bodies (United States, Great Britain, and the World Bank) to offer Egypt a financial package to keep it from turning to the Soviet Union for financing. For example, in an Office Memorandum entitled 'Decisions on the High Dam,' a World Bank employee wrote, "It is evident that sometime during the next week it will be necessary to make some decision on the financing of the High Dam going beyond the expression of interest contained in our memorandum to the Egyptian government of last August... The Egyptian government evidently feels the political necessity of making an early public announcement that it is proceeding with the construction of the Dam and that financing for the whole project has been assured. The reported announcement of a January 1 "deadline" by Nasser may or may not be true, but there is little doubt in my mind that the Egyptians feel there must be some sort of deadline. While they will be reluctant to invite the Russians in, they may well do so if financing from the West remains "pie in the sky".' The memorandum also noted the three (UK, US, and WB) parties' hesitation to support the dam until the question of how the Nile Waters should be distributed was sorted out by Egypt and Sudan. Source: J.C. de Wilde, memorandum, "Decisions on the High Nile," Nov. 25, 1955, Aswan Dam Hydroelectric Project – United Arab Republic Egypt – Correspondence – Volume 1, Folder ID 1578420, World Bank Group Archives, Washington, D.C., United States.

¹⁴¹ These differences in motivation become more clear in the descriptions of the World Bank's meetings with the Egyptian Finance Minister. See, for instance: Files of Joseph Rucinski. "Egypt- Minutes of the meeting with the Finance Minister." Nov. 26, 1955. Aswan Dam Hydroelectric Project – United Arab Republic Egypt – Correspondence – Volume 3(1), Folder ID [1578420, World Bank Group Archives, Washington, D.C., United States

¹⁴² Source: Letter from Sudanese Republic Ministry of External Affairs. Mar 17. 1956. Aswan Dam Hydroelectric Project – United Arab Republic Egypt – Correspondence – Volume 3(2), Folder ID [1578423], World Bank Group Archives, Washington, D.C., United States.

¹⁴³ "I write to acknowledge your letter of 17th March... the Bank is aware of the Sudan's interest in the effects of the Sadd el-Aali project on the Sudan; that the Bank is also aware that discussions between the Sudan and Egypt have not yet

Meanwhile, Nasser emphasized his commitment to reaching an agreement with his southern neighbors and re-engaged in negotiations on the Nile water. Although negotiations seemed to be going well, to Egypt's surprise, the United States reneged on its earlier offer of support on July 19, 1956. The U.S.'s public justification for withdrawing the offer was that Egypt had not reached agreement with the other Nile riparians¹⁴⁴. Tvedt (2004, p. 279) suggests that the British and Americans may have been trying to simply stave off Russian influence in the region and weaken Nasser's political clout without any real intention of funding the High Aswan Dam. Without the additional financial support of the US and the UK, the World Bank was unable to offer Egypt support for the construction of the dam. In a memo to the World Bank's Executive Directors dated July 24, 1956, Black wrote, '[a]s the Executive Directors are aware, the offer made by the Governments of the United States and the United Kingdom... has been withdrawn. In consequence of this change in circumstances, the basis on which I had contemplated Bank participation in the project no longer exists.'¹⁴⁵

In retaliation, Nasser nationalized the Suez Canal a week later, on July 26. Britain considered cutting the flow of the Nile River by seven eighths at the Owen Falls Dam to force Nasser to give up his control of the Suez Canal¹⁴⁶. Although the plan was never carried out, it speaks to the British mindset in using the Nile as a potential chokehold against Egypt and to Egypt's innate fear of losing access to the Nile.

On December 27, 1958, Egypt and the U.S.S.R. signed an agreement that the Soviets would help provide funding for the High Aswan Dam. Construction of the dam began two years later. On January 10, 1960, at the dam's inauguration speech, Nasser made his feelings about the West and their involvement in the Nile public¹⁴⁷:

We saw how imperialists tried to sow dissension between Egypt and Sudan and create fictitious differences between them... Imperialist and foreign newspapers declared that no agreement would be reached between Egypt and the Sudan. But when the UAR¹⁴⁸ and Sudanese

resulted in agreement between the two countries; and that you can be assured that the Bank, in its consideration of the Sadd el-Aali project, has taken, and will continue to take, due account of the interests of the Sudan. With kind regards, Yours sincerely, Eugene R. Black". Source: Letter from Eugene Black to Sudanese Minister of Foreign Affairs M. Zarroug, April 12, 1956. Aswan Dam Hydroelectric Project – United Arab Republic Egypt – Correspondence – Volume 3(1), Folder ID [1578420], World Bank Group Archives, Washington, D.C., United States

¹⁴⁴ The United States' official stance was that, '[t]he December offer contemplated an extension by the United States and United Kingdom of grant aid... with the understanding that the accomplishment of the project as a whole would require a satisfactory resolution of the question of Nile water rights. Another important consideration bearing upon the feasibility of the undertaking and thus the practicality of American aid was Egyptian readiness and ability to concentrate its economic resources upon this vast construction program. Developments within the succeeding seven months have not been favorable to the success of the project, and the United States Government has concluded that it is not feasible in present circumstances to participate in the project. Agreement by the riparian states has not been achieved, and the ability of Egypt to devote adequate resources to assure the project's success has become more uncertain than at the time the offer was made.' Source: Department of State For the Press. No 401. "Aswan High Dam." July 19, 1956. Aswan Dam Hydroelectric Project – United Arab Republic Egypt – Correspondence – Volume 3(2), Folder ID [1578420], World Bank Group Archives, Washington, D.C., United States

¹⁴⁵ Source: Memo entitled "Egypt" sent to the Executive Directors from Eugene Black. July 24, 1956. Aswan Dam Hydroelectric Project – United Arab Republic Egypt – Correspondence – Volume 3(2), Folder ID [1578423], World Bank Group Archives, Washington, D.C., United States

¹⁴⁶ The plan was never actualized, as it would take 16 months for there to be noticeable effects on Egypt and, in the meantime, would have negative consequences on Kenya and Uganda (Jerusalem Post 2006).

¹⁴⁷ "President's Speech at Inauguration of Aswan Power Station". MENA News Bulletin. Jan. 10, 1960. Aswan Dam Hydroelectric Project – United Arab Republic Egypt – Correspondence – Volume 3(2), Folder ID [1578423], World Bank Group Archives, Washington, D.C., United States.

¹⁴⁸ The United Arab Republic, or UAR, was established in 1958 as a political union between Egypt and Syria. Initially, it was meant to be the start of a pan-Arab movement in the Middle East under Egyptian President Nasser. In 1961, after a coup d'état, Syria declared its independence. Egypt continued to be known as the UAR until 1971.

delegations met they were able to settle all differences in a single day because the strength of brotherhood and Arabism is greater than the force of imperialists and their tricks. Thus, Brethren, we have been able to give the world a great example. We proved to the world that no power on earth can divide the sons of the nation and that no power on earth can divide the Arab peoples. We have also proved that no difference on earth is impossible to solve by Arabs among themselves... In accomplishing our task, we feel that we are ready to cooperate with all countries for construction. We seek unconditional cooperation based on the maintenance of our sovereignty, independence and dignity, cooperation based on the fact that we are aware of our dignity and our freedom because we have extricated them with blood.

In the end, the High Aswan Dam came to represent Nasser's Egypt – one that was not under the control of the West and was unified with its Arab neighbors. The West's interference in the Nile issue, particularly that of the UK, was unwelcome, as it was perceived to be a ploy to maintain control in the region.

The alliances of the different Nile Basin countries with the West changed during the Cold War (Arsano and Tamrat, 2005; Waterbury and Whittington, 1998). Nasser's Egypt was closely aligned with the USSR; this changed under President Anwar El Sadat, who then re-aligned Egypt with the West. Ethiopia was considered a close ally of the West under Emperor Haile Selassie I, but aligned with the USSR under President Mengistu Haile Mariam (Arsano and Tamrat 2005. p. 25). Finally, Sudan's former President Jaffar El Nimeiri initially started as an ally of the USSR, but changed his allegiance to the Western powers near the end of his rule.

As was seen in the case of the High Aswan Dam, global geopolitics has had, and continues to have, an impact on Nile hydraulic development. This is important in two regards – first, it speaks to the strategic geopolitical importance of the Nile to the broader international community. Second, it helps explain the suspicion that Nile actors have towards Western 'support' for Nile development.

III. Shift to 'Equitable and Reasonable Utilization'

This section focuses on the pattern of Nile cooperation that emerged starting in the 1960s, when the Nile countries became independent states. These cooperative efforts were often Egyptian-led, limited in geographic scope and technical in nature. In the 1990s, there was a clear shift in the Nile Basin to the principle of 'equitable and reasonable' use of the Nile waters that was, at least partially, motivated by the establishment of the 1997 United Nations Framework on Transboundary Water for Non-Navigational Uses¹⁴⁹ and the increased practice of Integrated Water Resources Management (IWRM) in the early 1990s.

The second half of this section describes the two-track approach adopted by the Nile Basin countries to develop their water resources. The first track focused on the need for a new basin-wide legal framework for 'equitable and reasonable utilization', known as the Cooperative Framework Agreement (CFA). The basin-wide negotiations on the CFA will be described in greater detail in Chapter 3. The second track required the establishment the Nile Basin Initiative, a temporary institution created to enable on-the-ground confidence-building and basin-wide development.

3.1 Emerging Pattern of Cooperation: Hydromet, Undugu, and TECCONILE

The remaining Nile countries gained their independence in the early 1960s: Democratic Republic of Congo in 1960; Tanganyika (now Tanzania) in 1961; Uganda, Burundi, and Rwanda in 1962; and Kenya in 1964¹⁵⁰. Basin-wide planning could no longer be implemented through the British and now depended on individual countries to reach agreements on cooperation. Multilateral cooperative efforts to collectively manage

¹⁴⁹ The 1997 UN Watercourses Convention was the first global agreement on the use of transboundary waters. Although it was signed in 1997, it did not come into force until 2014. See Section 3.2.1.

¹⁵⁰ Eritrea won its independence from Ethiopia in 1991.

the Nile River started in the late 1960s and extended into the 1990s. These efforts included Hydromet (1967 - 1992), Undugu (1983-1993), and TECCONILE (1992-1998).

Following major flooding in the early 1960s, and a study by the World Meteorological Organization (WMO) and the United Nations Development Program (UNDP) in 1963, five Nile countries asked WMO and UNDP to support the establishment of Hydromet to collect and analyze data on the Equatorial Lakes (Metawie 2004). Hydromet (1967 – 1992) was a multilateral cooperative effort in the Nile Basin which formally started with the Hydrometeorological Survey of the Catchments of Lakes Victoria, Kyoga, and Albert (Mobutu Sese Seku) in 1967¹⁵¹. The purpose was to establish a hydrometeorological network for data collection and to develop a water balance model of the system of lakes and their catchment areas (draft NRBAP 1994). Egypt and Sudan were invited due to speculation at the time that the flooding at Lake Victoria might be due to the Sudd wetlands or by the High Aswan Dam, which was to be completed around the same time. Ethiopia and DRC joined in 1971 and 1977, respectively, solely as observers because Hydromet's focus was geographically specific and did not include the East Nile (Arsano and Tamrat 2005).

In the early 1980s, following the Great Drought in the African Horn, Egypt convinced Sudan, Uganda, Zaire¹⁵² and the Central African Republic to create UNDUGU¹⁵³ (1983 - 1993), an informal forum where the Nile Basin water ministers could meet annually to discuss issues related to development along the Nile and promotion of economic, social, cultural and technical cooperation (Bruneel and Toope 2002; Mekonnen, 2010). Ethiopia, Kenya, and Tanzania agreed to participate, but only as observers (Arsano & Tamrat, 2005; Paisley and Henshaw, 2013). High level political actors, including Ministers of Foreign Affairs, came together almost annually to discuss ways of increasing cooperation. According to Collins (2006, p. 118), the member countries did very little but talk about drought, although 'there was a growing familiarity among the regulars to their meetings that they had some common interests in the Nile waters.' In December 1992, during the 67th meeting of UNDUGU, the Egyptians convinced five other water ministers (Sudan, Rwanda, Tanzania, Uganda, and Zaire) to establish a new scientific organization to consider more technical matters than the ministers themselves, who were more concerned with political affairs, were less knowledgeable about (Collins 2006). This led to the establishment of TECCONILE guided by a Nile Basin Council of Ministers (Nile-COM) of water resources (ECA 1999).

TECCONILE (1993 – 1998), or the Technical Cooperation Committee for the Promotion of the Development and Environmental Protection of the Nile Basin, was established as an interim organization to cover a transitional period between the termination of the Hydromet project and the start of a new basin-wide organization (draft NRBAP 1994). TECCONILE was supported by the Canadian International Development Agency (CIDA), the United Nations Development Program (UNDP), the Food and Agricultural Organization (FAO) and the World Bank. TECCONILE's short term objectives were to assist each country in developing a national water master plan and integrating all of them into a Nile Basin Development Action Plan. Ethiopia and Kenya refused to join because the organization still did not address the question of Nile water apportionment (Bruneel and Toope 2002). They, along with Burundi and Eritrea, joined TECCONILE as observers, but not as signatories. TECCONILE started its activities in 1993, supported by the Canadian International Development Agency (CIDA). An informal forum, the Nile 2002 Conferences (1993 – 2002)¹⁵⁴, was also established by CIDA in parallel to TECCONILE in 1993. These annual conferences became a forum for members of academia and the scientific community to share their papers related to the Nile Basin. One of the priorities of TECCONILE, discussed at greater length at the first and second Nile 2002 Conferences, was the preparation of an Action Plan through the support of CIDA.

¹⁵¹ In August 1967, Kenya, Tanganyika, Uganda, Sudan and Egypt signed the 'Agreement for the Hydrometeorological Survey of Lakes Victoria, Kyoga and Albert.'

¹⁵² Now the Democratic Republic of Congo (DRC).

¹⁵³ Undugu comes from the Swahili word 'ndugu', which means 'brotherhood'.

¹⁵⁴ One of the benefits of the informal structure of the Nile 2002 Conferences was that participants attended without having any particular status. Starting from 2003, the 2002 Nile Conferences continued on as the Nile Basin Development Forum (NBDF). To date, there have been five NBDFs (2005, 2008, 2011, 2014, and 2017).

In 1994, at the second Nile 2002 Conference, Egyptian engineers presented the Nile River Basin Action Plan (NRBAP) (Collins 2006, p. 118). The NRBAP included five components: (i) integrated water resources planning and management; (ii) capacity building; (iii) training; (iv) regional cooperation; and (v) environmental protection and enhancement. These were pursued through 22 projects, estimated at US\$100 million, to support regional cooperation in water management (draft NRBAP, 1994). Interestingly, the NRBAP did not include construction or management of water resources projects, but did emphasize that '[a] strong effort should be put forth by the riparian countries to develop a framework for international cooperation and for the equitable use and allocation of Nile waters' (draft NRBAP, Conclusion 4). Collins (2006) suggests that 'the construction of structures... for the conservation and management of the Nile waters would have reopened the contentious issue of Nile Control and who owned the Nile, those with historic or equitable rights' (Collins 2006). By avoiding discussions about Nile water allocation, the countries could continue to focus on building a shared understanding of what was in their collective interest. The Action Plan was unanimously approved in 1995 by the respective Nile Basin ministers of water and then by the Council of Ministers at the Third Nile 2002 Conference (Collins 2006).

Three general lessons can be drawn by the pattern of regional cooperation in the Basin. First, achieving effective regional cooperation takes time and multiple iterations. As seen in the case of the three organizations (Hydromet, UNDUGU and TECCONILE), regional cooperation started out very technically and geographically focused (i.e., the work of Hydromet leading to computer simulations) and eventually led to more general cooperation (i.e., project planning through TECCONILE). Second, cooperation has been impeded by deep-seated suspicion and mistrust in the Basin. Upstream countries often accuse Egypt of meddling in their affairs to promote political instability in an effort to ensure de facto recognition of the status quo. They hint at Egypt's involvement in the Sudanese coup d'état that brought in the Egypt-friendly administration that agreed to the 1959 Nile Agreement (Waterbury 1997) and Egypt's support for the Eritrean Liberation Front (Kimenyi and Mbaku 2015). Repeated interactions, at the very least, helped build a sense of a common interest for the Nile Basin countries. Third, 'cooperation' can mean many things. For many years, the question of 'who gets what, and why' was never even raised or challenged in the Basin. Undugu and TECCONILE, which were started under Egyptian leadership, had geographically specific and technical agendas.

These early cooperative efforts provided little incentive for many other Basin countries to participate as full members (Arsano and Tamrat, 2005). For decades, Ethiopia only participated in these efforts as an observer. As will be seen in the case of Project D-3 within the NRBAP, Ethiopia became a full participant as soon as there was an opportunity to rewrite the 'rules of the game' and pursue 'equitable' utilization.

3.2 Paradigm Shift: "Parallel, but Separate," Tracks

The Nile River Basin Action Plan (NRBAP) emphasized the need for a cooperative framework that was acceptable to all the Nile countries in order to achieve regional cooperation¹⁵⁵. More specifically, the Action Plan included project number D-3, the Nile Basin Cooperative Framework. The Cooperative Framework Agreement (CFA) was envisioned as the first basin-wide agreement on the 'equitable and legitimate right of water use in each riparian country' (draft NRBAP 1994). The concept of equitable entitlement was included 'as an issue of priority rather than as a long term objective' at Ethiopia's insistence (Waterbury, 2002 p.29; Mekonnen, 2010). D-3 symbolized a break in the pattern of bilateral agreements that enabled piecemeal

¹⁵⁵ 'To ensure sustainable cooperation, a cooperative framework has to be developed that is acceptable to all basin countries... It is advisable, in the long term, to have an international agreement on water management. An agreement would ensure all countries that development of waters in any particular country would not result in a conflict over water management with other Nile Basin countries... In some specific cases, it may not be necessary for all ten Nilotic countries to reach agreement on projects within a sub-basin. In such cases, a sub-basin agreement may be appropriate with only those countries affected, including relevant downstream countries' (draft NRBAP 1994).

development and a decisive shift toward a new legal regime that was fully inclusive of all Nile Basin countries¹⁵⁶. It was the only one of the 22 total projects to be endorsed by all the participants at the time (Chazournes and Wijkman, 2001; POE 2000).

Three years later, in 1997, the projects of the Nile River Basin Action Plan were reviewed by the International Advisory Group for the Nile Basin, a group of international experts on river basins from around the world, and converted into ‘Shared Vision’ to be implemented by the Nile Basin Initiative (Collins, 2006, p. 120). The Nile Basin Initiative, or NBI, was established as a transitional inter-governmental regional institution that would promote sustainable economic development in the basin through the equitable utilization of Nile waters.

These two tracks – the legal track of the CFA and the technical track of the NBI – were established as two parallel, but separate, tracks to help facilitate basin-wide cooperation in the Nile. This was by design. Nile-COM would oversee both tracks, but the idea was to keep the political and technical tracks separate to ensure that development would occur regardless of the political (D-3) negotiations. Project D-3 was financially supported by the UNDP, while NBI was financially supported by a consortium of donors overseen by the World Bank.

3.2.1 Legal Framework for Cooperation: The Cooperative Framework Agreement (CFA)

Although cooperative efforts to collectively manage the Nile water resources started in the late 1960s, the drafting of the Nile Basin Cooperative Framework Agreement in the late 1990s represented the first basin-wide¹⁵⁷ and inclusive effort to create a legal framework that would guide all hydraulic development in the Basin. The participation and support of multilateral donor agencies – especially the World Bank, United Nations Development Program (UNDP), and CIDA – also signaled genuine interest in inclusive cooperation in the Basin (Arsano and Tamrat, 2005, p. 20).

The Nile-COM approved Terms of Reference for a Panel of Experts (PoE), whose members were appointed by each of the Nile countries, to help write the initial text of the Cooperative Framework Agreement. The PoE met nine times from January 1997 until March 2000. Informal discourse among the POE members was also encouraged by the UNDP and World Bank through funding their participation in the Nile 2002 series of conferences between 1997-1999 and through three basin study tours (of the Mekong, Gambia, and Senegal River Commissions). Presumably because the donors believed that regular, informal dialogue among the experts would help promote mutual understanding and build trust.

The text of the CFA was largely informed by the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses, hereafter the 1997 UN Watercourses Convention or 1997 UNWC. The UNWC took 27 years of negotiation and represented the first global agreement on the use of transboundary waters. When it was finally signed, on May 21 1997, 103 countries signed in favor of the law, 27 countries abstained, and three countries¹⁵⁸ voted against it. The Convention did not come into force until 17 years later, on August 17, 2014, as it required ratification by 36 countries¹⁵⁹. Interestingly, although the Basin countries

¹⁵⁶ D-3 recognized that ‘sustainable cooperative activities in the Nile Basin can best be fostered and maintained when all the riparian states have reached comparable levels of technical and institutional capacity’ (draft NRBAP 1994, p. D-6). This is worth noting because ‘differences in technical, legal, and negotiating capacity’ came up frequently as one of the main challenges in the early CFA negotiations.

¹⁵⁷ Eritrea is the only Nile country the chose to participate as an observer, presumably because Nile water resources account for so little of its water.

¹⁵⁸ Burundi, Turkey and China all voted against the 1997 UNWC.

¹⁵⁹ Salman (2007) suggests that the UNWC took 17 years until it entered into force due to (i) lack of consensus about what is to be understood by the principles and concepts (e.g. ‘equitable and reasonable use’ versus ‘significant harm’), (ii) obligation of prior notification is insufficiently specified, (iii) Convention does not acknowledge existing regional or bilateral treaties; and (iv) the dispute-settlement mechanisms described in the Convention are too weak.

used the 1997 UNWC as the basis of the text of the CFA, they did not all vote for the 1997 UNWC. Burundi was one of three countries to vote against the 1997 UNWC; only Kenya and Sudan voted in favor of the law; Ethiopia, Egypt, Tanzania and Rwanda all abstained from voting; and Uganda, DRC and Eritrea did not participate in the vote (Salman 2014)¹⁶⁰.

The 1997 UNWC should be seen as a product of law shaped over time¹⁶¹. One of its most defining characteristics is the mention of ‘equitable and reasonable utilization’, but this concept was developed much earlier. In 1966, the International Law Association (ILA) drafted the ‘Helsinki Rules on the Uses of the Waters of International Rivers’ as an international guideline on how transboundary waters (rivers and groundwater) could be used. The Helsinki Rules included the concept of ‘reasonable and equitable share in the beneficial uses of the waters of an international drainage basin’ (ILA 1966). Although it was adopted by the ILA, there was no formal enforcement mechanism. In 1970, the United Nations General Assembly (UNGA¹⁶²) requested that the International Law Commission (ILC) prepare guidelines for water use based on the Helsinki Rules. Over the next 24 years, the ILC drafted the articles of the UNWC. It included the ILA’s earlier terminology of equitable utilization, with the caveat that it could be pursued as long as it does not cause appreciable harm to downstream countries. These two concepts – ‘equitable utilization’ and ‘obligation not to cause significant harm’ – are inherently contradictory. However, based on the International Court of Justice’s ruling in the Gabcikovo-Nagymaros Project case between Hungary and Slovakia¹⁶³, the ‘obligation not to cause significant harm’ is often interpreted by legal scholars as being subordinate to ‘equitable utilization’ (Salman 2014).

Although the 1997 UNWC took 24 years to draft and negotiate, and another 17 years to come into force, it played a significant role in influencing the development of new water agreements throughout the world, including in the Nile Basin¹⁶⁴. The entire text of the 1997 UNWC was not adopted in the case of the Nile, but many of the principles are similar or the same (further discussion in Chapter 3). With the help of Stephen McCaffrey, an international legal scholar and the former special rapporteur for the work of the ILC on the 1997 UNWC from 1985-91, the Nile Basin PoE drafted the text of the Cooperative Framework Agreement from 1997-2000. This early work was largely supported by the United Nations Development Program (UNDP) and, to a lesser extent, by the World Bank (WB).

When, in 2000, the PoE released its draft text of a ‘Cooperative Framework’, the draft still included several issues that remained unresolved (discussed in Chapter 3). Despite the fact that the Nile country experts did not reach consensus, the three year drafting process of the CFA was found to have ‘heightened trust among riparians and their recognition that co-operation around the Nile is both possible and would bring benefits to them all’ and helped the POE members ‘get to know one another, to establish a dialogue and to work together on an issue which is now perceived by all as an “issue of common interest”’ (de Chazournes and Wijkman 2001). In short, the process of trying to reach an equitable agreement through dialogue helped build trust an

¹⁶⁰ Given that the Nile Basin Cooperative Framework Agreement is closely based on the UNWC, it may seem strange that the upper riparians would sign and ratify one (CFA) and not the other (UNWC). Salman (2014) suggests that this is because ‘the six upper riparians that signed the CFA do not want to be parties to a Convention that includes clear and detailed obligations for the notification of other riparians of planned measures and projects... [t]hey are concerned that such notification obligations would be construed by Egypt and Sudan as recognition of the 1902 and 1929 treaties that give Egypt and Sudan veto power over upstream activities... Egypt and Sudan, on the other hand, might have reservations onto the UNWC when the obligation not to cause significant harm is considered subordinate to equitable utilization.

¹⁶¹ For a more comprehensive description of international water principles and laws that emerged in the 19th century, see Salman (2007). These include the Harmon Doctrine of ‘absolute territorial sovereignty’, ‘absolute territorial integrity’, and ‘limited territorial sovereignty’. For more discussion of the 1997 UNWC, see McCaffrey 2004.

¹⁶² The UNGA is the main forum for multilateral negotiations and policymaking in the United Nations. It includes all 192 member states.

¹⁶³ See ICJ (International Court of Justice) (1997) Gabcikovo-Nagymaros case, General List No. 92, 25 September, para 150, p.69.

¹⁶⁴ The Convention’s draft articles helped inform the Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin, the 2000 SADC Revised Protocol, and the Senegal River Water Charter (McCaffrey 2008).

understanding among the Nile Basin countries. This track was then paired with more tangible on-the-ground cooperation through the work of the Nile Basin Initiative.

3.2.2 On-the-Ground Development: Nile Basin Initiative (NBI)

“Before the Nile Basin Initiative, no one would talk in meetings because of the suspicion. But now we can disagree without becoming enemies. We can move forward because we recognize that we are different, with different interests, so we need to try to harmonize them.”¹⁶⁵

In February 1999, the Nile Council of Water Ministers¹⁶⁶ (Nile-COM) established the Nile Basin Initiative (NBI) as a transitional organization to succeed TECCONILE. NBI will be replaced by a permanent Nile River Basin Commission once the Cooperative Framework Agreement comes into force (i.e., when it is signed and ratified by six Nile Basin countries). The overarching mission statement, or Shared Vision, of NBI is ‘to achieve sustainable socioeconomic development through the equitable utilization of, and benefit from, the common Nile Basin water resources.’

Nile-COM launched a Strategic Action Plan with five objectives: (i) To develop the water resources of the Nile Basin in a sustainable and equitable way to ensure prosperity, security and peace for all its peoples; (ii) To ensure efficient water management and the optimal use of resources; (iii) To ensure cooperation and joint action between the riparian countries, seeking win-win gains; (iv) To target poverty eradication and promote economic integration; (v) To ensure that the program results in a move from planning to action. These objectives were to be operationalized through two parallel programs, the Shared Vision Program and the Subsidiary Action Programs.

The Shared Vision Program, a US\$100 million grant-funded¹⁶⁷ program that ran from 2003-2012, comprised eight basin-wide projects that aimed to build ‘trust, confidence and capacity among member countries as well as creating an enabling environment for transboundary investments.’ The eight projects were the Applied Training Project (related to institutional and human capacity development in IWRM); Confidence Building and Stakeholder Involvement; Efficient Water Use for Agricultural Production; Nile Transboundary Environmental Action Project; Regional Power Trade Project; Socioeconomic Development and Benefit Sharing; Water Resource Planning and Management; and Shared Vision Program Coordination (World Bank 2015).

The Subsidiary Action Programs were aimed at concrete 'on the ground' investments related to agriculture, environmental risks, energy and river basin management. The projects were broken down into two

¹⁶⁵ Quote from Dr. Callist Tindimugaya, Uganda’s Commissioner for Water Resources and Nile Technical Advisory Committee (Nile-TAC) member (World Bank 2015).

¹⁶⁶ The governing structure of the NBI is made up of three main bodies. Nile-COM is the policy and decision making organ of the NBI. The Secretariat (Nile-SEC), based in Entebbe, Uganda, is responsible for building capacity and cooperation among the Nile states. The Nile-TAC, or Technical Advisory Committee, is made up of two senior water officials per state and helps provide technical advice to Nile-COM.

¹⁶⁷ The World Bank was asked by Nile-COM to coordinate financial support for NBI. In 2001, the World Bank convened the first International Consortium for Cooperation on the Nile (ICCON1), a ‘donor consultation’ meeting. The consortium of 10 donors established the Nile Basin Trust Fund (NBTF) in 2003. The ten donors include DFID, SIDA, EU, EU, CIDA, DANIDA, Norway, Netherlands, France, Finland and the World Bank. Many other development partners (including UNDP, ADB, JIZ, GEF) also supported NBI centers directly through coordination with the NBTF (World Bank 2015, p. 28). \$179.7 million was administered by the World Bank through the NBTF to NBI’s activities (NBI 2015). It was originally due to end in 2012, but was extended until December 31, 2014 (NBI 2019 – A Long River). It accounted for 25% of total funding to NBI (NBI 2018 – Corporate Annual Report). Other funders included GIZ, ADB, CIWA and several bilateral partners (SIDA, Norway, GEF, EU, and ADF). The World Bank continues to support the NBI through \$8.5 million through the Cooperation in International Waters in Africa (CIWA) trust fund – this grant will end in November 2020. For more information on current funding, see NBI’s 2018 Annual Corporate Report.

sub-groups organized around the Nile Basin's two distinct sub-regions. The first, the Eastern Nile Subsidiary Action Program (ENSAP), includes all projects¹⁶⁸ related to the countries in the Eastern Nile sub-basin (Egypt, Ethiopia, Sudan, and South Sudan¹⁶⁹). It is overseen by the Eastern Nile Technical Regional Office (ENTRO), which was opened in Addis Ababa, Ethiopia in 2002. The second program, the Nile Equatorial Lakes Subsidiary Action Program (NELSAP) oversees all projects¹⁷⁰ related to the White Nile countries (Burundi, DRC, Kenya, Rwanda, Tanzania, Uganda, Sudan, and Egypt). It is overseen by the NELSAP Coordination Unit (NELSAP-CU), based in Kigali, Rwanda.

Since NBI was established, it has created three Strategic Action Programs. Implementation of the first Strategic Action Program, which comprised of the SVP and SAPs, started in 2003. NBI changed significantly during implementation of the second Strategic Action Program (2013-2017). Most significantly, NBI shifted from a project-based approach to a programmatic approach. Similarly, ENTRO's work shifted closer to 'knowledge generation, capacity development, and analytic work for infrastructure management...' (NBI 2019, p. 34). Furthermore, all three NBI centers – Nile-SEC, ENTRO, and NELSAP – have drafted 10 year strategies (2017-2027), which are now being implemented. The most recent of these, the Nile Basin Strategy 2017-2027 outlines six focus areas: (i) water security, (ii) energy security, (iii) food security, (iv) environmental sustainability, (v) climate change adaptation, and (vi) transboundary water governance.

NBI has transformed the basin over the past 20 years. At the start of the 21st century, most Nile countries had very little technical capacity. Egypt and Sudan had the strongest technical capacities and knowledge of Nile flows (Waterbury 2002, p. 71-2). Through the work of the NBI, the technical capacities of all the countries has improved (NBI 2015). Second, the paucity of data about the basin has been addressed through the establishment of the Nile Decision Support System (Nile DSS), a software tool used by the member states to share information and jointly plan hydraulic work along the Nile River. Third, joint studies and planning by the Nile Basin countries helped establish trust and mutual understanding and helped make the benefits of cooperation more tangible. In most of my interviews with participants from the region, the establishment and work of NBI has been described as a major achievement and benefit to the Basin¹⁷¹.

3.2.3 Pursuing cooperation along two tracks: CFA and NBI

This two-track approach to water diplomacy in the Nile Basin – the development of the CFA (a legal framework) in parallel with the trust-building efforts through the work of the NBI (a transitional basin-wide institution) – is the most important enabling factor for engaging all the Basin countries to cooperate for over a decade. First, NBI helped develop the technical capacity of the upstream countries, 'leveling the playing field' in the Basin – both in terms of water management and in the CFA negotiations. Second, project-based collaboration built trust and cooperation among the Basin countries' publics and their Water Ministers¹⁷². Third, 'on the ground' development provided additional incentive for the countries to remain engaged throughout the CFA negotiations process.

¹⁶⁸ ENTRO projects have included projects related to improving irrigation and draining in the three countries (Egypt, Ethiopia, and Sudan); Ethiopia-Sudan Power interconnection; Flood Preparedness and Early Warning and Watershed Management; Regional Studies and Scoping Studies.

¹⁶⁹ ENTRO was established by Egypt, Ethiopia and Sudan in 2002. Egypt and Sudan froze their participation in NBI in 2010. In 2012, Sudan rejoined and South Sudan joined NBI.

¹⁷⁰ NELSAP projects have included regional power interconnection projects and Rusumo Falls Hydro and Multipurpose dam and transmission lines.

¹⁷¹ The only caveat has been that a few Egyptian informants expressed disillusionment with NBI and assumption that NBI now represents the 'upstream' perspective. This sentiment presumably stems from when Egypt froze its participation in NBI in 2010 as a result of the breakdown of the CFA negotiations.

¹⁷² Several interviewees commented that the trust built through working together in NBI built and reinforced trust among the countries during CFA negotiations.

Although complementary, the work of the NBI and the CFA negotiation process were envisioned to be separate tracks. While the NBI was not directly involved in the drafting and negotiation process of the CFA, Nile-COM and Nile-TAC were involved in the later stages (Chapter 3)¹⁷³.

3.3 The Nile Puzzle

Seen in the context of the past century of Nile history, both the Cooperative Framework Agreement and the Nile Basin Initiative are major achievements of the Nile Basin countries. Although consensus has not been reached on how to achieve what is in the collective interest of all the Nile countries, the Basin countries have taken tremendous steps in shifting their mindset from a ‘zero-sum’ approach to Nile waters distribution to sharing the benefits of Nile water use.

The Nile Basin countries face the imminent challenge on their water security imposed by growing populations and uncertainty due to climate change. It will become increasingly important for the countries to address the problem collectively – but at which scale? At the level of the basin, sub-basin (i.e., around the White and/or Blue Nile tributaries), or projects?

The puzzle of achieving collective action is complicated by the fact that there are two competing perspectives on what ‘equitable and reasonable use’ of Nile waters means. The downstream perspective emphasizes the unequal distribution of water resources, while the upstream perspective emphasizes unequal distribution of economic development. Both are legitimate.

IWRM calls for basin-wide management to enable optimization of water resources, but its implementation is made all the more difficult due to the history of water use in the Basin. Three bilateral agreements – the 1902, 1929 and 1959 Nile Agreements – shaped the ‘status quo’ of ‘full utilization’ of Nile waters by the two downstream countries – Egypt and Sudan. This has created mistrust and animosity among the Nile countries, amplified by a contentious history further convoluted by global and regional geopolitical tensions that spill into the Basin.

Despite this, the countries began to engage in cooperative regional efforts starting in the 1960s. These efforts – Hyromet, Undugu, and TECCONILE – were technically focused and geographically limited, but provided opportunities for deliberation. In the late 1990s, the countries embarked on a new collective approach in pursuit of ‘equitable and reasonable’ use of the Nile waters. With the support of donors (especially, UNDP and the World Bank), they pursued a new status quo through two tracks – establishing a basin-wide legal framework (the Cooperative Framework Agreement) to guide water use in the Basin while also building trust and improving technical capacity through the work of the Nile Basin Initiative (NBI). Although the Nile countries have yet to agree on what is in their collective interest and/or how to achieve it, they have cooperated to achieve other things in their mutual interest – improved technical capacity and knowledge of the Basin, improved agricultural practices, energy production, etc.

The following chapters focus on two choices that the Nile countries have in front of them: continue to pursue a basin-wide water sharing framework agreement or avoid the question of water allocation and instead focus on making sure that future hydraulic projects do not cause significant harm to neighboring countries. The next two chapters describe two recent negotiations processes – the basin-wide negotiations on the Cooperative Framework Agreement (1997 – 2010) and the ongoing negotiations (starting in 2011) on the Grand Ethiopian Renaissance Dam – that illustrate the advantages and disadvantages of each.

¹⁷³ Nile-COM started to directly negotiate on the CFA starting in 2008. Nile-TAC was involved in a joint committee with the Negotiations Committee for three meetings that took place over 2009 and 2010.

Chapter Three. Pursuing Collective Action as a Basin

My research is driven by two first-order questions. First, under what conditions will countries cooperate with one another to jointly manage shared water resources? Second, how does the scale of water governance affect the likelihood, or nature, of cooperation? These questions are explored in the context of the Nile River Basin by comparing two negotiations at two different scales: the basin-wide Cooperative Framework Agreement (CFA) negotiations (Chapter 3) and the project-specific Grand Ethiopian Renaissance Dam (GERD) negotiations (Chapter 4).

The first question relates to Hardin's tragedy of the commons and the prescriptive approaches that are commonly referenced in hydropolitical literature. As I outlined in Chapter 1, our analyses of water conflict situations are often informed by one of five prescriptive approaches to pursuing cooperation – what I refer to as institutionalist, idealist, realist, utilitarian, and proceduralist¹⁷⁴. I believe that each of these is critical to unraveling the factors that lead to, or prevent, collective action, but are rarely considered together.

The second question relates to an argument that I often heard during my research: collective action cannot be achieved at the basin-wide level in the Nile basin because the countries are too different from one another and there is too little trust. Collective action should instead be pursued incrementally; starting project-by-project until trust is built and the countries 'buy into' the idea that collective management will be more beneficial to them in the long-term than unilateral development.

This chapter focuses on the basin-wide CFA negotiations, demonstrating why process and institutions matter to enabling collective action. While there are some references to institutional interventions (through the work of the Nile Basin Initiative) that helped reinforce the CFA negotiations, my focus is on specific process design decisions that helped reduce the obstacles created by including so many, and such different, actors. My argument in this chapter is three-fold. First, process matters. A 'good' process can reduce many of the procedural obstacles that prevent actors from achieving collective action. Second, establishing a good process and supporting institutions is crucial, but not enough to achieve collective action. Third, even when consensus cannot be achieved, a good process can help reduce the barriers related to differences among actors, making future cooperative efforts easier.

Section I of this chapter will describe how the design of the CFA process helped to reduce transaction costs associated with including more actors, helped reduce heterogeneity as an obstacle to collective action, and built trust among the actors involved. In Section II, I summarize procedural elements that can be used to reduce the likelihood that the number and heterogeneity of actors will be obstacles to collective action in any transboundary water negotiation. I also return to the importance of trust-building in transboundary water cooperation. Despite the importance of trust, I did not include it as a third variable in this analysis because it is not something that can necessarily be controlled for when considering the scale at which to pursue collective action. Trust is fragile – easily broken and difficult to rebuild. It can, however, help to overcome heterogeneities in identity and should therefore be considered when designing a negotiation process.

I. Negotiating as a Basin: The Cooperative Framework Agreement (CFA)

The first case I consider is the basin-wide drafting (1997-2000) and negotiation process (2001-2010) of the Nile Basin Cooperative Framework Agreement (CFA). The process started on the heels of several regional and technically focused cooperative efforts (Hydromet, Undugu, TECCONILE) in the Nile Basin (Chapter 2).

¹⁷⁴ An oversimplification of the differences between these five prescriptive approaches can be captured by five questions: (i) what institutions are needed to reduce transaction costs and information asymmetries (institutional)? (ii) what ideals can shape a collective identity or shared vision of the common good (idealist)?; (iii) how can power differentials be addressed to reduce the likelihood of collective action through coercion?; (iv) what are the individual costs and benefits of collective action?; (v) what type of process needs to be established to help overcome obstacle to collective action?

Although these efforts helped bring the countries together in a spirit of cooperation, they were never perceived to be challenging the status quo (i.e., water use in the Nile as dictated by the 1959 Nile Agreement)¹⁷⁵. Project D-3, the precursor to the Cooperative Framework Agreement (CFA), was perceived to be the first time that all of the Nile Basin countries would collectively discuss what was in their common interest¹⁷⁶ (Chapter 2).

Despite ten years of negotiation, the countries were ultimately unable to achieve consensus on a single issue – Article 14(b) on Water Security, a provision that outlines how the CFA will interact with prior agreements in the Basin. The downstream countries – Egypt and Sudan – wanted to protect their water security by maintaining the status quo (as defined by the 1959 Nile Agreement). The upstream countries, on the other hand, wanted to usher in a new pattern of water use that would enable them to harness the Nile to promote economic development.

One could interpret the CFA negotiations as a failure because the countries were unable to reach consensus in the end. In my view, this characterization of the process would be unfair. It overlooks the significant amount of trust and understanding that was built in the region throughout the process. It also overlooks how much consensus was built, despite the many obstacles posed by the large number of actors and heterogeneity of actors.

1.1 CFA Negotiations: Many Actors, High Heterogeneity

The CFA process involved many actors, but was designed to reduce the transaction costs of including so many people. These process design decisions included phasing the process so that the most relevant experts or decision-makers were included, limiting country representation in most phases, facilitation by an international organization, and maintaining a continuity of actors throughout most of the process.

2.1.1 Stages of the CFA drafting and negotiation process

The CFA process started in 1997 (Table 10), when the Nile Council of Ministers of Water (Nile-COM) established a Panel of Experts (POE) with the support of United Nations Development Program and the Canadian International Development Agency (CIDA). The POE was comprised of three (two legal and one technical) experts per Nile Basin country and tasked with drafting a Cooperative Framework to help the Nile countries establish a way of achieving equitable utilization¹⁷⁷. Limiting the number of state representatives helped ensure that each state had adequate expertise, while keeping the deliberations manageable. The process was also facilitated by the UNDP staff to ensure that the deliberations were not dominated by specific

¹⁷⁵ As one Ethiopian negotiator observed, ‘Hydromet and TECCONILE – they were... very project specific and had limited scope and also participation of the riparian countries was not all inclusive. The fact that it is being limited to specific projects and to specific geographic scope limited membership. And so countries, Ethiopia, felt all the time that cooperating in a project or two at the sub-basin level does not solve the Nile problem and will not be sustainable cooperation because there is an issue regarding the utilization of the Nile. Ethiopia felt that we need to transparently discuss this issue. There should be a kind of common understanding that this resource is a common resource and that it will, of course, be to the benefit of all the riparians if it is based on some kind of legal and institutional foundation.’ (Interview: March 28, 2015)

¹⁷⁶ The Nile Basin countries’ full participation was motivated by three factors: first, by the opportunity to discuss equitable utilization of Nile waters; second, to do so together, as equal and sovereign states; and third, by the support of the international community. The inclusiveness of this approach was critical to its legitimacy and was the very reason that many countries who had chosen to only observe past collective efforts (e.g., Ethiopia in the case of Hydromet and TECCONILE) were now willing to fully participate. The costs of convening these actors from across the basin, however, were high. Therefore, the support of international donors was critical both in terms of covering costs and adding legitimacy.

¹⁷⁷ The development objective of Project D-3 was to, ‘[i]n the long term, pave the way for the Nile River Basin countries to achieve milestones which would determine net equitable entitlements for each riparian country for the use of the Nile waters and therefore to enhance and promote the utilization of the Nile waters for optimum sustainable socio-economic benefits for the inhabitants of the Basin.’

individuals¹⁷⁸. The POE met ten times¹⁷⁹ between 1997 to 2000 and, in that time, drafted 36 provisions that outlined legal and institutional elements that would help ensure equitable utilization of the Nile Waters. Of those 36 provisions, they were unable to achieve consensus on 17.

Table 10. CFA Drafting and Negotiation Process

Date	Description	Number of Individuals	Consensus Building
1997-2000	Panel of Experts (POE) drafted the Cooperative Framework.	3 experts per country; 2 international experts UNDP facilitator	Of the 36 provisions that are drafted, 17 are disputed.
2001	Transitional Committee (TC) converted the Cooperative Framework into legal text, the ‘draft Cooperative Framework Agreement’ (CFA).	2 legal experts per country 1 international legal expert UNDP facilitator	N/A
2003 - 2005	Negotiation Committee (NC) negotiated on the draft CFA from 2003 to 2005.	≥ 5 per country with 1 spokesperson 1 international legal expert World Bank facilitator	Of the 39 provisions, 8 remain disputed.
2005 - 2007	Nile Basin Council of Ministers of Water (Nile-COM) negotiated the disputed portions of the draft CFA.	NC members 8 Water Ministers 1 international legal expert World Bank facilitator	Of the 45 provisions, 1 remains disputed (Article 14(b) on Water Security).
2009	A joint Negotiation Committee and Nile Technical Advisory Committee (Nile-TAC) team negotiated on the disputed portion(s) of the draft CFA.	Nile-TAC: 2 experts from each country NC: ~40-50 individuals World Bank facilitator	Egypt raises three issues ¹⁸⁰ : existing agreements, prior notification, and amendment by consensus.
2010	Final negotiations by the Nile-COM in Kinshasa, Alexandria, and Sharm El Sheikh.	8 Water Ministers World Bank facilitator	Upstream/downstream divide occurs as upstream countries decide to sign a ‘clean’ draft of the CFA.

In 2000, the Cooperative Framework was converted into a draft legal agreement by a Transitional Committee. The Transitional Committee converted the Cooperative Framework into legal text within a year. The short turn-around can be explained by the continuity of actors who were also part of the POE and therefore already familiar with the issues and each other’s positions¹⁸¹.

The ‘draft Cooperative Framework Agreement’ was then negotiated by country representatives comprising a Negotiation Committee (NC). Each country designated at least five representatives within their

¹⁷⁸ According to the Final Report on Project D-3 (UNDP 2001), ‘[t]he challenge for the project team has been to strike the right balance in terms of involvement. From the interviews, a clear message emerged, namely one of praise for the project and UNDP staff... It was never felt that UNDP tried to steer the process. On the contrary, all interviews confirm that the representatives of the respective governments had a sense of ownership of the process and – at the same time – that UNDP’s role, as facilitator had been crucial.’

¹⁷⁹ POE meetings are as follows (POE 2000): (1) Kampala, Uganda (Jan 13-17, 1997); (2) Cairo, Egypt (Feb. 17-19, 1997); (3) Victoria Falls, Zimbabwe (June 25-27, 1997); (4) Dar es Salaam, Tanzania (May 4-8, 1998); (5) Nairobi, Kenya (Nov 13, 1998); (6) Cairo, Egypt (March 13-14, 1999); (7) Dakar, Senegal (June 14-18, 1999); (8) Kampala, Uganda (Aug 27, 1999); (9) Entebbe, Uganda (Dec 7-10, 1999); (10) Khartoum, Sudan (Feb 28-March 2, 2000).

¹⁸⁰ As a point of clarification, the issue of ‘existing agreements’ was long-standing. The issues of ‘prior notification’ and ‘amendment by consensus’ were ones that were agreed upon during past meetings, but raised again when the Egyptian Water Minister was replaced.

¹⁸¹ Of those listed in the Minutes of the second TC Meeting, only Uganda was represented by someone that had not been involved in the POE.

negotiation team. Some countries, Egypt in particular, has significantly more representatives than others¹⁸². The World Bank played a crucial role in helping to ‘level the playing field’ and ensuring a fair negotiation process by adopting the role of a ‘neutral’ facilitator¹⁸³. Although the sizes of the national NCs varied, many of the same individuals that were involved in earlier stages remained involved in negotiating the CFA. This continuity in people again helped the individuals involved build trust.

Despite their hard work over two years (2003-5), the Negotiation Committee members were unable to reach consensus on 13 provisions, and left these to be negotiated by the Nile-COM in 2006 and 2007. The Nile-COM resolved every disputed provision, save one, Article 14(b) on Water Security. They decided this issue was too political to be decided at their level, and referred it to their Heads of State. When, in 2009, Nile-COM realized that the issue had not been deferred, they resumed their negotiations – first amongst themselves, and then through joint Nile Basin Technical Advisory Committee¹⁸⁴ (Nile-TAC) and Negotiation Committee meetings.

Ultimately, the upstream and downstream country positions splintered on the issue of how the CFA would affect prior agreements (specifically, the 1929 and 1959 Nile Agreements). In 2010, the upstream countries decided to sign a ‘clean’ version of the CFA. This version included all the provisions on which consensus was reached, and left Article 14(b) in the Annex for resolution by a future Nile River Basin Commission.

One interpretation of the process is that it was a failure because it solidified the gap between upstream and downstream positions. A second interpretation, one emphasized by many of the Sudanese, Egyptian and Ethiopian individuals involved in the process, is that the process successful overall because the nine countries negotiated and reached consensus on 44 provisions. This was not, by any means, a small task considering how many countries were involved and how different they were from one another.

2.1.1 Starting with a High Degree of Heterogeneity Among Actors

It is important to understand where the countries started from in terms of the differences in their capacities, preferences, identities (i.e., cultures, languages, and histories), access to information and beliefs in order to fully comprehend how each of these differences can create obstacles to collective action.

The degree of heterogeneity was greatest at the start of the CFA negotiations and most pronounced between the upstream (Ethiopia, Kenya, Uganda, Rwanda, Burundi, DRC, Tanzania, and Eritrea) and downstream (Egypt and Sudan) countries (Table 11).

Table 11. Degree of Heterogeneity Among Actors at Start of CFA Negotiations

Type	Degree	Explanation
Capabilities	HIGH	Upstream countries had very limited technical, negotiation, and legal capacities in comparison to the downstream countries.
Preferences	HIGH	Downstream countries (Egypt and Sudan) usually voted together on different parts of the CFA. Otherwise, countries all had their own preferences at the start of the CFA process but eventually coalesced into a coalition by the end. (E.g. differences in how ‘equitable utilization’ and ‘prior notification’ are defined.)

¹⁸² “Egypt had a much bigger delegation, about 9 or 10 people, and a couple other countries did too. But, for the most part it was the same folks, which was actually good, so then you don’t have the learning curve to deal with.” (Interview: Feb 26, 2015)

¹⁸³ The neutrality of an organization that will financially invest in the river basin can be called into question. However, several interviewees remarked that the World Bank team helped to establish a fair negotiations process.

¹⁸⁴ The Nile Basin Technical Advisory Committee (Nile-TAC) was established in 1999 to support the Nile-COM. It is comprised of 20 senior government officials; two from each Nile country.

Information	HIGH	The downstream countries (Egypt and Sudan) had more access to, and familiarity with, legal and technical data related to transboundary water management.
Beliefs	HIGH	‘No harm’ principle (favored by downstream countries) versus ‘equitable utilization’ (favored by upstream countries).
		Difference in positions on how the CFA would affect historic agreements (1929 and 1959 Nile Agreements)
		Different perceptions of ‘fairness’ illustrated through debate on Nile River Basin versus Nile River System.
Identity	HIGH	Differences in identity (especially culture and histories) came up often at the start of the CFA negotiations, particularly in terms of the downstream countries’ primarily Arab identity versus the upstream countries’ African identities.

Difference is not inherently bad or necessarily undesirable, but some types of difference may present obstacles to collective action:

- Heterogeneities in Capabilities and Information:** One of the most significant obstacles in the early part of the CFA process was the difference in the countries’ technical and legal capacities. Egypt and Sudan had much higher levels of technical, legal, and negotiating capacity and greater access to information (i.e. resulting in information asymmetries) than their upstream neighbors. Differences in capacities and access to information can weaken parties’ negotiating power and make agreement more difficult to achieve, especially if the parties are starting with very little trust, as was the case in the CFA negotiations. An Ethiopian participant noted that, ‘[i]f you don't have the capacity, normally you don't reach an agreement because you always tend to say no. Because it's safer to say no than to enter into an agreement’ (Interview: March 26, 2015).
- Heterogeneities in Beliefs:** When the countries first started the process of drafting the Cooperative Framework, they had very different perceptions of why they were cooperating¹⁸⁵. Egypt and Sudan, the two downstream countries, presumably entered into the negotiations with the intention of solidifying their use of the Nile, as defined by the 1959 Nile Agreement. The upstream countries, on the other hand, wanted to change the status quo. The countries initially saw utilization of the Nile Basin as a zero-sum game: more water use by the upstream countries meant less water available to the downstream countries. Their perceptions of fairness also differed. Egypt and Sudan believed their allocations under the 1959 Nile Agreement to be ‘fair’, given the distribution of rainfall and availability of other water resources in the rest of the Basin. The upstream countries, on the other hand, believed that this pattern of water use (by downstream countries) limited their economic development. These differences in beliefs were evident throughout the negotiations as the countries negotiated on issues related to prior agreement, obligation not to cause significant harm versus equitable utilization, and the use of terms (i.e., Nile River System versus Nile River Basin).
- Heterogeneities in Preferences:** Even when the Nile countries reached agreement on which Principles they would include in the CFA, they initially had very different ideas of how these Principles should be defined. These discussions reflected their preferences in pursuing the common good and differences in their individual level of intensity of their preferences. For example, even after they all

¹⁸⁵ As one negotiator observed (Feb 27, 2015 interview), “I think that when the World Bank and the UNDP managed to get together the ten riparians to sit down and talk, each riparian had something that was not exactly the same as the other riparians... I think they had their own interpretation of what they were signing and their own view. I don’t think there was ever confluence of objectives and ideas. Sudan and Egypt controlled the Nile for a long time, and the others were only on the peripheries of the Nile. And then suddenly, for them to discover that they will have to share the Nile, even if there will be no change in the use paradigm of the Nile... [it required] psychological change for Egypt, and Egypt is not prepared for that.”

agreed to the Principle of ‘equitable and reasonable utilization’, they spent many years defining which factors would be included in this definition.

- **Heterogeneities in Identities:** Egypt and Sudan were united not only by the 1929 and 1959 Nile Agreements, but also by their downstream positions and (primarily Arab) cultural identities. Sometimes their differences in cultures and histories clashed with those of the upstream countries. A participant commented that in the early stages of the CFA negotiations, it seemed that, ‘... the other riparians didn’t really like Egypt that much and we even had, on a couple occasions, people from the Lake Victoria basin refer to the history of Arabs being involved in the slave trade. And of course that was just really incendiary and practically broke up the whole thing... I think he knew very well that this would explode the whole thing, for a while anyway. But he wanted to use that negotiating tactic... there was a lot of emotion surrounding all of this.’ (Interview: Feb 26, 2015) Several others also mentioned that differences in culture and history were sometimes raised in a way that temporarily derailed the discussions, especially in the early stages of the CFA process. Over time, however, these differences were raised less frequently – not because the actors became more homogenous (in terms of culture, language, and history) but due to trust and empathy-building through several procedural interventions.

This chapter aims to answer two questions: How did specific process design decisions within the CFA process help reduce the obstacles associated with pursuing collective action among many, and very different, actors? If the countries were so successful in reaching consensus on 44 provisions, why were they unable to reach consensus on Article 14(b) on Water Security?

For the sake of clarity, I have organized my discussion of the CFA process into five sections. The first describes the early stages of the CFA, particularly drafting the Cooperative Framework by the Panel of Experts (POE), and the procedural elements used to address heterogeneities in capabilities, information, and preferences. The second highlights the heterogeneities in preferences (as reflected by seven¹⁸⁶ disputed issues in the CFA) and ways in which the Negotiation Committee helped build consensus on some of these issues. The third describes the first major turning point in the negotiations - the introduction of the concept of an ambiguous and non-legal term, ‘Water Security’ – during negotiations by the Nile-COM. The fourth section describes the final year of negotiations, during which the upstream countries decided to sign a ‘clean’ draft of the CFA without Egypt and Sudan. This section provides the most detailed description of the negotiations during this final year because it provides the context needed for understanding why the upstream countries decided to sign the CFA without the support of the downstream countries.

1.2 Reducing Heterogeneity in Capacities, Beliefs, and Identities

When the CFA process began, in 1997, the Nile-COM selected two legal experts and one technical expert from each country to make up the Panel of Experts. The degree of heterogeneity among these actors was greatest at the start¹⁸⁷, thereby making this early stage “very difficult, because they [the POE representatives] were coming with different views, different understanding, different beliefs... and for that reason, the international partners were following the process very closely.”¹⁸⁸

¹⁸⁶ Issues include existing agreements, equitable and reasonable utilization, prevention of significant harm, planned and existing measures, environmental assessments and audits, ‘water as a social and economic value’ and ‘Nile River Basin’ versus ‘Nile River System’ (Appendix 3).

¹⁸⁷ Nearly every participant that I interviewed who had observed or been involved in the drafting stage (1997-2000) mentioned that heterogeneities in capacities, information, and identities (culture/language/histories) posed the greatest obstacles in these early years.

¹⁸⁸ Interview: July 21, 2018.

The international partners – the United Nations Development Program (UNDP), Canadian International Development Agency (CIDA), and the World Bank – were very aware that the POE members were coming from disparate positions and needed additional support to help overcome the initial obstacles posed by their differences. They provided support in three ways: (i) funding the participation of the POE in the Nile 2002 Conferences (addressing heterogeneity in beliefs and identities); (ii) hiring international experts (addressing heterogeneity in capability); and (iii) organizing study tours of other basins (addressing heterogeneity in capability and beliefs).

1.2.1 Building mutual understanding through informal dialogue

From the outset, it was clear to Nile-COM and the development partners that the Nile countries had a long way to go to arrive at some shared understanding of the common good. Therefore, “taking a leaf out of the book of the Oslo talks on the Middle East, the project [D-3, or the CFA] was deliberately designed not to fund a formal negotiation. Rather, the project was to fund a dialogue of experts appointed by the Ministers of Water Affairs from each [of] the nine countries. The intent was to ensure that the experts could deliberate outside the pressure of the media and politics, to the extent possible, to try to find convergence on approaches and objectives” (UNDP 2001). In short, it was assumed that a discussion among basin experts would nurture more common understanding than a conversation by official representatives.

When the POE began meeting, it quickly became clear that even the experts had very different perceptions of what the ‘common good’ was (beliefs) and how to achieve it (preferences). According to one of the participants (Interview July 26, 2018), “at the beginning we thought it was even difficult to have the people [together]. Sitting together itself at that time [was]... an achievement. Then talking about the Nile issue used to be a taboo. You cannot even talk about it, because of the perception, the misconfidence, the mistrust”.

At the time, the Canadian International Development Agency (CIDA) was organizing the Nile 2002 Conferences, annual conferences that allowed for informal exchange among politicians, civil servants, academics, and civil society in the Nile Basin (Chapter 2). UNDP funded the participation of the POE members in the Nile 2002 Conferences¹⁸⁹. This presented an opportunity for the POE members to ‘come together and try to exchange ideas and air their issues and perceptions on the Nile. This was the first forum that allowed... different stakeholders to sit together and discuss these issues openly’ (Interview: July 26, 2018). The Nile 2002 Series of Conferences ‘was intended as a kind of informal forum for all Nile Basin experts in the different areas to come and talk without any outputs. Just to bring the hot air out. So that was very helpful because people would come and talk, talk, talk and they would say everything they wanted to say and gradually get to know each other’ (Interview: July 21, 2018).

The Nile 2002 Conferences provided the space for participants to speak openly about their differences – not as official state representatives, but as citizens from different countries. These informal dialogues helped the individuals involved voice their own perspectives (without needing to represent their countries). It helped them become familiar with each other’s positions and interests and provided them with an opportunity to build relationships.

1.2.2 Reducing differences in capabilities and information through use of international experts

One of the most significant obstacles in this early stage was the difference in the countries’ technical and legal capacities, especially between the upstream and downstream countries. Recognizing their weaker capacities, the upstream countries asked the UNDP for help. In response, UNDP hired two (one legal and one technical) international experts to support the POE (Interview July 21, 2018):

¹⁸⁹ “In addition, to broaden riparian dialogue and understanding, the project also funded the participation of all POE members to the Nile 2002 Series of Conferences in Addis Ababa in February 1997, Kigali, February 1998, and Cairo, March 1999” (POE Final Report 2000, p. 5).

Stephen [McCaffrey]¹⁹⁰ came at a later stage when the NB countries complained to the international partners that Egypt and Sudan had legal capacity and they don't have [any]. So they requested the international partners to appoint legal advisors, not for them but for the whole process that they could consult with time and again in discussing what Sudan and Egypt would propose regarding the legal issues... That was the reason we had a legal advisor. And then we had a data consultant also, for the same reasons. So we had two advisors, a data and information consultant. And they divided the group into two study teams - one legal study team and one data and information study team.

Dividing the POE representatives into two groups allowed the POE members to have focused, but coordinated, discussions on what would be needed to effectively and equitably manage the waters of the Nile throughout the basin. The 'Legal and Institutional' team was comprised of two legal experts per basin country, while the 'Data and Information (Technical Resources)' team was comprised of one technical expert per country. Each team consolidated data from the Nile countries to reduce information asymmetries¹⁹¹. These teams worked closely with one of these two international experts and met in conjunction with the POE meetings and separately (POE Final Report 2000). This organization and support from international experts helped ensure that each country had adequate legal and technical capacity and that the countries started with a common understanding (by reducing heterogeneities in information).

1.2.3 Building a sense of 'common good' through basin study tours

This combination of heterogeneities (i.e., beliefs, preferences, and capabilities) make agreement very difficult to achieve. How do countries create a plan for basin-wide cooperation when there is no consensus on what is in their collective interest (belief) or how to achieve it (preferences), while also lacking the means to achieve it (capabilities)?

This was partially addressed through Study Tours¹⁹² of the Mekong River Basin and of Senegal (to study the OMVS and OMVG¹⁹³). These study tours helped the POE recognize that cooperation was possible despite certain obstacles (e.g., from heterogeneities), see the tangible benefits of basin-wide cooperation, and provided a useful starting point for developing their own river basin organization and cooperative framework.

For example, heterogeneity was raised as a potential obstacle for collective action in the 'Study Tour Findings' of both tours. In the case of the Senegal and Gambia river basins, the POE recognized that, '[t]he geo-political situation in the West African sub-region, including the Senegal-Gambia basins is quite different from the conditions in the Nile basin. West Africa is more uniform from the social, economic, cultural, language, etc. aspects and has a tradition in regional cooperation' (POE Final Report, 2000: Annex H. 'POE Study Tour – West Africa'). This observation reflected a recognition that heterogeneity among the Nile countries would presumably pose more obstacles than had been the case in West Africa. The Mekong Study Tour, on the other hand, helped to provide a counter point, as the POE noted that, 'wide divergencies between riparian states

¹⁹⁰ Stephen McCaffrey was the international legal scholar selected to support the POE's work. He had been one of the former Special Rapporteurs for the work of the International Law Commission (ILC) on the 1997 UN Watercourses Convention (from 1982-1991). His recruitment was approved during the fifth meeting of the POE (November 13, 1998).

¹⁹¹ For example, the Data and Information Team drafted a Consolidated report that provided 'the data and information which are needed in order to develop a clear picture and understanding of the basin's main features... The report summarizes, synthesizes and comments on the consolidated information from the national reports' (POE Final Report, 2000: Annex 5).

¹⁹² The study tours were of the Mekong River Basin (Bangkok and Phnom Penh between Nov. 17-21, 1998) and of OMVS and OMVG (Senegal, June 6-11, 1999). The POE originally selected four sites – Mekong, Senegal, Gambia and South Africa (Minutes of Second POE Meeting).

¹⁹³ OMVS is the Senegal River Basin Organization (full name 'Organisation pour la Mise en Valeur du Fleuve Senegal) and OMVG is the Gambia River Basin Development Organization.

need not be an obstacle to agreement. For example, Thailand and Cambodia are quite different if one uses the sole criterion of levels of development... [t]he secret is to begin, and to make adjustments regularly, always taking into account the interests of each party' (POE Final Report, 2000; Annex G 'POE Study Tour – Mekong'). In short, these study tours helped the POE recognize that collective action was possible despite their differences but that consensus would be reached incrementally.

The Study Tours also helped the countries recognize the potential collective benefits that could be realized through basin-wide cooperation, especially in terms of donor-supported development. As the Mekong Study Tour report noted, '[o]ne of the logical consequences of putting in place the cooperative agreement for the basin is that donors have assigned substantial funding for large capital projects in some countries' (POE Final Report 2000). It also helped the POE understand what would be necessary to achieve collective action (i.e., 'constant and focused dialogue among riparian countries'; data exchange; 'inclusivity with participation of all riparian states'; 'political goodwill, diplomatic compromises, technical support, donor support, mutual interests, basin-wide view, etc. '; 'speed, positive spirit, willingness to compromise, dialogue, openness and a basin-wide approach') (POE Final Report 2000).

In summary, these basin Study Tours were critical in providing the POE a useful starting point in envisioning the institutional structures (i.e., law and river basin organization) and technical practices (e.g., data sharing, joint planning, etc.) needed in the Nile Basin. The POE Final Report (2000) notes that, 'the [Senegal] tour certainly contributed in widening perspectives and understanding of the individual experts as well as the Panel as a team, in providing references on political, technical, financial, and socioeconomic issues and tasks that a RBO in any large shared basins can be expected to be confronted with.' In a sense, these study tours helped reduce the heterogeneity of beliefs by helping the POE realize that the benefits of cooperation and collective action could be greater than unilateral action. Although their collective interest was defined, in a way, by the development objective of Project D-3, these Study Tours convinced the *individuals* in the POE that collective action was a worthwhile pursuit.

1.2.4 Taking 1997 UNWC as a starting point

A fourth process decision in the POE process was to use the 1997 Convention on the Law of the Non-navigational Uses of International Watercourses (hereafter, 1997 UN Watercourses Convention, UNWC, or Convention) as a starting point for the Cooperative Framework (Chapter 2). This was not done by design from the start of the process, but was a suggestion by Dr. Mufti¹⁹⁴, one of the Sudanese legal experts in the POE. Dr. Mufti had been involved in the final years (1994-7) of the 1997 UNWC negotiations and was therefore very familiar with the outlined international principles of the UNWC that had 'gone through a very long process of discussion by experts, country representatives and all that' (Interview: July 21, 2018).

Rather than reinvent the wheel, Mufti realized that the Nile countries could use the UNWC as a starting point, thereby reducing some heterogeneity in preferences¹⁹⁵. Although the POE quickly agreed to use the 1997 UNWC as their starting point, they recognized the necessity of reformulating the text to reflect their individual preferences. Interestingly, none of the Nile countries have ratified the Convention. When the final vote was taken¹⁹⁶ in May of 1997, of the Nile Basin countries, only Sudan and Kenya voted in favor of the Convention;

¹⁹⁴ Interview with a non-Basin participant of the CFA drafting process (Feb 25, 2015): "And Mufti made that proposal and I almost fell out of my chair. I thought it would be rejected out of hand because it's the Nile, it's special, and it is. But then there was silence and people started nodding and, it's funny, they accepted it. What that meant was not that they accepted all the language of every article, by any means, but it was just a starting point."

¹⁹⁵ 'So that [adoption of the UNWC as a starting point] really sped the process up a lot because instead of starting from a blank slate, you're starting from a concrete proposal in which a lot of thought is given... [s]o this was a really good way to cut through all of that and get down to the core of the problems' (Interview on Feb. 26, 2015).

¹⁹⁶ 103 countries voted in favor of the 1997 UNWC, 3 (China, Turkey, and Burundi) voted against, and 27 countries abstained. 33 countries were absent when the vote was taken (Abuzeid and Elrawady 2011).

Egypt, Ethiopia, Rwanda, and Tanzania abstained; Burundi voted against; and Eritrea, Uganda, and DRC were all absent (Abuzeid and Elrawady 2010).

The countries' positions to the UNWC foreshadows many of the debates that later took place among the POE members in relation to the Cooperative Framework:

- **Existing agreements (Article 3):** Article 3 ("Watercourse agreements") of the UNWC states that "[i]n the absence of an agreement to the contrary, nothing in the present Convention shall affect the rights or obligations of a watercourse State arising from agreements in force for it on the date of which it became a party to the present Convention." In short, existing agreements are unaffected by the Convention, but parties are encouraged to consider 'harmonizing' existing agreements with its basic principles (Article 3 and 4). Ethiopia and Tanzania felt that the Convention should explicitly state that existing water agreements should be adjusted to the Convention. Conversely Egypt felt the Convention should explicitly say that it would not affect 'bilateral or regional agreements or established laws' (Abuzeid and Elrawady 2011). Presumably, Egypt's objection stemmed from the fear that signing onto the Convention would affect its allocations under the 1959 Nile Agreement.
- **Equitable and reasonable utilization (Article 5 and 6):** The general principle of 'equitable and reasonable utilization' (Article 5) maintains that '[w]atercourse states shall in their respective territories utilize an international watercourse in an equitable and reasonable manner.' Article 6 then outlines seven factors that should be used to determine what 'equitable and reasonable'. These relate to each country's physical characteristics, socioeconomic needs, population dependent on the watercourse, effects of use on other states, existing and potential uses, protection of the resource, and availability of alternatives¹⁹⁷. There were no objections from the Nile states related to this particular provision.
- **Obligation not to cause significant harm (Article 7):** Article 7 ("Obligation not to cause significant harm") states that '[w]atercourse States shall... take all appropriate measures to prevent the causing of significant harm to other watercourse States' and that, in case of harm, it should either be mitigated or compensated. This is the most controversial portion of the Convention and often considered to contradict the earlier principle of 'equitable and reasonable utilization' (McCaffrey 2004). Ethiopia, the upstream country on the Blue Nile, felt that the 'obligation not to cause significant harm' put too much burden on upstream countries.
- **Planned measures (Articles 11-19):** Articles 12 through 18 of the UNWC provide very detailed procedures for how a country should inform other riparians of any planned projects that may have a 'significant adverse effect on other states sharing an international water course' before implementation. They specify that the notifying State should provide six months for other riparians to study and evaluate the potential effects, with the possibility of this study period being extended another six months. In the meantime, it should also refrain from implementing any of the planned measures for that 6-12 month period unless otherwise agreed. Several countries interpreted this as giving downstream countries 'veto' power over projects implemented upstream. Ethiopia, for example, objected, stating that this principle put too much onus on upper riparian countries (Abuzeid and Elrawady 2011). Contrary to popular belief, these provisions do not afford any state 'veto' power over another countries' projects (McCaffrey 2004).

¹⁹⁷ Article 6 of the 1997 UNWC outlines the 'factors relevant to equitable and reasonable utilization' as the following: (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.'

- **Use of term (Article 2):** Article 2 defines ‘watercourse’ to mean ‘a system of surface waters and groundwaters.’ This was very different than the 1966 Helsinki rules, where the unit of management is defined as the ‘drainage basin’. Use of ‘watercourse’ limits the discussion of water in a system to ‘blue’ water, or water that can be easily abstracted (e.g., rivers, aquifers, lakes). ‘Drainage basin’ also includes ‘green water’, or water that is absorbed by vegetation. This completely changes how water is ‘counted’ in measuring ‘equitable and reasonable use’. In the case of the Nile, for example, ‘drainage basin’ would have benefited Egypt because the other Nile countries would be considerably more water rich, leaving more blue water for Egypt. Rwanda abstained from voting because groundwater was included in the Convention (McCaffrey 2004).

The 1997 UNWC is generally accepted to be a reflection of customary international law, but full of ambiguity and contradictions. Two of the most important principles included in the 1997 UNWC – ‘equitable and reasonable utilization’ and ‘obligation not to cause significant harm’ – are inherently contradictory. The first suggests that all countries have a right to develop while the second suggests that they can only do so if it does not cause ‘significant harm’ (ambiguously defined) to other countries. Their inclusion needs to be seen in the context of global negotiations: ‘[p]erhaps not surprisingly, the compromising formula arrive at the UN negotiations is a *pot-pourri* containing something for everyone. Regardless of whether one is from the equitable utilization or the no-harm school, one can at least claim partial victory’ (McCaffrey 2004, p. 255). The Convention is ambiguous and flexible because it needed to be so for the sake of being something that everyone can agree to¹⁹⁸. As will be described later, these same trends – using ambiguity and including what seem to be inherently contradictory principles to reach consensus – were true of the CFA.

1.3 Narrowing Differences in Preferences

Even in the rare instances in which a group of actors have the same understanding of the ‘common good’, they may have very different ideas about how to achieve it. I refer to these differences as heterogeneities in preferences. The provisions included in the CFA should be viewed as a ‘roadmap’ drafted and negotiated by the Nile countries that outlines their collective approach to achieving the ‘common good’. The next section introduces seven disputed areas within the text and begins to trace how, over time, the countries made ‘adjustments regularly, always taking into account the interests of each part’¹⁹⁹ in an effort to incrementally build consensus.

1.3.1 Outlining differences in preferences: POE’s Final ‘miracle’ Report

In March 2000, the POE released their Final Report to the Nile-COM, which included a draft of the Cooperative Framework²⁰⁰. The Cooperative Framework included fifteen general principles²⁰¹ on how the ‘Nile

¹⁹⁸ The Convention should be seen as a general Framework to help guide transboundary water law – a starting point to discuss how the principles fit within a specific context. McCaffrey (2004, p. 261) states that ‘[t]he 1997 United Nations convention on International Watercourses helps to clarify the basic, minimum standards governing the non-navigational uses of internationally shared fresh water resources. For the most part, it should be viewed not as an instrument that seeks to push the law beyond its present contours, but as one that reflects a general consensus as to the principles that are universally applicable in the field. It provides a starting point for the negotiation of agreements relating to specific watercourses, and, in the absence of any applicable agreement, sets basic parameters governing the conduct of states riparian to those watercourses. Even where there is an applicable agreement, the Convention may play an important role in the interpretation of that agreement...’

¹⁹⁹ Reference to the POE’s Final Report on the Study Tour of the Mekong River Basin (Section 2.3.3).

²⁰⁰ The Cooperative Framework was comprised of five parts: (i) General Principles; (ii) Rights and Obligations; (iii) Institutional Structure; (iv) Subsidiary Institutions; and (v) Miscellaneous Provisions.

²⁰¹ These Principles include Cooperation; Sustainable Development; Subsidiarity; Equitable and reasonable utilization; prevention of the causing of significant harm; The right of Nile Basin States to use water within their territories; Protection and conservation; Information concerning planned [and existing] measures; Community of interest; Exchange of data and

River Basin and its waters' would be 'protected, used, conserved and developed'²⁰². This was perceived to be a major accomplishment given where the countries started (in terms of their heterogeneities). According to one participant (de Chazournes and Wijkman 2001, p. 19-20), '[w]hen the project started, we did not expect much. We got involved mainly to please the international community. Several times the project was on the verge of collapse. In spite of all the mistrust and all the difficulties, a draft framework has been produced – that to me is a miracle!'

In their Final Report, the POE members outlined areas in which consensus had been reached and six key areas on which they were unable to reach agreement. The six areas corresponded to 17 disputed provisions and were related to: (i) information concerning planned and existing measures; (ii) existing agreements; (iii) equitable and reasonable utilization; (iv) prevention of causing significant harm; (v) environmental impact assessments and audits; and (vi) water has a social and economic value (Appendix 3). Although it was not listed in the Final Report, I have also included the 'Definition of Terms' as a category since it was raised as an unresolved issue during the eighth POE meeting²⁰³, and then again more formally during the Transitional Committee meetings.

Given how the Nile countries responded to the 1997 UNWC, it is perhaps unsurprising that Principle 15 ('Existing Agreements') of the Nile Basin Cooperative Framework was the most disputed issue outlined in the POE Final Report. The original (POE) describes this as, '[t]he principle that existing agreements conform to the Framework'. This text suggests that any existing agreements on water sharing (e.g., 1929 and 1959 Nile Agreements) in the Nile will be amended to fit the Framework. Predictably, Egypt and Sudan (who were concerned that they would lose their allocations) proposed alternative text: "The Cooperative Framework shall be without prejudice to existing agreements". This was not supported by any of the upstream countries.

The issue of 'Existing Agreements' was the only one that was never resolved (further discussed in Section 2.4), although the countries later tried to address it under the concept of 'Water Security'. This is partially due to the heterogeneity in beliefs about how the common good can be achieved. The downstream countries – Egypt and Sudan – hoped to cement their use of the Nile through recognition of the 1959 Agreement, whereas the upstream countries – particularly, Ethiopia – perceived these negotiations to be an opportunity to establish rules on equitable water use in the Basin. This suggests that there was some confusion from the outset about whether or not the Cooperative Framework would be a legal agreement and, if so, how it would affect existing agreements (1929 and 1959 Nile Agreements). Part of the confusion about what the Cooperative Framework was actually supposed to be may have stemmed from ambiguity in the design of the process (Interview: Feb 26, 2015):

...the way UNDP set this up was that initially you... couldn't call this thing we were discussing an agreement because, I think it was, mainly Egypt objecting to negotiating a new agreement because they were afraid it might affect the 1929 and 1959 Agreements. But at some point we got to the point that it was so obvious that it was an agreement, it was kind of the Emperor's New Clothes situation. People started saying that and finally they said "okay, you can call it an agreement".

information; Environmental impact assessment and audits; Peaceful resolution of disputes; Water as a finite and vulnerable resource; Water has social and economic value; and Existing Agreements (draft Cooperative Framework from Final Report of POE).

²⁰² Although consensus had been reached on some of the principles, there were disagreements on how these principles were then defined in Part II. For example, all the POE representatives agreed on '[t]he principle of equitable and reasonable utilization of the waters of the Nile River Basin,' but there was disagreement on how 'equitable and reasonable' would be defined. Although they started with the seven factors identified in the 1997 UNWC, the Ethiopian POE representatives pushed for the factors to be revised, 'taking Nile realities into account'.

²⁰³ Ethiopian members also raised 'the issue [of] whether the POE is dealing with the Nile river water resources or the Nile river basin', but this issue was 'postponed to be looked into when the definitions' were discussed. Source: 'Minutes of the Eighth Meeting of the Panel of Experts Entebbe, 7-10 December 1999'.

This level of ambiguity about whether or not the Cooperative Framework would later supersede the 1929 and 1959 Nile Agreement was likely necessary for the countries to come to the table.

The second disputed principle was that of ‘equitable and reasonable utilization’. The POE originally recommended that this be defined by the same factors outlined in the 1997 UNWC. Ethiopia entered a reservation, arguing that the factors should be revised to take ‘Nile realities’ into account.

The third disputed area was related to Article 17 (‘Prevention of causing significant harm’). Egypt suggested the title should instead read ‘Obligation not to cause significant harm’, as it is entitled in the 1997 UNWC. The POE’s text also stated that ‘Nile Basin States shall... take all appropriate measures to prevent the causing of significant harm’ – Egypt proposed strengthening the language by replacing the underlined text with ‘refrain from and prevent’. Whereas Egypt wanted stronger language, Ethiopia wanted to exclude the provision altogether. Ethiopia argued that the provision on ‘equitable and reasonable utilization’ already ensured that countries would not significantly harm others because every country had the right to ‘equitable and reasonable utilization’. This is very similar to their earlier critique of the 1997 UNWC that the ‘obligation of preventing significant harm’ put too much onus on upstream countries. In general, the upstream countries favored ‘equitable and reasonable utilization’ whereas Egypt favored ‘no significant harm’²⁰⁴.

The fourth disputed area was related to ‘planned and existing measures’ (provision 20), also commonly referred to as ‘prior notification’. The original POE text is similar to Article 12 of the 1997 UNWC²⁰⁵, but does not include a detailed procedure on how information regarding planned measures will be shared. The Ethiopian POE representatives argued that the spirit of this provision in the Cooperative Framework was already covered under the provision on ‘regular exchange of data and information’ and that planned measures would only be relevant if the basin states reached a water sharing agreement²⁰⁶. According to a member of the POE²⁰⁷,

Prior notification was controversial within the POE and to some extent later in the negotiating process, mainly because Ethiopia viewed it as a one-way street: why should they have to notify Egypt of anything, when Egypt never notified Ethiopia of their many projects involving Nile waters (e.g., Toshka, the tunnel to the Sinai) even though those projects “foreclosed future uses” in Ethiopia, in the sense that they left a smaller margin for Ethiopia to develop without “harming” Egypt.

²⁰⁴ “Of course Egypt favored the ‘no harm rule’, Ethiopia favored the ‘equitable utilization’ rule... The upstreamers all favored ‘equitable utilization’ principle... I tried to get them away from thinking of it as a zero-sum game, not that I used that language, but that’s how these upstream/downstream things are always viewed... and it’s usually not that simple and it doesn’t have to be the case... I think they more or less accepted it because they knew that if you put too much weight on one or another, the whole thing is going to collapse. And that’s what the negotiators found. That’s why you have this paragraph 2, article 2, which a lot of people can’t even figure out. But maybe that was deliberate” (Interview: Feb. 26, 2015).

²⁰⁵ Article 12 of the UNWC states that, “[b]efore a watercourse State implements or permits the implementation of planned measures which may have a significant adverse effect upon other watercourse States, it shall provide those States with timely notification thereof. Such notification shall be accompanied by available technical data and information, including the results of any environmental impact assessment, in order to enable the notified States to evaluate the possible effects of the planned measures.” The POE’s drafted text is similar with the exception of an added line, “The states concerned shall, at the request of any of them, enter into consultations concerning the planned measures in a spirit of cooperation” (POE 2000).

²⁰⁶ At the time, it was still unclear to the POE if the Nile-COM wanted them to develop an actual legal agreement. This confusion may be one of the reasons the negotiations ultimately fell apart over the issue of Existing Agreements. Arguably, Egypt would have never participated in any negotiations that would threaten its 1959 Nile Allocations. Conversely, Ethiopia only participated in the CFA negotiations because it felt that it was the first time the countries were openly and fairly discussing Nile water use. This ambiguity in the POE’s original objective may have been intentional as a way of getting the countries to start thinking in terms of their collective interests.

²⁰⁷ Email exchange (February 27, 2015) with participant of CFA drafting and negotiation process.

In short, Ethiopia pushed back on the inclusion of this provision because it felt the procedures for ‘planned and existing measures’ put too much pressure on the upstream countries, and that the same practices were not being followed by downstream countries. The Egyptian and Sudanese members, on the other hand, suggested that Articles 11-19 of the 1997 UNWC be used in place of this provision.

Neither the fifth nor sixth area – ‘Environmental Assessments and Audits’ and ‘Water Has a Social and Economic Value’ – were major sources of dispute. In the case of Environmental Assessments, the original (POE) text read, ‘[t]he principle of environmental impact assessment of proposed measures and environmental audits of existing projects.’ Egypt and Sudan wanted the principle to only be applied to proposed projects (i.e., thereby excluding existing projects) and Ethiopia wanted Environmental Assessments to be conducted according to each country’s national policies rather than being imposed by the Nile Basin River Commission.

The original text for Principle 13 (‘Water has a Social and Economic Value’) read ‘the principle that water is a natural resource having social and economic value, whose utilization should give priority to its most economic use, taking into account the satisfaction of basic human needs and safeguarding of ecosystems.’ Ethiopia and Kenya both wanted to emphasize the economic value of water, presumably because they can harness the Nile for economic benefits (through hydroelectric production). Egypt, on the other hand, wanted to exclude following text: ‘whose utilization should give priority to its most economic use’ because it would have prioritized upstream water use.

The seventh point of dispute – ‘Use of Terms’ – was raised within the eight meeting of the POE and then again during the Transitional Committee deliberations. Ethiopian representatives suggested that any reference to ‘the waters of the Nile River Basin’ should be replaced instead with ‘Nile watercourses’. They pushed this in order to narrow the definition of water to blue water, partially so that Egypt could not argue that it was receiving less than its equitable share (Interview: March 26, 2015):

The Nile River Basin covers the whole landmass that contribute to the flow of the river Nile. Within Ethiopia, the Nile Basin covers nearly 330,000 square kilometers. So when you talk about the Nile Basin, you talk about the land, rainfall, vegetation, the soil, urban centers, infrastructure, everything. So that is why Ethiopia was pushing to clarify how to use the Basin and the River System. When you talk about the river system it is the river channel with the water flowing in it. What is transboundary - or what is bringing the countries together - is the water that crosses the boundary. So for that reason, Ethiopia was pushing to give recognition to that. So whenever we talk about water utilization, it has to be the River System, but when we are talking about conservation and development it has to be the Basin. Because when you talk about conservation, conservation is actually the whole Basin - the ecosystem, soil, forests and so on. For development also, if you are talking about irrigation, it's outside the River System. But regarding water sharing, water allocation, water utilization, it is the River System. The main reason is actually to really avoid one claim put forward by Egypt whereby they convert the total rainfall in the Basin to runoff and they say that the total runoff is more than 1,600 BCM and the water arriving at Aswan is only 5% of this amount and they say that it is less than their share. So it will take everything back to them. So to avoid this type pseudo-science or pseudo concept into the process, then Ethiopia was pushing to focus on the river system and not on the river basin.

This debate again reflects the heterogeneity in the actors’ beliefs and preferences. From the downstream perspective²⁰⁸, Egypt and Sudan are only using 74 billion cubic meters, or 4.3 percent, of approximately 1,700

²⁰⁸ Quote from an Egyptian involved in the latter half of the CFA negotiations (Interview: March 18, 2015): “The 9 Nile Basin countries received 7,000 BCM of water... the part of the Basin which belongs to the Nile receives 1600 BCM – the Nile portion of the whole 9 countries – and this is, we call it, the ‘green’ water. It is mostly rainwater. But the surface water,

billion cubic meters of total renewable water resources. If the term ‘Nile River Basin’ was used, it would significantly tilt the definition of ‘equitable and reasonable’ utilization in their favor. This would prevent upstream countries from being able to harness the Nile River for economic development.

The issues outlined in this section are important for two reasons. First, they reflect the heterogeneity in countries’ preferences in achieving the common goal of equitable utilization of the Nile waters for all. These issues required additional deliberation and negotiation (further discussed in 2.3.2). Second, they indicate a difference in the intensity of those preferences, as reflected by the pattern of higher participation by two of the basin states. On nearly every disputed issue, two countries – Egypt and Ethiopia – were the most vocal in their objections (Appendix 3, Column 3). This pattern continued into the Negotiation Committee meetings (Interview on Feb 26, 2015):

...these discussions almost inevitably evolved into a two-way debate between Egypt and Ethiopia. And the rest of the delegations just sat there and watched this spectacle play out. And it was really, it was really unfortunate, but these are the two countries that had the most at stake... Egypt is always nervous about anyone taking a drop of water from the Nile upstream and Ethiopia, you know, at the time they hadn’t done much at all to develop their rivers or large rivers coming out of the country.

Arguably, Egypt and Ethiopia had the most to gain and lose in these negotiations. Egypt wanted to solidify its historical rights to the use of the Nile, while Ethiopia wanted to ensure its own use. Sudan often, but not always, acted in concert with Egypt²⁰⁹. This suggests that the heterogeneity of preferences presented more of an obstacle to negotiations than the actual number of actors involved.

The POE members were experts, not formal country representatives and therefore could not negotiate on the provisions outlined in the Cooperative Framework. This work would have to be done by others.

1.3.2 Compromise and Built-in Ambiguity by the Negotiation Committee

After receiving the POE’s Final Report²¹⁰, the Nile-COM established a Transitional Committee (TC) comprised of two members from each Nile Basin country in August 2000 with the task of preparing ‘a Cooperative Framework text for consideration by the Negotiating Committee’ (Mufti 2010, p. 11). The TC was to be given up to six months to prepare the text, which would then be finalized by the Negotiating Committee within 12 months. The Nile-COM’s optimism in assuming that the text would be finalized within a year and a half was most likely fueled by their eagerness to reach a basin-wide agreement in order to mobilize international donor investments in the Basin. At the time, they clearly did not anticipate how difficult it would be to reach consensus on the Cooperative Framework.

which goes in the Nile, which reaches Aswan each year on average 84 BCM. This is, we call it, blue water. The one which we see. So, this is very minor, it’s about 5%. So you may ask ‘where does the other water go?’ The difference between 84 and 1600?”

²⁰⁹ Sudan and Egypt usually expressed the same opinion. This is partially because the two countries were more similar to one another (in terms of their preferences, beliefs and identities) and partly because, according to the 1959 Nile Agreement, the two countries are supposed to act together if any upstream countries demand more use of the Nile waters.

²¹⁰ It is important to note that parallel to, but separately from these negotiations, the Nile-COM and development partners had established the Nile Basin Initiative (NBI) in 1999. NBI was a transitional regional basin organization that would oversee on-the-ground project development to improve the technical capacity of the countries, increase their access to information, and build confidence. These two tracks – negotiations on the CFA and ‘on the ground’ development by the NBI – conceived of as two separate, but parallel tracks (see Chapter 2). In an effort to maintain them as separate tracks in the early years, UNDP facilitated the early drafting of the CFA (by the POE and TC), whereas the World Bank Nile Team focused on the work of the NBI. The World Bank Nile team, headed by David Grey, took on a more active role in the CFA negotiations as neutral facilitators during the NC, Nile-COM, and joint Nile-TAC/NC meetings.

The members of the TC were appointed in January 2001 and met for the first time from May 7-11, 2001. At the second TC meeting (July 30 – Aug 3, 2001), the TC rearranged the text in the form of an agreement, called ‘Draft Agreement on the Nile Basin Cooperative Framework Agreement.’ This short turn-around can be explained by the continuity of actors, in terms of the country experts from the POE and international support²¹¹.

The Negotiation Committee (NC) first met in December 2003 to begin negotiations over the 17 provisions on which the POE was not able to achieve consensus²¹². This phase was distinct from the two previous phases (POE and TC) because it would be the first time participants would officially represent country interests. One of the ways in which they ensured that they were adequately representing their country’s interests was by holding national consultations on the Draft Cooperative Framework to ‘generate consensus on key issues and solicit input into the negotiations’ (Minutes from First Meeting of NC: Dec 9-11, 2003). In Ethiopia, for example, the delegation held an intensive workshop with national experts from various Ministries, academia and the private sector on January 8-13, 2000 (Arsano & Tamrat, 2005; [cite interviews](#)). By the third NC meeting, “[m]ost delegates reported that they had national consultations and workshops since the 2nd meeting of the Negotiations Committee... and that these ‘helped in building capacity of various stakeholders’ and ‘engaged the decision makers so as to strengthen the already existing political commitment.’²¹³

The national NC teams were comprised of at least five representatives selected by the Ministers of each country. This meant that these meetings were attended by anywhere between 50 – 60 individuals. Three things helped reduce the transaction costs associated with having so many individuals involved in these meetings. First, each country NC team had a representative that spoke on behalf of the entire team²¹⁴. Second, these meetings were facilitated by a World Bank staff team. Third, many of the individuals involved in the NC were also involved in earlier stages of the CFA process and were therefore familiar with each other’s preferences and the intensity of those preferences.

The NC met seven times over a two year period²¹⁵. In that time, the NC discussed each of the disputed areas and reached consensus on 31 (out of 39) provisions by December 2005.

Of the seven key issues described earlier (Table 6), the NC was able to reach consensus on four – ‘equitable and reasonable utilization’ (Article 4), ‘prevention of causing significant harm’ (Article 5), ‘environmental impact assessments and audits’ (Article 9), and ‘water has a social and economic value’ (Article 14):

²¹¹ The partners from UNDP and the external legal expert remained the same. Of those listed in the Minutes of the second TC Meeting, only Uganda was represented by someone that had not been involved in the POE.

²¹² “The first stage was the POE stage, which ended up with a report identifying differences and not coming up with any solutions. The Ministers looked at the report and decided to establish the Transitional Committee (TC) with a specific mandate to try to resolve those differences, or as many as possible and come with more specific recommendations. The TC was established but this time there was a concentration of the lawyers, not data and information. Two from each country... [w]e looked into the [final POE] report and then for the first time we started to give it shape, despite the differences. So what we have done, we have drafted the first procedural part of it and the last procedural part. The first part regarding the name, the definitions, the preamble. And then we jumped to the final provision, the signature and adoption. And then we put the controversial issues within and said this is now the work of country representatives... no longer the work of experts. And this was the second stage. The third stage, the Ministers persuaded the different governments to establish a Negotiation Committee (NC), not experts, from country representatives.” (Interview on July 21, 2018)

²¹³ “The delegates and the Chair also noted the reduction of negative reporting by the press in the partner states.’ Source: Minutes from Third Meeting of NC: May 31 – June 4, 2004.

²¹⁴ “We usually have one spokesman. So not everybody would talk... unless the leader would give permission to one of his team to speak. But the leader would speak on the team... And they discussed together, of course, inside the room in the mediating room, or outside. They would discuss something and then come back.” (Interview: March 15, 2015)

²¹⁵ Aside from the first Negotiations Committee meeting, which was held in Ethiopia, the rest were held in Entebbe Uganda: (1) Dec. 9-11, 2003; (2) March 8-12, 2004; (3) May 31 – June 4, 2004; (4) Sept. 20-24, 2004; (5) Feb 7-11, 2005; (6) May 2-6, 2005; and (7) Dec. 5-9, 2005.

- **Equitable and reasonable utilization:** The debate on ‘equitable and reasonable utilization’ was resolved during the second Negotiation Committee meeting by including two more factors: “(h) The contribution of each Basin State to the Waters of the Nile River Basin” (proposed by Ethiopia); and “(i) The extent of the drainage area in the territory of each Basin State” (proposed by Sudan). As McCaffrey (2004) had said of the definition of ‘equitable and reasonable utilization’ in the 1997 UNWC, these *pot-pourri* of definitions within the CFA may have again been included to get everyone on board²¹⁶.
- **Prevention of significant harm:** The debate on ‘prevention of causing significant harm’ was also resolved during the second Negotiation Committee meeting when both Egypt and Ethiopia withdrew their earlier reservations. This suggests that perhaps some compromise was reached between the two countries that the CFA would still explicitly include an article on avoiding significant harm, but that it would not be as strongly worded as the 1997 UNWC.
- **Environmental impact assessments and audits:** This debate was eventually resolved during the third meeting of the Negotiation Committee by making the text of Principle 11 more ambiguous. It was shortened to simply read, ‘[t]he principle of environmental impact assessment and audits.’
- **Water has a social and economic value:** This issue was resolved during the second Negotiation Committee meeting, when the negotiating parties removed any previous reservations entered by the POE.

In short, many of these early disputes were sorted out by making the text ambiguous enough to garner consensus or by including enough that everyone felt their interests were met.

In December 2005, the NC submitted its final report and draft of the CFA for review by the Nile-COM. In its final report, the NC outlined 34 provisions on which the representatives reached consensus, and 8 disputed provisions²¹⁷. Of these eight, the three related to the legal agreement included Use of terms; Information concerning planned measures; and Existing agreements.

1.4 Leveraging Differences in Intensity of Preferences

The first Extra-Ordinary meeting of the Nile-COM to negotiate the CFA was held on March 30-31, 2006. Although the Nile-COM was informed about the CFA drafting and negotiations throughout the process, this was the first time they were negotiating on the content of the CFA. By this point in time, trust among the Ministers had grown due to their engagement in the work of the NBI and their annual Nile-COM meetings.

²¹⁶ These definitions tilt any future calculations of ‘equitable and reasonable utilization’ in favor of these two countries. Ethiopia, for example, contributes 86 percent of the Nile flow. Sudan, at the time, accounted for 63.5 percent of the Nile River Basin.

²¹⁷ The Articles on which consensus had not been yet reached were related to the Use of Terms (Article 3); Information concerning planned measures (Article 3(8) and Article 8); Existing agreements (Article 3(15) and Article 14); Headquarters of the Nile Basin Commission (Article 18); function of Nile-COM (Article 24(11)), Nile-TAC (Article 26(4)), and the sub-basin organizations (Article 31(2)); Amendment of the Framework or Protocols (Article 34a); Adoption and Amendments of Annexes (Article 34b); and the Relationship between the Framework and Protocols (Article 34c); Withdrawal (Article 34e); and Fact-Finding Commission (Annex). Source: Minutes from the Seventh Meeting of NC: December 5-9, 2005. ‘Report of the Negotiation Committee to the Nile River Basin Council of Ministers, December 2005.’ (Report reproduced in the Nile-COM Minutes, p. 326-28).

Between March 2006 and June 2007, the Nile-COM held four meetings²¹⁸ and two subcommittee meetings²¹⁹. Over the course of these meetings, they reached consensus on every part of the CFA except the one related to prior agreements (later renamed ‘Water Security’). This section describes the negotiations as they relate to the three remaining legal issues (Use of Terms; Information concerning planned measures; and Existing agreements). Three things helped the countries move towards consensus: trading across differences, subcommittee and informal meetings, and facilitation by the World Bank.

1.4.1 ‘Use of Terms’: Trading Across Differences (Heterogeneity in Intensity of Preferences)

In the case of ‘Use of Terms’, heterogeneity in the intensity of preferences turned out to enable collective action. Ethiopia was alone on at least two issues – ‘Use of terms’ and ‘Headquarters of the Nile Basin Commission’. Every country other than Ethiopia wanted the headquarters of the future River Basin Commission to be based in Entebbe, Uganda, but, Ethiopian representatives pushed for it to be based in Addis Ababa, Ethiopia.

Over time, Ethiopia realized that it would remain in the minority on both these issues if it continued to push for both of them. During the first Extraordinary Nile-COM meeting related to the CFA (March 30-1, 2006), Ethiopia traded across differences in priorities by supporting the location of the Headquarters (in Entebbe, Uganda) in exchange for the upstream countries’ support on the ‘Use of Terms.’ According to one of the participants (Interview: March 26, 2015),

there are many instances where they [Nile countries] couldn't come to an agreement, but the countries can use their own strategies to shift position enough to get another arrangement... one of the issues was the location of the Headquarters of the Nile Basin Commission, whereby Ethiopia insisted that it should be in Addis Ababa due to its diplomatic role and also the role of Ethiopia as a source of 86% of the Nile. But all other countries wanted that to actually be in Entebbe. At the last minute, when Ethiopia wanted to get support for the River System, Ethiopia gave up and joined the upstream countries on the location of the headquarters.

This ‘trade’ resolved the issue of the Nile Basin Commission headquarters and helped resolve the ‘Use of Terms’ issue. The Nile-COM agreed to incorporate the Use of Terms contextually (i.e., in each Article) and created an ad hoc committee comprised of both technical and legal experts from each state to suggest how each of these terms (‘Nile River Basin’ versus ‘Nile River System’) should be applied to each article. There was initially very little agreement about how these two terms ‘Basin’ and ‘System’ should be applied²²⁰, but by the Nile-COM’s third meeting (February 21-23, 2007) they reached consensus on how these terms should be applied to each article.

1.4.2 ‘Information concerning planned measures’: Subcommittee meetings

²¹⁸ Annual Nile-COM meetings tended to focus on the work of NBI and technical matters in the Nile Basin. Extraordinary Meetings of Nile-COM were held to focus on negotiating the draft Cooperative Framework Agreement. Annual and extraordinary* meetings occurred on: (i) Extraordinary Meeting: March 30-31, 2006 in Addis Ababa, Ethiopia (ii) May 3-6, 2006 (14th Annual Meeting of Nile-COM in Bujumbura Burundi); (iii) Extraordinary Meeting: Feb. 19-20, 2007; (iii) Extraordinary meeting: Feb. 21-23, 2007 in Kigali, Rwanda; (v) 15th Annual Nile-COM meeting: June 24-25, 2007 (Entebbe, Uganda).

²¹⁹ The Sub-Committee meetings were held from April 30-May 1, 2007 in Cairo, Egypt and from June 22-23, 2007 in Entebbe, Uganda (Minutes of 15th Meeting of Nile-COM: June 24-5, 2007 in Entebbe, Uganda). The countries were unable to reach consensus on Article 14b (‘Water Security’) during the sub-committee meetings.

²²⁰ The White Nile countries (Tanzania, Kenya, Uganda, Burundi, Rwanda, and D.R.C) were nearly always in consensus about the application of terms, but for some Articles they were in consensus with Egypt and Sudan and in other Articles they were in consensus with Ethiopia.

The second disputed issue was related to ‘information on planned measures’ (Article 8). The POE suggested text that corresponded closely with Article 12 of the 1997 UNWC. Egypt and Sudan entered a reservation, pushing for the provisions on planned measures to include Articles 11-19 of the 1997 UNWC. Ethiopia pushed back, suggesting that the Article should be deleted altogether because it was covered by Article 7 (‘Regular Exchange of Data and Information’). Despite years of negotiation by the Negotiation Committee (NC), the countries were still unable to reach consensus on this issue. By the fourth NC meeting, the draft text of the Article included text very similar to Articles 11-19 of the UNWC.

The issue was discussed again extensively at the Extraordinary Nile-COM Meeting on February 21-23, 2007. When Ethiopia realized that it was in the minority on this issue, it again shifted its position, but suggested alternative text. According to an observer of the meeting (Interview: March 26, 2015),

Originally, Ethiopia didn't accept the issue of planned measure to be a part of the agreement, but all upstream countries supported the prior notifications. Not only prior notification, but also the steps that are in the 1997 UN Convention as it is, so now Ethiopia has to shift position. They accepted the concept of prior notification, but Ethiopia came up with a different arrangement. It should be exchange of information regarding planned measure and the detail is not important. So when Ethiopia gave up the first position, but went for the first, it was successful for Ethiopia. So there are all sorts of disagreements, but the countries can use different strategies. And in most cases when they don't agree on a specific article, the countries - or the groups can go out, come up with a new construct, negotiate on that. So this is the type of strategies they used on top of the facilitation by the facilitator.

A Technical Committee (chaired by Kenya) comprised of Ethiopia and Sudan was created to consider the article. After years of negotiation, the text was finally reduced²²¹ in 2007 to two short sentences stating that the Nile Basin States would exchange information through the Nile River Basin Commission and follow any rules and procedures established by the Commission. This focused deliberation by a smaller subset of actors helped maintain the efficiency of the process.

The NBI Secretariat was tasked in the interim to decide on what rules and procedures needed to be followed. Ultimately, during the 15th Nile-COM Meeting (in June 23-25, 2007), the Nile-COM decided that the rules and procedures did not need to be included in the CFA and reached consensus on the loosely defined text²²².

1.4.3 “Water Security”: *Neutral Facilitation and Constructed Ambiguity*

One of the issues discussed at great length, but left unresolved, was the issue of ‘Existing Agreements’. After years of negotiation by the NC, the countries reached a stalemate. As a way around it, during the first Nile-COM meeting on the CFA (March 30-1, 2006), the World Bank introduced the concept of ‘Water Security’²²³ (Interview: March 26, 2015):

²²¹ According to the Minutes of the Extra-Ordinary Council of Ministers in Feb 21-23, 2007, [t]he issue [of Planned Measures] was discussed extensively. Ethiopia presented a proposal that mainly focused on excluding the details on procedures and clearance of data and information sharing and exchange through the Commission. ... The NBI Secretariat was instructed in the interim to work out arrangements. These will be internal procedures that will be circulated to the Nile-COM for approval. The agreed interim arrangements will be included in the Framework.’

²²² Article 8 (‘Planned Measures’) of the CFA states that: “1. Nile Basin States agree to exchange information through the Nile River Basin Commission. 2. Nile Basin States shall observe the rules and procedures established by the Nile River Basin Commission for exchanging information concerning planned measures.”

²²³ ‘Water security’ is defined in the CFA as ‘the right of all Nile Basin States to reliable access to, and use of, the Nile River system for health, agriculture, livelihoods, production and environment’. This is very similar to how it was defined by the Global Water Partnership in 2000 (‘every person has access to enough safe water at affordable cost to lead a clean, healthy and productive life, while ensuring that the environment is protected and enhanced.’) This definition was later expanded

When they [Nile countries] were negotiating on the fate of existing agreements, they ran into stalemate and the negotiation process had to be suspended for some time and that is when the Bank actually came with this ambiguous concept of water security. And the negotiations started moving ahead. Always they are coming up with ideas and facilitating. It was very helpful but sometimes they tried to go beyond their limits and had to be checked back. But if there was no facilitator, the process wouldn't have gone so far.

'Neutral'²²⁴ facilitation was critical in terms of proposing creative solutions that helped the participants move beyond their heterogeneities. The use of this non-legal term was also meant to insert 'constructive ambiguity'²²⁵ in the CFA to provide a way past heterogeneities in beliefs (i.e. regarding whether or not the 'common good' could be achieved through recognition of the 1959 Nile Agreement or not). The principle of 'Existing Agreements' was replaced by 'Water Security' and further elaborated on in Article 14. The Nile-COM set up a technical committee to work with the Legal Advisor (Stephen McCaffrey) on coming up with a principle and substantive article related to 'Water Security'²²⁶.

'Water Security' was defined in the 14th Annual Meeting of the Nile-COM as 'the right of all Nile Basin States to reliable access to and use of the Nile River system [water] for health, agriculture, livelihoods and production.' The sub-articles were also defined: 14(a): 'to work together to ensure that all States achieve and sustain water security'; 14(b): 'not to adversely affect the water security or the present and future uses or rights of any other Nile Basin States.' This early definition of Water Security recognized the 1959 Nile Agreement (based on the text for Article 14(b) 'present and future uses or rights'). Interestingly, Ethiopia was the only country to register an objection at the time. It suggested that 14(b) instead read 'to utilize the Nile River system in accordance with the principles of equitable utilization and causing no significant harm.' This is strange considering the redundancy, but reflects Ethiopia's insistence on pushing for a new legal regime.

Despite several more negotiations²²⁷, the countries were unable to reach consensus on the issue (Appendix 4). By the 15th Annual Nile-COM Meeting (June 24-5, 2007), the committee amended the text for Article 14(b) to read that the Nile Basin countries agree 'not to significantly affect the water security of any other Nile Basin States.' This ambiguity of this text apparently satisfied all the upstream countries. The downstream countries, on the other hand, needed some sort of guarantee that their water use would not be affected. Interestingly, the Egyptian Minister of Water Resources and Irrigation, Dr. Mahmoud Abu-Zeid, explicitly noted that water management in the Nile Basin is not a zero-sum game and reaffirmed Egypt's commitment to NBI. This suggests that, while he could not agree to the new formulation, he wanted to signal that Egypt was a willing and enthusiastic partner in the collective effort.

by David Grey (the World Bank representative who helped to facilitate the Nile-COM negotiations) and Claudia Sadoff in their 2007 paper, 'Sink or Swim? Water security for growth and development', to include both the productive and destructive aspects of 'water security'. This is one of the most frequently cited papers on 'water security' – reflecting the permeability of regional and global norms.

²²⁴ The aforementioned quote suggests that the World Bank was not always perceived to be a 'neutral' facilitator. As a development bank, it had its own interests in ensuring that consensus was reached in the Nile. Despite the few mentions that the World Bank team sometimes pushed their own agenda, nearly everyone I interviewed felt that the World Bank's role as a facilitator was crucial in terms of ensuring a fair process and encouraging the countries to continue pursuing consensus when they would reach an impasse.

²²⁵ See Fischhendler (2008) for more on the use of 'constructive ambiguity' in agreements. See Mekonnen (2010) or Salman (2018) for critique of the concept of 'water security' used in the Nile Basin Cooperative Framework Agreement.

²²⁶ Source: Minutes of the Extra Ordinary Nile-COM Meeting, March 30-1, 2006.

²²⁷ Several meetings were held in an effort to resolve the dispute over 'Water Security'. The issue was discussed among the Nile-COM during their meetings; by the Negotiation Committee (February 19-20, 2007); and within two meetings of a sub-committee comprised of Water Ministers from Egypt, Sudan, and Ethiopia and chaired by Uganda (April 30-May 1, 2007 and June 22-23, 2007).

By the end of the meeting, Nile-COM recognized that Article 14(b) was not a technical issue and needed to be solved politically. Rather than getting stuck in endless negotiations over something they felt they did not have the authority to decide on, the Nile-COM deferred the issue to the Heads of State²²⁸.

1.5 Splintering over Beliefs: Impasse over ‘Water Security’

The final year of the CFA negotiations are critical to understanding why the negotiations ended in an upstream/downstream divide and why there are two contrasting interpretations of the final year.

From the downstream perspective, the upstream countries abandoned their commitment to consensus and signed the CFA without Egypt and Sudan’s approval. This undermined much of the trust built through the process. From the upstream perspective, Egypt hardened its stance in the final year of negotiation. Egypt replaced its Water Minister and demanded the countries renegotiate two issues that were already resolved according to the rules of procedure. The upstream countries interpreted these actions as a strategic move by Egypt to stall the negotiations.

Despite the development partners’ initial response to encourage the countries to move forward only by consensus, the upstream countries ultimately decided that partial agreement was better than indefinite negotiations. After several rounds of meetings, the upstream countries signed a ‘clean’ draft of the CFA. This draft included the 44 provisions on which consensus was reached and annexed Article 14(b) on ‘Water Security’ for future resolution by the Nile River Basin Commission.

As is the case in most disputes, perspective matters. I describe the final year in detail because it is important in understanding why the process ‘fell apart’ in the end. The specific testimonies of the countries at different points in the final year also reflect their heterogeneities in beliefs (about whether or not ‘equitable utilization’ could be achieved while maintaining the status quo as defined by the 1959 Nile Agreement) and frustration in being unable to move beyond the impasse. Despite all the progress made throughout the CFA negotiations and through the parallel track of the Nile Basin Initiative (Chapter 2), the final year suggests that even good process and strong institutions are not enough, on their own, to achieve collective action.

1.5.1 Kinshasa Meeting (May 22, 2009): Turning Point in the CFA Negotiations

The next annual Nile-COM meeting was in August 2008. When the Ministers met, they realized that the matter had not been referred to the Heads of State. They gave the new Nile-COM Chair time to see if there was a way to reconcile differences on the issue (Interview: March 28, 2015). The Chair visited the Basin countries to try to find a workable solution and finally called for an extraordinary meeting of Nile-COM on May 22, 2009 in Kinshasa, DRC (El Mufti, p. 72).

During the Kinshasa meeting, the Nile-COM Chair presented three proposals on Article 14(b): (i) delete it; (ii) reformulate it; or (iii) set up a Nile Basin Commission and annex it to be considered by an international audit committee (El-Mufti 2010, p. 72). His proposal was met by three distinct responses by the Nile countries.

First, the Sudanese delegation objected to the issue being discussed by the Nile-COM as a matter of procedure because Nile-COM had decided earlier to defer resolution of the issue to the Heads of State. At the time, however, one of the countries argued that their Head of State could not negotiate on this matter (i.e. it was procedurally not acceptable) (Interview: March 28, 2015). According to Salman (2015), when Sudan’s objection was dismissed, ‘the Sudanese delegation walked out and this withdrawal constituted a precedent in

²²⁸ Source: Minutes of Nile-COM Meeting, June 24-5, 2007.

the Basin meetings and was followed by a series of confused and contradictory statements by the Sudanese delegation' related to Sudan's participation in NBI and position on the CFA²²⁹.

Second, on behalf of the seven upstream countries, the Tanzanian Water Minister voiced support for option (iii), to annex Article 14(b) for later resolution by the Nile River Basin Commission. Although this decision may have made the most sense in terms of maintaining the momentum of the negotiations, it was overly optimistic to assume that it would be easily resolved by an institution that has yet to be established. In effect, the upstream countries chose to kick the can down the road by putting off an impossible decision to maintain momentum in regional cooperation.

Third, the Egyptian Water Minister indicated that he did not accept any of the suggestions by the Nile-COM Chairperson and raised three issues that he believed needed to be resolved before the draft CFA could be finalized (El Mufti 2010, p. 73). These included: (i) Article 14(b) on Water Security; (ii) Article 8 on Prior Notification on Planned Measures; and (iii) Article 34(a and b) related to Amendment of Articles by Consensus. On the second point, he suggested that the process of prior notification should be based on World Bank policy (OP 7.50²³⁰). On the third point, he suggested that decisions would be reached by consensus or by two thirds majority, but only if Egypt and Sudan were included in the majority. In effect, this would give Egypt and Sudan veto power over any future amendments. He proposed that Nile-COM form a committee of Ministers, along with one or two experts from international organizations, to formulate acceptable text for three issues.

The Egyptian Water Minister's proposal was not received well. In part, the reaction to his proposal was personal. The Minister's predecessor, Dr. Mahmoud Abu Zeid, had been involved in all previous Nile-COM meetings and had won the admiration and deep respect of his colleagues and experts of Nile hydropolitics²³¹. The trust that the Ministers had established with their former Egyptian colleague was not something that could be easily rebuilt. Presumably, the new Egyptian Water Minister was acting under strict orders from former Egyptian President Hosni Mubarak to protect Egypt's national interests. However, the fact that he raised two issues – prior notification and amendment by consensus – which had already been negotiated by Nile-COM, was perceived to be a hardening of Egypt's stance and indication of a lack of desire for genuine cooperation.

The upstream countries rejected the Egyptian Water Minister's proposal (Interview: April 4, 2015) and, in the absence of Sudan and without the approval of Egypt, remained determined to act on option (iii) (i.e., to make a clean draft of the CFA, or everything that had been reached by consensus, open for signature). They also assigned the future Nile River Basin Commission six months to resolve the conflict over Article 14(b).

This Kinshasa meeting was identified by many interviewees as a major turning point in the CFA negotiations²³². If the upstream countries continued, without the participation of Egypt and Sudan, the 'upstream' and 'downstream' positions would be formally splintered.

²²⁹ The Government of Sudan eventually submitted a letter to the Nile-COM (dated June 2, 2009) clarifying that it did not agree to the establishment of a Nile Basin commission that does not include all the Basin countries, does not agree to annexing Article 14b; does not agree to appointing an international audit committee to revise Article 14b; and does not agree to Egypt's suggestion to create a committee of ministers with experts to formulate acceptable text (Mufti 2010, p. 74).

²³⁰ World Bank policy, OP 7.50, is an Operational Policy related to 'Projects on International Waterways.' Paragraphs 4-6 outline a procedure for notification. More specifically, it states that countries but notify other riparians on the shared waterway of future projects and outlines a procedure for when other riparians raise objections to a proposed project (Bank Procedure 7.50; paragraphs 8-12).

²³¹ In the preface of his book, 'The Nile Basin – National Determinants of Collective Action,' John Waterbury writes, 'I would add only that anyone concerned with Nile basin issues must be reassured that Mahmoud Abou Zeid is now (summer 2001) Egypt's Minister of Public Works and Water Resources.'

²³² Interviews: March 28, 2015; July 26, 2018; and Aug. 1, 2018.

The international donors intervened. On behalf of the thirteen development partners of NBI, the two Vice Presidents of the African Region and the Middle East North Africa Region of the World Bank issued a joint statement to all the Nile Basin countries on June 29, 2009 (El-Mufti 2010, p. 74). In their letter, they encouraged the Basin countries to pursue consensus, warning that '[w]ithout an inclusive Agreement... many of the gains of the NBI will be lost.' Had it not been for this reminder from donors that more mutually beneficial gains could be realized through basin-wide cooperation, the CFA negotiations may have ended here.

Within a few days, on July 3, 2009, the NBI Executive Director hosted another meeting of the Negotiation Committee to 'clean' the draft CFA. During the meeting, the Egyptian members of the Negotiation Committee proposed several changes to the CFA text aligned with new Egyptian Water Minister's earlier proposal (from the Kinshasa meeting). The upstream countries refused to reconsider the issues of prior notification and amendment through consensus, as they had already been negotiated and resolved by Nile-COM. The Egyptian and Sudanese Negotiations Committee representatives refused to sign the Minutes of the meeting, arguing that the meeting was held under false pretenses. More specifically, in a letter to the NBI Executive Director dated July 3, 2009, the Egyptian and Sudanese delegates²³³ of the Negotiation Committee maintained that the meeting of the Negotiation Committee was 'illegal' and that many of their concerns were not included in the Minutes of the meeting²³⁴.

1.5.2 Alexandria Meeting: 'one Nile, one Basin, one Vision'

Partly in response to the Development Partners' Joint Statement, the Nile-COM met again on July 27-28, 2009 (Alexandria Meeting). Officially (i.e., according to the Minutes of the meeting), the Nile Basin Water Ministers emphasized their desire to 'move forward in the spirit of cooperation on the basis of one Nile, one Basin and one Vision' and emphasized that Nile-COM would like all current and future agreements 'to be all inclusive of all the riparian countries' (El Mufti 2010).

The Alexandria 'decision' was interpreted by Egypt and Sudan as a commitment to moving forward by consensus and a reversal of the Kinshasa decision (i.e., to make the CFA available for signature). This interpretation was disputed in subsequent meetings²³⁵. The source of confusion may lay in what was excluded from the Minutes.

An unofficial description of the meeting²³⁶, notes the response of the upstream countries after the Egyptian Water Minister opposed the Kinshasa decision 'because it failed to guarantee Egypt's access to 55.5 billion cubic meters of water annually, as guaranteed by the 1959 Nile Waters Agreement':

[U]pstream countries, led by Kenya, Tanzania, and Uganda, argued that climate change has changed the circumstances, making it difficult to rely on rain-fed agriculture, and they need to use Nile water for agriculture, power, fisheries, and other water-dependent industries necessary for their 'security.' Egypt, with some support from Sudan, maintained that downstream

²³³ The names listed on the letter included Eng. Mohamed Nasser Ezzat and Professor Salah El Din Amer from Egypt, and Eng. Mohamed Bahr El Din Abdalla and Dr. Ahmed El Mufti from Sudan. Ezzat, Amer, and Mufti had all been involved in the CFA process from the very beginning, starting with their participation in the POE (1997-2000).

²³⁴ This makes the Minutes of meetings as a data source somewhat problematic as a source of data since not everything is included.

²³⁵ "The upper riparian countries continue to retain their views as expressed by the decisions taken at the Nile-COM meeting in May 2009 in Kinshasa (with the six upper riparians willing to sign the CFA without Egypt and Sudan, effecting an NBI "split"). Egypt and Sudan, however, argue that the Nile-COM meeting in Alexandria in July reversed the decisions previously taken in Kinshasa in May." Source: Addis Ababa, "Oct-Nov Regional Environment Newsletter, East Africa." Wikileaks Cable: 09ADDISABABA2843_a. Dated December 3, 2009.

²³⁶ Source: Egypt, Cairo, "No Agreement on Water Sharing at Nile COM Meetings." Wikileaks Cable: 09CAIRO1506_a. Dated August 4, 2009.

countries must approve any water use by upstream countries that could reduce their ‘guaranteed quotas’ of water and threaten their existence.

This position echoes the 1929 Nile Agreement, which states that Egypt has veto rights over upstream development. It also resembles the 1959 Nile Agreement, in suggesting that Egypt and Ethiopia will share the Nile waters as upstream demand grows, but only when they ‘reach one unified view’ that upstream claims are legitimate²³⁷.

By the end of the Alexandria meeting²³⁸, the Ministers agreed to provide an additional 6 months to reach a consensus on the text of Article 14(b) and mandated the Nile Basin Technical Advisory Committee (Nile-TAC) and the Negotiation Committee to develop recommendations on how to move forward (El Mufti 2010, p. 79-80).

Despite the perceived shift back to pursuing consensus on the CFA, there was little optimism from the World Bank team that an agreement would be reached. David Grey, the lead on the World Bank Nile team, remarked that ‘Egyptian President Mubarak and Ethiopian President Meles have taken public positions on Nile water issues that impinge upon their ability to compromise. Grey stated that concessions by either leader would be viewed as a capitulation by their respective populations’.²³⁹ In short, Grey realized that agreement was becoming less politically tenable for Egypt and Ethiopia.

1.5.3 Joint Nile-TAC and NC Meetings: Positions on ‘Water Security’

The Nile-TAC²⁴⁰ and Negotiation Committee met three times²⁴¹. During these meetings, the Egyptian and Sudanese representatives within the Nile-TAC and the Negotiation Committee again raised the three issues that Egyptian Water Minister Allam had raised during the Kinshasa meeting: (i) prior notification; (ii) water security; and (iii) amendments to the CFA through consensus (El Mufti 2010, p. 83-4).

During the first of these three meetings, representatives of Nile-TAC and the NC from the upstream countries (Burundi, DRC, Ethiopia, Kenya, Rwanda, Tanzania, and Uganda) made three points. First, that they would not re-open the discussion on amendments through consensus, referring again to previous resolution

²³⁷ Sudan’s former Minister of Irrigation and Water Resources, Mohamed Ali Kamal, also suggested that ‘extreme’ Nile Basin countries should give themselves time to ‘cool down’ and negotiate more on the CFA. His suggestion was better received by the upstream countries than Egypt’s proposal, because, according to him, the upstream countries ‘trust Sudan more than Egypt’. This trust was partially cultivated by Ali Kamal himself, who had been involved in the CFA negotiations from the start.

Source: Egypt, Cairo, “No Agreement on Water Sharing at Nile COM Meetings.” Wikileaks Cable: 09CAIRO1506_a. Dated August 4, 2009.

²³⁸ Contrary to the popular narrative that Ethiopia led a coalition against Egypt and Sudan (CITE), there are instances in which Ethiopia tried to play a mediating role. For example, during the Alexandria meeting, the Ethiopian Minister of Water Resources, Asfaw Dingamo, purportedly played the role of mediator during the Alexandria meeting. The Egyptian and Ethiopian Water Ministers met for an informal discussion on July 26, preceding the Alexandria meeting. This was followed by a second informal meeting with the Water Ministers of all three Eastern Nile countries, during which ‘Ethiopia’s stated concern with the legality of the Kinshasa and Nairobi meetings earned it Egypt’s confidence and respect’. Later, during the closed door session on July 28, Dingamo was reported to have played an informal ‘moderating role between Egypt and Sudan on one side and Kenya and Tanzania on the other’. Source: Egypt, Cairo, “No Agreement on Water Sharing at Nile COM Meetings.” Wikileaks Cable: 09CAIRO1506_a. Dated August 4, 2009.

²³⁹ Source: Egypt, Cairo, “No Agreement on Water Sharing at Nile COM Meetings.” Wikileaks Cable: 09CAIRO1506_a. Dated August 4, 2009.

²⁴⁰ The Nile Technical Advisory Committee (Nile-TAC) helps support Nile-COM in technical issues. It is comprised of two senior governmental officials from each of the Nile Basin states.

²⁴¹ Nile-TAC and NC meetings: (i) Kampala (September 28 - 29, 2009); (ii) Dar es Salaam (December 10-11, 2009); and (iii) Sharm el Sheikh (April 11-12, 2010).

through Nile-COM meetings²⁴². Second, that the Kinshasa decision ‘provided the basis for moving forward together in an inclusive manner’ and, third, that the Alexandria decision did not reverse the Kinshasa decision²⁴³. The upstream country representatives also recommended recruiting a consultant to help develop a detailed plan for transitioning NBI to a permanent Nile River Basin Commission (Mufti 2011). Egypt and Sudan gave a joint response, stating their belief that the Alexandria decision should dictate their negotiations. Their Nile-TAC and NC representatives also refused to sign the Minutes of the meeting to reflect their lack of support for the direction that the other country Nile-TAC and NC representatives had decided to take (i.e., aligned with the Kinshasa decision).

In preparation for the second meeting, Egypt sent delegates to each of the upstream Nile countries with a new proposal to replace Article 14(a and b) with ‘[t]he upper Basin states can develop their Nile water resources to achieve their water security without adversely affecting the current water uses and rights of the lower Basin states to enable them achieving their water security’ (El Mufti 2010, p. 84). This new text explicitly recognizes the upper riparians’ right to develop, but frames it as being conditional on ensuring that it does not ‘adversely affect’ the downstream countries’ ‘current water uses and rights’. In effect, this would formalize the status quo of water use by Egypt and Sudan.

The growing gap between upstream and downstream positions is reflected in the countries’ responses to the proposed Egyptian text for Article 14(b) as recorded in the Minutes of the second joint Nile-TAC/NC meeting. The Ethiopian representatives rejected the Egyptian proposed text on the grounds that it prioritized downstream water use²⁴⁴. To have accepted the Egyptian proposal would have been de facto acceptance of the 1909, 1929, and 1959 Nile Agreements – all of which are disputed by Ethiopia. They also referred back to Kinshasa decision taken by Nile (i.e., to approve the ‘clean’ text and leave Article 14(b) for future resolution).

The Ugandan representatives were the next to voice their reaction. Like the Ethiopians, they reiterated the opinion that the new proposal was not aligned with the principle of ‘equitable and reasonable utilization’²⁴⁵. They went on to say (El Mufti 2010, p. 86-7):

Uganda appreciates the critical nature of the water needs of Egypt and Sudan particularly given the desert conditions in these countries. This underscores the need to ensure sufficient water for all riparian States at all times. However, “sufficient water” does not necessarily mean the volume fixed under the colonial agreements. As recognized by all, economic development and climate change in the upper riparian states will inevitably lead to a change in the water requirements of those states. The CFA, thus, ought to reflect an understanding that the upper riparian states too have a right to utilize the Nile waters to meet their own needs and that this might unavoidably translate into a reduction in the volume of water reaching Egypt and Sudan.

²⁴² The agreed rules of procedure specified that once an article has been agreed upon by consensus it would not be reopened for future renegotiation (El Mufti 2010, p. 86).

²⁴³ ‘Minutes of the 1st Joint Meeting of TAC/NC Meeting in Kampala during 28-29 September 2009’.

²⁴⁴ They argued that the proposal put forward by the Egyptians ‘takes us backwards. The proposal to replace the entire article 14, destroys the delicate balance in the current article 14 of the CFA by focusing only on the obligations of the upper riparian states. It also goes back to what are called “Uses and rights of downstream states”. This means colonial agreements and the 1959 agreement which amounts to depriving upper riparian countries from the right to use their Nile River water. It is well know that Ethiopia rejected such notions of “historical or acquired right”. They cannot be the basis for our future basin organization as they seek to bestow to Egypt and Sudan only’ (El Mufti 2010, p. 85).

²⁴⁵ More specifically, the first paragraph of Uganda’s response on the issue of Water Security states: ‘The proposed formulation does not address the fundamental difference at the heart of the divergent views between Egypt and Sudan and the other riparian countries regarding the principle of equitable and reasonable utilization of shared water resources... It rather retains the inclusion of a reference the recognition of “current water uses and rights” of Egypt and Sudan provided for under colonial agreements, which, of course, Uganda does not and will never recognize. This prejudices the right of other riparian countries to utilize the Nile Basin waters now and in the future and, indeed, negates the whole idea of a negotiated CFA.’ (Minutes of the 2nd Nile-TAC/NC Joint Meeting as published in Mufti 2010, p. 86).

What then becomes important is to ensure that the reduction in water volume does not significantly affect the water security of Egypt and Sudan. This is properly taken care of in the formulation that has so far been rejected by Egypt and Sudan.

The statement²⁴⁶ highlights Uganda's recognition of Egypt and Sudan's dependence on the Nile River, but rejects the legitimacy of the colonial agreements. It indirectly reiterates NBI's Shared Vision by emphasizing that the purpose of drafting and negotiating the CFA was driven by the recognition that all Nile countries were afforded the right to use water for economic development and to ensure their own security given the unpredictable impacts of climate change. Similar positions were taken by the representatives from Rwanda, Burundi, DRC, Kenya²⁴⁷, and Tanzania (in rejecting Egypt's proposals on Water Security and renegotiating articles that had already been resolved)²⁴⁸.

During the second meeting, the country Nile-TAC and NC representatives also drafted the Terms of Reference (ToR) for the consultant that would outline a path for the transition of NBI into a permanent Nile River Basin Commission. While discussing the TOR, representatives from Sudan suggested that the consultant also review existing regional and international water agreements related to water security²⁴⁹. Egyptian representatives supported this recommendation, but the upstream countries protested, arguing that further deliberation would not be useful (El Mufti 2010, p.93):

There is no need for compilation of treaties from other basins to resolve the pending issue under Article 14(b). The experiences of other basins are well known to all Nile riparian countries and have already been deliberated upon in the past. Whatever nature these experiences have, they would not in any way help us to resolve the pending issue. **We have said time and again that we will not accept any "historical" or "acquired rights"** [emphasis added]. The only way forward is to move to implement the Kinshasa decision and sign the CFA by annexing Article 14(b) and establish the Nile Basin Commission.

The frustration of the upstream countries with Egypt and Sudan is palpable in this response, particularly in the phrase, 'we have said time and again'²⁵⁰. It also reflects the ideological difference (i.e., heterogeneity in beliefs), despite years of deliberation, between the upstream and downstream countries about what 'fair' allocation would be.

²⁴⁶ Of all the recorded statements, Uganda's is the longest. This could be because the Nile-TAC/NC teams were given express orders to try to convince Egypt and Sudan to reach consensus with their upstream neighbors. A cable dated October 27, 2009, noted that Ugandan President Museveni 'shook up his Nile Basin leadership team, demoting Water Minister Maria Mutagamba and giving the Attorney General and Foreign Ministry the lead, in hopes of enticing Egypt and Sudan to support the CFA.' Source: Kampala, Uganda. "Uganda and the Nile: Upstream States Eager for Agreement." Wikileaks Cable: 09KAMPALA1229_a. Dated October 27, 2009.

²⁴⁷ Kenya took a much stronger stance against the new proposal's mention of 'current uses and rights of the lower basins,' reiterating that 'she [Kenya] does not recognize any purported historical rights alluded to in this provision' (El Mufti 2010. P. 87).

²⁴⁸ See Mufti 2010 (p. 87-89) for individual country responses.

²⁴⁹ This may have been a tactic used by Egypt and Sudan in the final year to make proposals by the downstream countries less offensive to downstream countries. An Ethiopian observer of the final year of negotiations mentioned that (Interview: March 26, 2015): "In downstream, it was Egypt who was leading but Sudan who is being used as a frontliner. When there was a difference, that difference was aired by Sudan, not by Egypt. And this was designed by Egyptians. So it is always Sudan that is negotiating but actually this opinion comes from Egypt."

²⁵⁰ Other descriptions of the first joint Nile-TAC and NC meeting also suggest the meeting was particularly tense. For example, in a wire dated Dec. 3, 2009, it was reported that '[a] UK NBTF [Nile Basin Trust Fund] colleague reported that the meeting was tense and acrimonious and served no purpose other than to highlight that the gap between upper and lower riparians seems to be widening. The Egyptians, as the Chair, went to the meeting with no new ideas and they refused to sign the agreed minutes at the end of the meeting.' Source: Addis Ababa, "Oct-Nov Regional Environment Newsletter, East Africa." Wikileaks Cable: 09ADDISABABA2843_a. Dated December 3, 2009.

The international donors watched these negotiations carefully but, this time, did not intervene. The World Bank recommended that the donor partners ‘stand back, but stand by’ to let the Nile countries try to settle the dispute on their own in recognition that the CFA issue was a ‘political matter between sovereign states’²⁵¹. This position of non-interference is interesting considering the fact that they issued the Development Partners’ Joint Statement encouraging the countries to move by consensus less than a year before these meetings. It may have been out of a recognition that agreement was no longer politically tenable.

In the meantime, Egyptian Water Ministry officials made a concerted effort in the final year of the CFA negotiations to influence the negotiations away from the table²⁵²:

Egypt... appears to be engaging in a frenzied “charm” campaign to win over some of the upper riparians and gain another 6-month respite period. U.S. Embassy Cairo officer covering African affairs reports a recent beef deal between Ethiopia and Egypt. Moreover, Egypt is making overtures throughout the basin to help countries with agricultural development through Nile irrigation schemes (Egypt would be in charge of the development). The U.S. embassy officer in Cairo noted that it’s his understanding that this may already be underway in Uganda with Egypt’s intent, according to the U.S. embassy Cairo officer, to “pick off” two of the upper riparians (likely Uganda and Tanzania) so they don’t agree to sign the CFA in late February/early March 2010.²⁵³

These actions – making side deals for beef trade and helping upstream countries develop their agriculture – could be interpreted in two ways. First, as value creation away from the table. Egypt was helping upstream countries achieve their interests in a way that would not threaten downstream interests. Second, as coalition-building to strategically create a blocking coalition to prevent CFA signature. These interpretations are not mutually exclusive – Egypt most likely recognized that both – ensuring its neighbors’ interests are met while protecting its interests and also building coalitions – would be beneficial. Despite these actions, Egypt was unable to influence upstream countries to push for a longer negotiation process.

1.5.4 Hardening of Positions: Sharm el Sheikh and CFA Signing

Nile-COM met on April 13, 2010, the day after the final Nile-TAC and Negotiation Committee meeting, in Sharm el Sheikh, Egypt. The Water Ministers of the seven upstream countries reiterated their position from the Kinshasa meeting²⁵⁴ while the downstream countries pushed again for renegotiation of the three points – Article 14(b) on water security, prior notification, and amendment through consultation²⁵⁵. Unsurprisingly, this hardening of positions on both sides led to an intense fifteen-hour long deliberation that

²⁵¹ Source: Addis Ababa, “Oct-Nov Regional Environment Newsletter, East Africa.” Wikileaks Cable: 09ADDISABABA2843_a. Dated December 3, 2009.

²⁵² A cable from the U.S. Embassy in Cairo, states that ‘Egypt’s Water Ministry officials plan to engage with the NBI countries to solidify their alliances and seek a compromise on the CFA before the February 2010 NileCOM meetings in Sharm El Sheikh... In the next five months... we expect Egypt to proactively engage with upstream countries by offering assistance building wells and hydro-electric dams in order to sway their opinions on the proposed CFA... Minister Allam said he was reaching out to other NBI countries and he hoped that a late September NBI meeting in Uganda, visits by Egyptian officials to upstream countries, and a second NBI meeting in December in Tanzania would provide opportunities for NBI countries to reach a mutually beneficial solution... He told us that an agreement to build wells for agricultural development in Tanzania had been reached.’ Source: Egypt, Cairo, “Egyptian Water Minister on the Nile Basin Initiative.” Wikileaks Cable: 09CAIRO1897_a. Dated October 4, 2009.

²⁵³ Source: Addis Ababa, “Oct-Nov Regional Environment Newsletter, East Africa.” Wikileaks Cable: 09ADDISABABA2843_a. Dated December 3, 2009.

²⁵⁴ The ‘Kinshasa decision’ was for the Nile countries to sign the ‘clean’ version of the CFA and leave Article 14(b) for resolution by the future Nile Basin Commission.

²⁵⁵ Several countries responded to the downstream position by suggesting an exclusion of Article 14b altogether, but other upstream countries argued that Egypt and Sudan would never sign onto the CFA in the absence of Article 14b [Interview: March 28, 2015].

lasted until 4:30 am, and ended with four African delegates withdrawing from the conference in anger (Nkrumah 2010). In the end, the Ministers of the seven upstream countries decided to proceed by making the CFA available for signature, without Egypt and Sudan's support.

The NBI Secretariat, Nile-SEC, prepared the CFA text for signature on July 3, 2009 and the Nile Basin countries were given one year from the Sharm el Sheikh meeting to sign the CFA. The CFA requires signature and ratification by six countries to come into force. It has so far been signed by six countries and ratified by three²⁵⁶. In response, Sudan and Egypt almost immediately froze their participation in the Nile Basin Initiative (NBI). This action further solidified the perceived upstream/downstream divide within the Basin²⁵⁷.

Where does this leave the Nile Basin countries? One interpretation could be that the process of negotiations on the CFA was a waste of time and resources because it ended in group polarization and, arguably, an effete agreement. Even if the CFA comes into force, it will not be binding on Egypt or Sudan. In this critical view, the trust built during the process was undermined during the final year of negotiations and called attention to two conflicting beliefs in the Basin about whether or not 'equitable' utilization can be achieved through the status quo (i.e., recognizing the 1959 Nile Agreement). Based on my research, I hold a second view, which is that the process of deliberation and negotiation was inherently valuable by bringing the parties closer together.

II. Reflecting on the CFA Negotiations

Collective action requires sovereign actors to voluntarily put aside their individual interests to collectively pursue the 'common good.' This is not an easy task. Underlying differences in conceptions of the 'common good' (beliefs), ideas of how to achieve it (preferences), ability to pursue the 'common good' (capacities), the data used to inform decisions (information), and culture/histories (identity) may add layers of obstacles.

The basin-wide collective action effort initiated in the late 1990s (through the CFA negotiations and establishment of the Nile Basin Initiative) was unique in the Nile Basin in that it was the first time that all the countries participated (Chapter 2). Although basin-wide participation was crucial to establishing the legitimacy of the process, pursuing collective action at this scale (rather than through bilateral agreement) introduces greater likelihood of heterogeneity and increases the transaction costs associated with including many actors.

As was demonstrated in the case of the Nile Basin CFA negotiations, the number of actors sometimes poses less of a barrier to collective action than the number and diversity of interests. Although there were nine countries negotiating, there were only three major interests²⁵⁸: 'All the Equatorial countries are almost the same voice. There are only three voices - the Equatorial [countries]; Ethiopia; Egypt and Sudan... There are only three groups.' This may have been a testament to how successfully the process design reduced the obstacles related to number of actors.

²⁵⁶ Four countries – Ethiopia, Rwanda, Tanzania and Uganda – signed the clean draft of the CFA on May 14, 2010. Kenya signed five days later. Burundi signed in February 2011. It has so far been ratified by three – Ethiopia (June 13, 2013), Rwanda (August 28, 2013), and Tanzania (March 26, 2015).

²⁵⁷ By design, the outcome of the CFA was not supposed to affect the participation of the countries in the NBI. From the start, the two tracks - the political track of the CFA negotiations and the technical track of the NBI – were intended to be separate, but parallel so that each track would strengthen the other (Chapter 2). For example, 'on-the-ground' projects and studies conducted through the NBI were intended to (and did) build trust and confidence among the Nile Basin countries. This indirectly reinforced the trust built through the CFA process and helped demonstrate the benefits of joint planning and implementation to the Nile Basin countries.

²⁵⁸ Interview with Sudanese negotiator: July 26, 2018.

The donors, specifically UNDP and the World Bank, played a critical role in reducing obstacles related to the number of actors in three ways²⁵⁹. First, they absorbed the financial costs of involving so many actors. Second, they acted as a soft ‘enforcer’ of the norms of collective action by incentivizing the countries to proceed by consensus throughout most of the negotiations. Third, their promise of investment in the basin helped ensure (at least the perception) that the benefits of cooperation would be equitably distributed among the Nile countries. In addition to the donors’ support, several procedural interventions also helped reduce the transaction costs of including so many individuals in the negotiations. These included reducing the number of representatives per country; nominating one spokesperson per country; phasing the negotiations so that the most relevant people are at the table; and process facilitation (by the UNDP and World Bank). I therefore focus my discussion on heterogeneity as a potential obstacle to negotiation.

This section describes ways in which the obstacles related to heterogeneity can be reduced through procedural (Section 2.2) and institutional (Section 2.3) interventions. Despite these interventions, the negotiations ended in an upstream/downstream divide. Therefore, I also consider additional hypotheses that may help explain why the countries were unable to reach consensus before describing why one might expect collective action to more easily occur at a smaller scale (Section 2.4). Before this, I start with a few clarifications about my use of heterogeneity as a variable (Section 2.1).

2.1 Characterizing Heterogeneity

‘Heterogeneity’ is itself an ambiguous, and therefore confusing, term. In an effort to avoid overgeneralizing, I have delineated the types of heterogeneity that came up most often – either implicitly or explicitly – during my research as barriers to cooperation. I also want to make three clarifications about my use of ‘heterogeneity.’

First, heterogeneity, or difference, is not inherently bad. In negotiations or international relations literature, differences in preferences (and the intensity of those preferences) and differences in capacities are often recognized as enabling conditions for cooperation. These differences may allow negotiating parties to reach agreement by trading across their differences, logrolling (i.e., exchanging favors), building coalitions (e.g., to offset differences in capacities within a negotiation), or using differences in capacity to create value away from the table to help incentivize cooperation. In short, heterogeneity may enable cooperation.

Second, context matters. Heterogeneity may lead to more obstacles within a negotiating environment in which the parties do not have much incentive to cooperate and/or do not have the relationships or trust needed to ensure reciprocity in a voluntary collective action effort. For example, heterogeneity in technical capacity may not pose an obstacle in an environment in which the actors trust each other. When the actors do not trust one another, however, heterogeneity in technical capacity (as seen in the case of the CFA negotiations) may hinder cooperation. Although I find it useful to categorize types of heterogeneities that may lead to obstacles (for the sake of identifying procedural and nonprocedural interventions that can reduce those obstacles), there are no ‘golden rules’ about heterogeneity. As is the case in most discussions in social science, context matters.

Third, scale matters. When evaluating heterogeneity as an obstacle to, or enabler of, cooperation, it is also important to consider the scale at which the heterogeneity exists. What makes collective efforts even more challenging, at least in the case of something like transboundary water negotiations, is that obstacles occur as a result of heterogeneities at two scales: among individuals and countries. Furthermore, the same type of heterogeneity may enable cooperation at one scale, but create a barrier to cooperation at another.

²⁵⁹ Mancur Olson (1965) argued that voluntary collective action could only occur in small groups due to (i) transaction costs; (ii) increased ‘free riding’ in the absence of enforcement of collective action norms; and (iii) diffuse, or unequal, distribution of collective benefits versus individual costs.

For example, heterogeneity in capacity at the country-level may enable cooperation. Egypt has greater technical capacity than many of the upstream countries and, as a result, was able to help Uganda build wells for agriculture. This is an example of value creation away from the table. Egypt protected its own interests (i.e., limited use of the Nile by upstream countries) by helping Uganda achieve its interests (e.g., increased agricultural production through groundwater use). These types of interventions may help establish a general cooperative environment in the Basin.

Within negotiations, on the other hand, heterogeneity in capacity among individuals may lead to perceptions of unbalanced and potentially unfair situations. Ethiopian negotiators mentioned that the early part of the CFA process was challenging because many of the upstream countries lacked technical and legal capacity. It was easier for them to say ‘no’ than to agree to something they did not understand (Section 2.1.1). In this case, heterogeneity in capacities and information needed to be reduced to enable ‘weaker’ parties (in terms of their capacities) to feel secure in the collective effort.

Therefore, any interventions that try to reduce the obstacles related to heterogeneities should take the scale at which they occur into account. A two-track approach that can address heterogeneities among the individuals involved in decision-making (in this case, the CFA negotiations) and that can leverage heterogeneities among states (in this case, the Nile Basin Initiative) can help ensure that heterogeneities can be reduced as obstacles and increased as enablers of collective action.

2.2 Reducing Barriers to Collective Action through Process

When the Nile Basin countries started this basin-wide effort in the late 1990s, they were widely divergent by many measures (i.e., beliefs, preferences, capabilities, information, and identities)²⁶⁰. As one participant observed, the Nile countries ‘started from zero – zero cooperation, zero knowledge and a high degree of mistrust’ (Interview: March 2, 2015). By the end of the thirteen years, however, they collectively drafted, and reached consensus on, fifteen principles²⁶¹ that reflected their definition of the ‘common good.’ On top of that, they reached consensus on 44 Articles that outlined how they would achieve it²⁶². Given where they started from, this was a huge accomplishment.

This ‘narrowing of differences’ was enabled through years of deliberation and negotiation and good process design. The CFA negotiation process offers several examples of procedural interventions that help reduce obstacles related to differences in capabilities, information, preferences, beliefs, and identities (Appendix 5).

Differences in capabilities and information were both raised as major obstacles in the Nile. As one international river basin expert noted (Interview on March 1, 2015), “Because the school level is very uneven across the countries, it’s very difficult for people to buy-in because they’re not confident about what they’re buying into. And so, until you can even up the school level, the school mix, it’s going to be a problem. And Egypt has the highest school mix, followed by Northern Sudan. You know, universities that have been in place

²⁶⁰ As one Ethiopian negotiator noted (Interview: Aug 2, 2018), “Over the years, people recognized the deficiencies of ad hoc arrangements and decided to launch an all-inclusive CFA process. And they started negotiating. It took 10 years because there wasn’t trust and confidence among the countries, different levels of uses of Nile waters, and capacities of the NB countries wasn’t equal. So the negotiations naturally took a very long time.”

²⁶¹ These Principles, enumerated in Article 3, are as follows: cooperation, sustainable development, subsidiarity, equitable and reasonable utilization, prevention of the causing of significant harm, the right of Nile Basin States to use water within their territories, protection and conservation, information concerning planned measures, community interest, exchange of data and information, environmental impact assessment and audits, peaceful resolution of disputes, water as a finite and vulnerable resources, water has social and economic value, and water security.

²⁶² When asked about the process overall, Mahmoud Abu Zeid responded, ‘I think it [the CFA process] was a success... Not being agreed upon doesn’t mean it wasn’t a success... it had 45 items, and we agreed on 42. So, the majority of it was agreed upon which means we have a good basis for future work.’

for 100 years. Data, data, data, data.” These differences are very difficult and time-consuming to address at a macro-scale (i.e. at the country-level). However, the obstacles posed by these differences can be easily addressed within the process of negotiation.

Differences in information were addressed in the early stages of the CFA negotiations by dividing the POE into two study teams – a legal and institutional team and a technical team. These teams collated the data made available to them by the Nile Basin countries and combined them into two summary reports so that all the country experts were making decisions based on a common set of data. Differences in capabilities were addressed through several procedural interventions, including: (i) Involvement of country experts to ensure that each Nile country had adequate technical and legal capacity; (ii) Additional support provided by international experts (on treaty and river basin organization design) to address any gaps in different countries’ capacities; and (iii) Professional facilitation (by UNDP and World Bank) to ensure that one country’s ‘superior’ negotiating capacity did not overshadow another country’s capacity (Sections 2.2 and 2.3).

Differences in preferences may, in some cases, enable cooperation. Although the Nile countries started with very different preferences in terms of how they would achieve ‘equitable utilization’, they eventually reached consensus on 44 (or 42) out of 45 provisions of the Cooperative Framework Agreement. This was largely due because (i) they started with the 1997 UNWC as their baseline, and (ii) they continued to narrow the gap in differences in preferences through years of deliberation and negotiation. Although it ultimately led to impasse, the countries also tried to avoid the differences in their preferences by inserting ‘constructive ambiguity’ in the text of the (e.g., ‘water security’).

Differences in beliefs are more difficult to reduce. A common obstacle raised by many negotiators was that the upstream and downstream countries had conflicting ideas about who was entitled to the water. During one of my interviews with an Ethiopian negotiator²⁶³, he reflected on how the countries often framed use of the Nile water as a zero-sum game:

I remember once when we were identifying projects for the Eastern Nile SAP [Subsidiary Action Program], we had certain projects identified for agriculture and irrigation development and hydropower. And one question that I’ll never forget is that one of the subsidiary Nile team members said ‘wait a minute. You say you’re going to develop irrigation. Where will you get the water from? From the farmer in Alexandria or upper Egypt?’ My answer to that question was ‘no, no no - we’ll get it from the backyard of the farmer in Ethiopia’.

Although the countries still have very divergent beliefs and preferences about how the Nile waters should be apportioned and used (further discussed in Chapter 4), the CFA negotiations helped them start to see (and empathize with) each other’s interests²⁶⁴ and to recognize the ‘bundle of benefits’ that they could capture through collective management²⁶⁵. The shift from the zero-sum to mutual gains mindset occurred as a result of showing the Nile countries successful examples of basin-wide management in other river basin (i.e., river basin

²⁶³ Interview: Aug 1, 2018.

²⁶⁴ Egyptian negotiator emphasized the importance of CFA negotiations and work of NBI in building empathy among the countries. Described how touring the Basin helped all the country representatives understand each other’s concerns (Interview: March 18, 2015): “At least, I myself, now understand their concerns. And I hope they understand our concerns, and so on. Because before that, I myself, I have toured all the places of the Nile Basin.”

²⁶⁵ In evaluating the CFA process as a whole, an Egyptian negotiator stated (March 18, 2015), “the river belongs to all of us. And you can go for one paper which David Grey and Claudia Sadoff wrote that we can benefit from the paper... and there are a lot of benefits.” The Grey and Sadoff (2002) paper that he was referring to is entitled, ‘Beyond the river: the benefits of cooperation on international rivers’ and describes a mutual gains approach to basin-wide water management. This paper was referenced by several interviewees as having been influential to a shift in their beliefs.

study tours), continual reminders by the donors to share the benefits of basin-wide management, and conducting studies of the potential benefits of basin-wide cooperation²⁶⁶.

Differences in identity cannot be addressed in the time it takes to negotiate an agreement. However, the obstacles posed by differences in identity can be reduced through trust- and empathy-building among the individuals directly involved in the negotiations through several procedural interventions. These included providing participants with ample opportunity to deliberate in an informal setting (e.g., POE, Nile 2002 Conferences, River Basin Study Tours) and ensuring some continuity in the actors involved²⁶⁷.

In summary, many of the obstacles that occur as a result of heterogeneity (at least among individuals) can be addressed through procedural interventions. For a collective action effort to be sustainable in its implementation, however, these heterogeneities must also be addressed at the macro-level (i.e., among publics of countries). These may be more effectively addressed through institutional interventions.

2.3 Reinforcing Process with Institutions: A Two-Track Approach

The success in the Nile was in large part due to the two-track approach of pairing the procedural (legal/political) track of the CFA negotiations with the institutional (technical) track of the Nile Basin Initiative (NBI).

One of the greatest barriers to collective action (as identified by most the negotiators that I interviewed) is related to the heterogeneities in identity. One of the lead negotiators for Sudan noted that the differences in identity among negotiators is a reflection of a broader difference among the people of the countries (July 26, 2018):

The negotiation is part of the cultural diplomacy. It will depend on how the issue is perceived in the minds of people of the country. Negotiators are not different from the people of the country, so the Nile in Egypt is different from the Nile in Sudan. The perceptions, the dependence is different and Sudan is different than Ethiopia. And this is going to turn the thinking of the negotiators. Because the negotiators are not coming from the outside, they are affected by the culture of the country.

Therefore, the obstacles posed by differences in identity need to be addressed both within, and outside of, a negotiation process to enable collective action. The previous section outlined several ways in which procedural

²⁶⁶ As part of NBI's work, in 2005, the Eastern Nile Council of Ministers launched the first phase in identifying multipurpose joint development projects that would be beneficial to all the Eastern Nile countries (under the Joint Multipurpose Program). In 2008, two experts in basin management – Dale Whittington and Don Blackmore – shared their report, entitled 'Opportunities for Cooperative Water Resources Development on the Eastern Nile', with the Eastern Nile states. In it, they outlined several projects that would be beneficial to all the Eastern Nile countries if they cooperated with one another. This report was cited several times during my interviews, presumably because it was influential in shifting the mindsets of the Nile water practitioners.

²⁶⁷ Several negotiators emphasized the importance of the continuity of actors to building trust in the negotiations. For example, one of the Sudanese negotiators pointed to the change in individuals involved as the cause for the turning point in the negotiations (Interview: July 26, 2018): "the turning point - at some time, there was a completely new set of ministers. In particular, in 2009, before the Kinshasa meeting. The problem started almost from the Kinshasa meeting. At that time there was a new set of Ministers. Only Kamal Ali, the Minister of Sudan, and he left the meeting... It was a crucial point because I strongly believe that new ministers should stay at least for two, three years only to understand the Nile issue. They should not decide when they are very new. I think it is a capacity issue. So they decided just to stop the negotiation and move forward and sign. This decision was created because of the lack of capacity of the ministers at that time. And Kamal left the meeting. He was a technician and the Minister, and he knows the Nile more than anybody else. He left the meeting instead of staying. He was trying to create a position by leaving, but the decision was not right. He should have tried to convince the new Ministers - even Egypt, at that time, had a new minister."

interventions helped address heterogeneity in identity. However, these alone will not lead to a sustainable agreement if differences in identity are not also addressed among the broader public.

In the short term, this means that a baseline level of trust needs to be established among the publics of the countries to create an enabling environment for the negotiations. This type of work was often done in parallel to the CFA negotiations through non-procedural interventions by the NBI²⁶⁸:

Given the fact that public perception directly effects a politician's room for political maneuverability, and it is the NBI countries' respective governments that must sell any Nile deal to their publics or face political suicide at home, public perception is a vital component to negotiating a successful resolution on the Nile. The World Bank is gearing up to launch a media assault initiative through the NBI to inform the people in the region on the broad-scope benefits of a Nile resolution. The message will not only highlight the fact that the water security of Egypt and Sudan and upstream Nile development are not mutually exclusive, but that the win-win scenario of a resolution would entail enhanced food and energy security; biodiversity protection; better overall environment stewardship; improved livelihoods; increased standards of living; poverty alleviation; expanded regional trade, growth, and development that would provide Egypt with robust, new markets for its companies; and the promotion of regional peace and security. While the World Bank may be taking the lead in this information campaign, ultimately it is the responsibility of all stakeholders to shape the parameters of the debate and frame the mindsets of the public.

The World Bank recognized that the public's buy-in to the CFA negotiations was crucial to making agreement on the Nile politically tenable and therefore tried to promote the benefits of cooperation outside of, but parallel to, the negotiations through the work of the NBI.

In the long term, ensuring sustainable support for the implementation of the agreement may require building a collective identity – one that complements, rather than replaces, national/ethnic identities. The Nile Basin Initiative's motto, for example, is 'One River. One People. One Vision'. Since 2007, NBI has been organizing an annual 'Nile Day' to bring the people of the Nile together to build awareness about the importance of basin-wide cooperation and 'expose participants to the rich and varied cultures, which exist within the Nile Basin'²⁶⁹. This approach helps to build one collective identity (i.e., one Nile people) while also recognizing the value of difference (i.e., by celebrating 'rich and varied cultures').

Similarly, heterogeneities in information, capability, preferences and beliefs also need to be addressed through procedural and non-procedural interventions to ensure sustainable collective action (Appendix 5). For example, although heterogeneities in capability and information among individuals are easily addressed within the process of negotiations. However, for joint planning and water management, these heterogeneities also need to be addressed at the country-level. This, again, was enabled through technical capacity building and knowledge development through the work of the NBI²⁷⁰.

The importance of the NBI to the CFA process in particular, and cooperation in the Nile in general, cannot be overstated²⁷¹:

²⁶⁸ Source: Addis Ababa, Ethiopia. "U.S. Engagement Vital to Nile Negotiations." Wikileaks Cable: 09ADDISAABA454_a. Dated February 23, 2009.

²⁶⁹ Source: Nile Day Flyer. (Nile Basin Initiative. 2017. "Nile Day Celebration: 22nd February 2017." Available at <http://nilebasin.org/index.php/documents-publications/48-regional-nile-day-2017-flyer/file>)

²⁷⁰ One of the major achievements of NBI is the establishment of the Nile Basin Decision Support System, a tool used to support informed decision-making.

²⁷¹ Interview: March 28, 2015.

I'm sure it is not in anybody's interest to close down NBI because we will go to where we were some 10-15 years back. A situation in which people could not even shake hands with, could not even talk, could not even sit in the same room together. But now things are really very different and this was because of the NBI. I can tell you that I'm kind of born again as far as the concerns of the downstream countries are concerning me, because I fully understand the position they are in and I cannot claim that this is my water and that I can do what I like with it, and that attitude has been changing because of this process... And the NBI has also built the capacity of the countries and 'leveled the field' for some countries in terms of analytical skill.

While many of the potential obstacles were addressed through the process of negotiations, the sustainability of the collective action effort needed to be reinforced through institutional interventions.

...

There is an inherent tension between efficacy and efficiency. Arguably, basin-wide collective action is most likely to ensure regional water security because it would allow the Nile countries to optimize across a large geographic area, thereby shifting from a zero-sum approach (in which they share the Nile river) to a mutual gains approach (in which they share the benefits from the river). If agreement cannot be reached at the basin-level (as has been the case in most river basins in the world), collective action may be more easily achieved at a smaller scale.

The next chapter (Chapter 4) describes the GERD negotiations and describes several procedural interventions (e.g., joint fact finding, value creation, trust-building) that helped overcome initial obstacles due to heterogeneities in information, preferences, and identities. It extends beyond the discussion of number and heterogeneity of actors as obstacles to negotiation, and considers several other obstacles that would require prescriptions beyond procedural and institutional interventions.

CHAPTER FOUR. PURSUING COLLECTIVE ACTION ON THE GERD

“The relationship between Egypt and Ethiopia is like a very old marriage with no possibility of divorce... it has its ups and downs, but it is very solid... the first thing we have to recognize is that utilization of the Nile water is not a zero sum game... the only solution to the Nile is a win-win solution.”

(Former Ethiopian Prime Minister Meles Zenawi)

Shortly after the upstream countries signed a clean draft of the Nile Basin Cooperative Framework Agreement (CFA) in early July 2010, former Ethiopian Prime Minister Meles Zenawi gave an interview on an Egyptian television program on Nile water sharing²⁷². In the interview, he likened Egypt and Ethiopia to an old married couple and emphasized the need for a win-win solution to the Nile. One such approach would be to use Nile water for hydroelectricity production (a non-consumptive use) upstream and for agriculture downstream. He went on to describe all the potential downstream benefits of constructing hydroelectric dams in Ethiopia. In addition to being able to buy power from Ethiopia at a reduced rate, the downstream countries (Egypt and Sudan) would benefit from regularized year-round water flow, improved dam function due to reduced siltation, and reduced Nile water evaporation²⁷³.

Less than a year later, in March of 2011, Ethiopia announced the construction of the Grand Ethiopian Renaissance Dam (GERD), a hydroelectric dam on the Blue Nile river, approximately 20 kilometers upstream of the border with Sudan. Once complete²⁷⁴, GERD will be the largest hydroelectric dam in Africa. It has the installed capacity to generate 6,450 megawatts of power²⁷⁵ and store 74 billion cubic meters of water.

Egypt and Sudan, the two countries downstream of the planned project site, were caught off-guard. Not only by Ethiopia's consideration of unilaterally constructing a hydroelectric dam on the Blue Nile, but by the fact that Ethiopia could afford to do so²⁷⁶. The possibility of their upstream neighbor having control of their water was, at least initially, perceived to be an existential threat. For Ethiopia, on the other hand, the dam is part of a larger response to a growing energy crisis and to catalyzing economic development²⁷⁷.

Ethiopia's unilateral construction of the dam could have led to conflict, and arguably nearly did, but the three countries have remained committed to reaching a negotiated agreement that is in their collective interest. In 2015, the Heads of State of the three countries signed the Declaration of Principles (DoP), a confidence-building agreement pledging the countries' commitment to cooperation. Despite this initial success, the countries have been unable to reach agreement on how to fill and operate the GERD to mitigate downstream impacts.

²⁷² The interview was published on the youtube channel on July 19, 2010, just a little over two weeks after the CFA was opened for signature by the NBI Secretariat. The full interview can be seen here: <https://www.youtube.com/watch?v=2zzXLFKU0HM>.

²⁷³ Evaporation of Nile waters if stored in the Ethiopian highlands is reduced if compared to storing the water at the High Aswan Dam, but is still high.

²⁷⁴ The GERD was originally expected to be completed in 2017. The most recent estimates suggest that it will not be completed (and running) until 2022 (GCR 2018).

²⁷⁵ Based on the low flow of the Blue Nile, it is likely that the amount of energy that will be generated at the GERD has been overestimated (Whittington et al, 2014, p. 600).

²⁷⁶ The dam is estimated to cost US\$4.8 billion. It is funded through 'donations' by citizens, as well as through selling bonds to citizens and Ethiopian diaspora.

²⁷⁷ According to its 2015-2020 development plan, Ethiopia wants to raise power generation from 4,300 MW to 17,346 MW, using hydropower, wind and geothermal sources.

This chapter focuses on the ongoing project-specific negotiation process that started in 2011 between Egypt, Ethiopia, and Sudan, on the Grand Ethiopian Renaissance Dam (GERD). Because the number of actors (measured in terms of the number of states and individuals involved in negotiations) and degree of heterogeneity among them is lower, as compared to the CFA negotiations, one might expect the barriers to collective action²⁷⁸ to be lower and agreement to be more easily reached on the GERD. This may help explain why the countries were able to reach agreement on the Declaration of Principles on the GERD in a relatively short period of time (four years). Despite this initial success, however, the countries have not yet reached agreement on how to fill and operate the GERD to mitigate downstream impacts.

In Chapter 3, I argued that while procedural and institutional design are critical to reducing barriers to collective action, they will not alone enable collective action. In this chapter, I again highlight ways in which procedural interventions have reduced barriers to collective action – specifically, related to heterogeneities in information and preferences – and also examine ways in which context-specific factors add a layer of complexity to the negotiation process.

Part I of this chapter introduces the GERD negotiations in terms of the number of actors and degree of heterogeneity. It also discusses the importance of trust-building as a way of reducing the barriers related to heterogeneity among actors. Part II describes the GERD negotiations in terms of four major milestones: establishing the International Panel of Experts, signing the Declaration of Principles, joint fact-finding through the Tripartite National Committee, and working toward a filling proposal through the National Independent Scientific Research Group. For each milestone, I trace ways in which trust was lost – due to ‘inconsistencies’ in state behavior, lack of transparency, and what I refer to as ‘triggers’ – and rebuilt. Part III reviews the procedural interventions used to reduce barriers to collective action and to build trust throughout the process.

I. Pursuing Collective Action at a Smaller Scale

One approach to a seemingly intractable problem, such as that of achieving collective action on the Nile, is to redefine the way the problem is framed. If basin-wide collective action is not feasible, an alternative is to rescale the problem and pursue collective action among a few countries on a specific project. Arguably, collective action on a project like the GERD should be easier to achieve because there are fewer actors involved (i.e. only three states and fewer individuals) and, arguably, less heterogeneity among the actors.

1.1 GERD Negotiations: Few State Actors, Increasing Sub-State Actors

There are three key process-related differences worth noting between the GERD and CFA negotiation processes that affected the number of sub-state actors involved. First, whereas the CFA negotiations were fairly linear and professionally facilitated, the GERD negotiations evolved organically and are therefore comparatively more complex. At times, there are multiple deliberations and negotiations (on different aspects of the dam construction and Eastern Nile cooperation) occurring at the same time, but among different sub-state actor groups (Table 12). These layers interact with each other – sometimes enabling cooperation and other times creating additional obstacles. Second, as mentioned, more sub-state actors became involved in the negotiations over time due to the ‘securitization’ (i.e., equating water security with national security) of water, especially in Egypt. The Tripartite Ministerial Meetings started among the Ministers of Water of the three countries (3-party negotiations), but expanded to include the Ministers of Foreign Affairs (6-party negotiations) in 2015 and the Intelligence/Security apparatuses of the three countries in 2018 (9-party negotiations). This complicated the process – first, because it increased the number of sub-state interests represented in the negotiations and, second, because technical discussions of mitigating the dam were replaced by broader political discussions of entitlements to Nile water. Third, the Heads of State have been more directly involved in the GERD

²⁷⁸ In the case of the GERD, I define ‘collective action’ as the joint management of the cascade of dams on the Blue Nile. In other words, the three Blue Nile countries have to agree on the filling and operation rules for the GERD to reduce any negative impacts to dams downstream in Sudan (the Sennar, Roseires, and Merowe dams) and Egypt (High Aswan Dam).

negotiations. Their framing of the GERD – either as a source of cooperation or conflict – affected the GERD negotiations positively and negatively.

Table 12. Groups of Sub-State Actors Involved in GERD Negotiations

Date	Group	Number of Individuals	Description
March 26, 2012 – May 31, 2013	International Panel of Experts (IPoE)	2 national technical experts per country and 4 international experts.	IPoE tasked with reviewing the GERD project documents provided by Ethiopia. Recommended three additional studies: (i) water resources study; (ii) socioeconomic study; and (iii) environmental study.
Nov. 2013 - now	Tripartite Ministerial Meetings	3-party (Ministries of Water) from 2011-2015. 6-party (Ministries of Foreign Affairs added from March 2015). 9-party (Intelligence added in 2018). The TNC members and their Technical Support Teams also sometimes observe these meetings.	Egypt pushed for the inclusion of the Ministry of Foreign Affairs from the very beginning. Sudan and Ethiopia preferred to keep the conversations technical.
Aug 2014 - now	Tripartite National Committee (TNC)	4 technical experts per country and national support teams (size fluctuates between 6-30 individuals per country).	Established in Aug 25-26, 2014 to pick two international consultants that could conduct the studies suggested by the IPoE.
2015 - now	Heads of State	Egypt: Morsi until 2015; El-Sisi is current president. Ethiopia: Desalegn until 2018; Abiy Ahmed is the current Prime Minister. Sudan: Al-Bashir until 2019; leadership now uncertain.	* Signed the Declaration of Principles (March 23, 2015) * El-Sisi and Abiy Ahmed created the Tripartite Infrastructure Fund to benefit all three countries (June 10, 2018)
May – August, 2018	National Independent Scientific Research Study Group	Established on May 16, 2018 by MoW from the three countries. 5 modelers from each country assigned with specific task of suggesting specific filling plans for the GERD.	Report submitted on August 1, 2018. Egypt suggested several amendments to the proposal recommended by the NISRSG.

The GERD process started in November 2011, when representatives of the three Blue Nile countries (Egypt, Ethiopia, and Sudan) met to establish an **International Panel of Experts (IPoE)** to review the dam design documents and studies conducted by Ethiopia to assess the dam’s safety and downstream impacts. The IPoE, which was comprised of two experts per country (i.e., six national experts in total) and four international experts, started to meet in May 2012. The IPoE’s Final Report, released one year later, was accepted by Ethiopia and Sudan, but rejected by Egypt. As a result of saber rattling by Egyptian President Morsi, tension between the three countries quickly flared until early July 2013, when Morsi was overthrown and replaced by President El-Sisi. The Ministers of Water started to meet (**Tripartite Ministerial Meetings**) in November 2013 to discuss how to proceed with the IPoE’s Final Report, but reached an impasse over the countries’ different interpretations of the report. Negotiations ground to a halt in January 2014.

The negotiation process did not resume again until after President El-Sisi and former Ethiopian Prime Minister Haielemariam Desalegn met at the annual African Union summit in June 2014. The two Heads of State reiterated their countries’ commitment to cooperation and the Tripartite Ministerial Meetings resumed. In August of 2014, the three Ministers of Water agreed to establish a **Tripartite National Committee (TNC)** (comprised of four national experts per country) to select and oversee the work of two international consultants that would conduct the studies recommended by the IPoE. The TNC first met in September 2014 and reached

consensus on their Rules for Procedure and Terms of Reference for the consultants, but hit an impasse during their second meeting (in October) over the selection of consultants.

Five months later, the countries resumed discussions through the Tripartite Ministerial Meetings, but with one key change: the Ministers of Foreign Affairs were also now officially included in these meetings (i.e., now 6-party meetings). Under the leadership of the Ministers of Foreign Affairs, the representatives of the three countries drafted the Declaration of Principles (DoP), a general agreement to cooperate on the GERD, in an effort to rebuild trust in the region. Interestingly, many of the principles included in the DoP are very similar to what is included in the Nile Basin Cooperative Framework Agreement. They also included a stipulation that the reports suggested by the IPoE should be completed within 15 months of the DoP signing. This was to ensure that the studies would be done before the expected filling of the GERD began (July 2016²⁷⁹). This was signed on March 23, 2015, by the three **Heads of State** – El Sisi (Egypt), Desalegn (Ethiopia), and al-Bashir (Sudan). The DoP diffused regional tension and reflected political commitment, at the highest levels, to reaching a peaceful solution to the GERD conflict.

The TNC resumed their negotiations the following month, in April 2015, on selecting two international consulting firms to conduct the studies recommended by the IPoE. Four years later, these studies have yet to be completed. The firms released their initial ‘Inception Report’ in March 2017, outlining how the firms planned to proceed in their studies. The report was heavily disputed among the three countries and the TNC negotiations broke down again during the 17th round of talks in November of 2017. Despite repeated statements by the Heads of State of the three countries emphasizing their desire to cooperate, the negotiations hit another temporary impasse.

Negotiations did not resume again until April 2018. The Tripartite Ministerial Meetings resumed, this time with the Intelligence from each country participating (i.e., ‘9-party’ Tripartite Ministerial Meetings). Although the Ministers again reached a deadlock, they agreed to create a **National Independent Scientific Research Study Group**, a group comprised of experts and academics from the three countries, to work on developing proposals for filling the dam in time for the adjusted date of the first filling (July 2018).

The National Independent Scientific Research Study Group met for the first time at the start of June in 2018 and submitted their final report a few months later, on August 15. Egypt did not accept their recommendations and negotiations broke down again. At the time of writing this, in June 2019, the countries have not yet resolved the dispute. The process is currently at a standstill due to Sudan’s current political transition²⁸⁰.

1.2 Heterogeneity among States

Heterogeneity among the Eastern Nile countries at the start of the GERD negotiations was comparatively lower than the heterogeneity among the three countries at the start of the CFA negotiation process (Table 13). I first consider each type of heterogeneity on its own, and later consider combinations of heterogeneities.

Table 13. Degree of Heterogeneity at Start of GERD Negotiations

Type	Degree	Explanation
Capabilities	LOW	Differences in capacities was not raised as a major barrier, although the three countries agreed to bring in international

²⁷⁹ The date for the first filling of the dam was later pushed back to July 2018, and now to July 2020, due to delays in the GERD construction.

²⁸⁰ Former President al-Bashir was forced from his position in April 2019.

		experts and international consultants to conduct studies of the dam.
Information	HIGH	Egypt and Sudan initially did not have any information related to the GERD. Ethiopia shared information through the IPoE, and the three countries engaged in a joint fact-finding process to reduce remaining gaps in information.
Preferences	MEDIUM	Egypt and Ethiopia often started with opposing preferences on many issues (e.g., including the role of international experts, selecting consultants, and filling time for the dam). Most of these differences were tempered through deliberation and negotiation.
Beliefs	HIGH	Egypt and Sudan arguably perceive the Nile to be a matter of 'life and death', whereas Ethiopia perceives the dam to be its key to poverty alleviation and economic growth.
Identity	HIGH	Sudan and Egypt are culturally more similar to each other than they are to Ethiopia.

- Heterogeneities in Capabilities:** The difference in the countries' capabilities decreased significantly due to the work of the Nile Basin Initiative and, more importantly, through its Eastern Nile Technical Regional Office (ENTRO). Therefore, the heterogeneity in the capabilities of Egypt, Ethiopia, and Sudan was not as high at the start of the GERD negotiations (as compared to the CFA negotiations).
- Heterogeneities in Information:** Heterogeneity in information was a major obstacle in the negotiations on several fronts. First, when Ethiopia announced the construction of the GERD, Egypt and Sudan did not have any information about the dam. The countries attempted to address this through joint fact-finding through the IPoE and TNC. Second, several negotiators commented that countries have two sets of data: a real set, which is kept confidential, and a doctored set, which is shared. This information asymmetry reduces trust and contributed to several procedural breakdowns.
- Heterogeneities in Preferences:** Egypt and Ethiopia often had very different preferences when it came to the process (e.g., in terms of bringing in international experts, which consultants to hire, the Scope of Study for the reports, etc.) and the outcome (i.e. how the dam should be filled).
- Heterogeneities in Beliefs:** Egypt and Ethiopia both believe they have a right to Nile water. From Ethiopia's perspective, use of the Nile water is within its sovereign right, as 86 percent of the Nile water (as measured at Aswan) flows from the Ethiopian highlands. From the Egyptian perspective, use of the Nile water is within its historical right and a matter of life or death, as Egypt is 97 percent dependent on the Nile. Sudan falls somewhere between the two of these countries. It is also highly dependent on the Nile, but it also stands to benefit substantially from the GERD²⁸¹.
- Heterogeneities in Identities:** Egypt and Sudan are culturally more similar to each other than to Ethiopia. Although Egypt and Ethiopia had a strong connection through the Coptic Church, this was abruptly cut off due to Ethiopia's exclusion from the 1959 Nile Agreement.

²⁸¹ Sudan has not had the necessary infrastructure to utilize its full share under the 1959 Nile Agreement, which comes to 18.5 billion cubic meters per year. Approximately 5 BCM of this is unused by Sudan and flows downstream to Egypt. The GERD will regularize the flow of the Blue Nile and enable Sudan to use its full share, thereby substantively increasing its agricultural production.

Some types of heterogeneity – specifically, heterogeneity in capacity, information, and preferences – are more easily addressed through procedural interventions than others (beliefs and identities). In the case of the CFA negotiations, obstacles related to differences in identity were partially reduced through trust- and confidence building interventions in the negotiation process and supported through the work of the Nile Basin Initiative (NBI). In the case of the GERD, however, the Eastern Nile countries started their negotiations with a very low amount of trust. This has made some barriers more difficult to overcome. This case study will highlight trust building, breaking, and re-building efforts as they relate to creating, or overcoming, obstacles to collective action in a heterogeneous context.

1.3 Trust Building, Breaking and Re-building

“Lack of trust between Nile Basin countries is another problem. This is due to numerous reasons. All Nile history is a problem. Due to different histories and what diplomatic things from old times have increased the lack of trust. From my point of view, this is... not a minor problem, it’s a major problem... how to make more trust between these countries. It’s not easy.”

Former Egyptian Water Minister (Interview July 15, 2018)

Lack of trust was almost invariably the first thing negotiators pointed to when asked about obstacles to collective action in the Nile Basin. In the CFA negotiations, trust was built through repeated face-to-face interactions, regular opportunities to informally deliberate on positions and interests, demonstrating a willingness to engage and negotiate, and through the support of the international community and neutral facilitators. As successful as the two-track approach of the CFA and NBI was in terms of building trust and confidence in the region, the way in which the CFA negotiations ended, reduced trust. At one end, Egypt and Sudan interpreted the upstream countries’ decision to proceed without consensus as a reflection of their disingenuous desire to cooperate. Similarly, the upstream countries perceived Egypt’s attempt to renegotiate issues in the final year as the downstream countries’ attempt to stall the negotiations and maintain status quo. Whatever trust that remained among the countries was fractured even more less than a year later, when Ethiopia announced the unilateral construction of the GERD.

There are two competing narratives on the origin of the GERD. Recognizing that both of these narratives exist is critical to understanding why the GERD negotiations started in an environment of high mistrust.

1.3.1 *Competing Narratives on the Launch of the GERD*

The Egyptian narrative on the GERD starts on January 25, 2011, with the Egyptian revolution against former Egyptian President Hosni Mubarak. Many Egyptians point to the timing of the announcement – almost immediately after Egypt became immersed in the revolution – as a strategic move by Ethiopia²⁸². Seeing their downstream neighbor distracted by domestic instability, Ethiopia announced the construction of a large hydroelectric dam, without prior notification²⁸³:

When you look at Ethiopian behavior, you find that they change their behavior in a very short time. Look, that dam issue was under discussion between the three countries before 2011. So they notified us and Sudan that they would like that dam. When the revolution started here [in

²⁸² Interview with former mid-level Egyptian official in Ministry of Foreign Affairs: July 1, 2018. “They [Ethiopians] made use of the internal situation in Egypt because they announced the establishment of GERD in 2011, just three months after the revolution. And at that time, we were very busy with our internal affairs. And at that time also, the government and even the civil society didn't deal with the issue in the right way.”

²⁸³ Interview with Senior Egyptian official in Ministry of Foreign Affairs: July 13, 2018.

Egypt], they neglected notification completely. In international behavior, it means that it is on purpose, to change behavior like this. This is an aggression...

The arc of this narrative is punctuated by the fact that Ethiopia announced unilateral construction of the dam shortly after the conclusion of the Cooperative Framework Agreement negotiations. From the Egyptian perspective, this incongruity – i.e., first pushing for basin-wide cooperation through the CFA and then taking unilateral action in the absence of a basin-wide agreement or even prior notification – reflects a disingenuousness in the Ethiopian position on regional cooperation.

Although many Egyptians understand Ethiopia's desire for economic development, they often point to the large size of the dam (74 BCM) and its location²⁸⁴, to make the point that the dam was a political statement by Meles Zenawi²⁸⁵:

I don't blame Ethiopia for that. It's their right to do things the right way that they think. Without the GERD conflict... the West wouldn't have spoken a lot about Ethiopia. Meles Zenawi, before he died, he wouldn't have this great legacy as the leader who stood in front of Egypt and implemented a national project that will move Ethiopia from being an underdeveloped country to a developed country. It was used for political purposes inside Ethiopia and outside it. It gave Ethiopia a regional power and made it look like the African country that managed to say 'no' to Egypt and go behind their own development goals... it put them in a different place on the political level in the region and on the international level...

From the Egyptian perspective, the dam represents Ethiopia's desire and, more specifically, Meles Zenawi's desire, to rise as a major player within the region and continent. Even more than that, it reflects Meles's desire to make Ethiopia a counterweight to Egypt.

The Ethiopian narrative on the GERD starts much earlier, with a U.S. Bureau of Reclamations Study conducted in 1964 (see USBR 1964). Upset about the joint offer by the World Bank, United States, and United Kingdom to help finance the construction of the High Aswan Dam (Chapter 2), former Ethiopian Emperor Haile Selassie met with former U.S. Vice President Richard Nixon in March of 1957 and expressed his disappointment that the U.S. had not consulted Ethiopia before agreeing to fund the dam. A month later, an agreement was signed for the U.S. Bureau of Reclamation to conduct a comprehensive study of the agricultural and hydroelectric potential of the Blue Nile (Collins 2002, p. 170). The resulting seventeen-volume report, *Land and Water Resources of the Blue Nile Basin: Ethiopia*, 'identified thirty-three irrigation and hydroelectric power plants' along the Blue Nile and, more importantly, recommended the construction of four dams – at Karadobi, Mabil, Mendaya, and Border – to reduce the Blue Nile's annual flood²⁸⁶ (Collins 2002, p. 171). These plans were later updated but, for several reasons²⁸⁷, Ethiopia did not construct the cascade of dams.

²⁸⁴ The controversy over the dam's location stems from the fact that the GERD is located so close to the border with Sudan. Some interpret this as Ethiopia 'flexing' its muscles by 'weaponizing' the dam – if the dam were to fail, it could potentially destroy Khartoum. The counter to this is that the location was studied in earlier studies as the 'Border Dam'. Furthermore, the location of the dam effectively ensures that it will not be used for agricultural purposes (due to the elevation drop) and, arguably, will reduce the amount of future negotiation required if/when Ethiopia builds its planned cascade of dams upstream of the GERD.

²⁸⁵ Interview with former mid-level Egyptian official in Ministry of Foreign Affairs: July 1, 2018.

²⁸⁶ Combined, the four dams were estimated hold 73 billion cubic meters and generate 5570 MW (Stokstad 2016). This is equivalent to what the GERD is now expected to hold.

²⁸⁷ Reasons included lack of funding, domestic instability, and lack of international support (see Waterbury 1997, Waterbury and Whittington 1998, Arsano and Tamrat 2005, Waterbury 2002).

In 2005, confident that joint development was possible, the Ministers of Water Affairs of the three Eastern Nile countries launched the first phase of the Joint Multipurpose Program (JMP)²⁸⁸ under the Eastern Nile Subsidiary Action Program of the Nile Basin Initiative (ENTRO 2008). As an input to the JMP, the Eastern Nile countries asked the World Bank to commission an independent scoping study of the region to quantify the potential benefits and costs of different investments²⁸⁹ in three sub-basins of the Eastern Nile – the Baro-Akobo-Sobat, the Tekeze, and the Blue Nile. The scoping study recommended the construction of a large multipurpose storage dam on the Blue Nile (or Abbay) and considered the four sites identified earlier by the U.S. Bureau of Reclamations - Karadobi, Mabil, Mendaya, and Border²⁹⁰ (Blackmore and Whittington 2008). The study was the first time the Eastern Nile countries were presented with estimates of the quantifiable benefits of collective action (i.e. regional cooperation)²⁹¹. This was a very big step regionally and for Ethiopia, which agreed to have a project in its own territory be jointly identified, prepared, managed, and own²⁹². According to several sources (from all three countries), the three Eastern Nile countries agreed to invest in a multipurpose dam in the Eastern Nile. This changed in 2010, when Egypt and Sudan withdrew from the NBI (and the Eastern Nile Technical Regional Office, ENTRO).

At the time, Ethiopia was suffering from frequent blackouts and a significant energy shortage²⁹³, despite its construction of the Tekeze dam²⁹⁴. Delaying hydropower development was not an option. In early February, plans by the Ethiopian Electric Power Corporation (EEPCCO) to construct 'Project X', a hydroelectric generation plant projected to have a capacity of 6,000 MW, leaked into the press (Waldyes 2011). Ethiopia officially announced its plans to construct the Grand Millennium Dam, renaming it the Grand Ethiopian Renaissance Dam (GERD) shortly after.

In summary, the Ethiopian perspective²⁹⁵ emphasizes that the GERD was planned long before the Egyptian revolution. The Border dam appeared in the Ethiopian GTP 1, which was widely discussed among the public in June 2010 and approved by the Ethiopian Parliament in September 2010. Furthermore, although the official launch was not until March 2011, the contract with Salini was signed on December 31, 2010.

²⁸⁸ JMP ran until 2010. Interview (Aug 1, 2018): "It was a project that the Eastern Nile countries commissioned the study by independent experts like Blackmore and Whittington. They made a good study. This was an opportunity for the countries to really develop. Opportunity was lost because that interest did not continue the way it was when they first commissioned report. For some reason it did not materialize. It seems that the riparian countries did not have an equal interest or the understanding of the benefits, I don't know."

²⁸⁹ There were three criteria for JMP investments. First, the projects should be beneficial to all three countries. Second, the investments should be multipurpose. And third, the investments should not be anything that the countries would later regret (e.g., that may have negative long term consequences).

²⁹⁰ Interestingly, the report (Blackmore and Whittington 2008, p. 48) explicitly states that Border dam is less attractive than Karadobi due to 'less attractive elevations (inundating significant areas of arable land) and a higher surface area, which would lead to higher evaporation...' They considered Karadobi in their models simply because they had the most data on Karadobi due to a recent pre-feasibility study.

²⁹¹ Although the study concluded that more studies would need to be conducted of the individual dam sites, it emphasized that if the Eastern Nile countries did not use it more effectively (e.g., upstream storage in Ethiopia) they would lose much of it to evaporation ('use it or lose it'). It also recognized the inherent 'tradeoff between risks (reduced storage to mitigate deficits in low-flow sequences) and rewards (increased mean withdrawals)' but repeatedly reiterated that the benefits would outweigh the potential risks if the three countries jointly managed their investments and operation of their dams (p. 58).

²⁹² Interview with Ethiopian water expert on July 31, 2018.

²⁹³ "Ethiopia is in the throes of dire energy shortages (peaking at 200MW in 2009). The GoE was forced to cut electricity for 14 hours daily for 12 days each month during the summer and early fall 2009; a situation that reportedly cost the country's economy more than 1% of its GDP. Although Ethiopia has 783 MW of grid-based electricity, domestic peak demand has reportedly risen 24% beyond the national utility's supply." Source: Addis Ababa, "Oct-Nov Regional Environment Newsletter, East Africa." Wikileaks Cable: 09ADDISABABA2843_a. Dated December 3, 2009.

²⁹⁴ Ethiopia constructed the Tekeze dam, a hydropower dam, in November 2009 and had plans to construct two other plants (Tana Beles and Gilgel Gibe II) to generate energy by March 2010.

²⁹⁵ Email exchange on July 1, 2019.

1.3.2 Mistrust and misperception as major barriers to collective action

The dam's 'origin story' is only one example within the GERD negotiations in which differences in perceptions of the same facts or events reflect the breakdown in trust. When asked about obstacles to the GERD negotiations, an Ethiopian water expert commented²⁹⁶,

[Y]ou see mistrust between the countries... if there is sufficient trust between the countries, sufficient confidence, there are sufficient technical options to increase the amount of water available in the system. But the problem is there is no trust. Currently, there are about 20 billion cubic meters lost to evaporation from the dams in Egypt and Sudan. It's possible to cut this down to 5 billion if the countries trust each other. That means an additional 15 BCM of water would be made available to the countries. So there are several options. Technical options to increase the amount of water available for the demand of the public, but it needs a high level of trust among the countries. So trust and confidence are the biggest problem. Then there are other issues. I mean the struggle for power, for dominance in the region. Misconceptions also. The countries are not understanding each other's needs and each other's concerns... You can see now, if you take the GERD, in Ethiopia they consider it one of their strategies to go out of poverty. And if you go to Egypt they will tell you that it is a political project that Ethiopia is constructing to water starve Egypt. So this is a very different perspective and different understanding of other's concerns.

Similar statements were reiterated by many negotiators from Ethiopia and Sudan²⁹⁷: if there is trust and mutual understanding, the countries will share information openly, find ways to create additional value through the co-operation of the GERD and the dams downstream, and improve the region's water security. In the absence of trust, however, (technical) solutions are not politically viable.

The easy, or obvious, answer to explaining why collective action has not yet been achieved on the GERD is that the countries are too far apart in their beliefs about how the Nile water should be apportioned and do not trust one another. If that is the case, collective action cannot occur on the Nile until a sufficient amount of trust is built or the beliefs of the countries align (i.e., that their collective interest is the same as their individual interests). But then what is a 'sufficient' amount of trust?

'Trust' is a nebulous, and problematic, variable to consider as an input in transboundary water cooperation. First, it is used as a catch-all for trust among many different sub-state actors. For example, a key difference between the GERD negotiations and the earlier CFA negotiations is that the media coverage of the GERD negotiations was much higher, thereby making public perception more important. When GERD negotiators refer to a lack of trust as a barrier to collective action, they are referring to trust among the negotiators, but also to trust among the negotiators and their publics, the negotiators and their Heads of State, and between the publics and their Heads of State. Therefore, efforts to 'build trust' to enable collective action must address all of these layers (Chapter 5). Second, 'trust' cannot be quantifiably measured at a specific point because it is always fluctuating and subjective²⁹⁸. It may instead be more helpful to think about how and why mistrust creates additional barriers to collective action. For example, a country that mistrusts its neighbors may

²⁹⁶ Interview: July 31, 2018.

²⁹⁷ Interestingly, there seems to be a divide within Egypt among those with a technical understanding of the dam, who believe that technical solutions do exist, and those who focus on the political side, who firmly believe that there are no resolutions to the conflict unless Ethiopia recognizes Egypt's share of Nile water as described by the 1959 Nile Agreement. This tension between political and technical realms came up repeatedly during my interviews and will be further discussed in Part III of this chapter.

²⁹⁸ I identify events or actions that built or reduced trust based on what negotiators referred to in their descriptions of the GERD negotiations and analyses of why the negotiations have not yet reached a successful conclusion. My identification of the timing of the announcement of the GERD's construction as being a factor that undermined Egyptians' trust towards Ethiopians is due to multiple interviews in which respondents raised the issue in their description of the negotiations.

be hesitant to share data with them – this will create additional barriers to cooperation. In my discussion, I point to factors that helped build trust and hurt trust (as identified by the negotiators), but I do not try to quantify trust.

In this chapter, I try to delineate where mistrust among the Eastern Nile countries stems from. Some of it relates to heterogeneities in identities and the histories of the countries. However, assuming that some base level trust was built among the countries through the CFA negotiation process and the work of the NBI that, for a time, enabled joint planning of projects, what accounts for the high levels of mistrust within the GERD negotiations?

I highlight three factors that have threatened to break trust throughout different points of the GERD negotiation process – lack of transparency, perceived inconsistency in state positions, and what I refer to as ‘triggers’. Information asymmetries and lack of transparency may be, or at least may be interpreted as, a conscious effort to deceive, thereby reducing trust. Inconsistencies in actions and words can also be perceived to be reflections of a disingenuous effort to cooperate. For example, Ethiopia’s announcement of unilaterally constructing the GERD after spending a decade trying to reach a basin-wide cooperation, is perceived by some Egyptians and Sudanese as being inconsistent, thereby undermining their trust in Ethiopia’s intentions. Finally, I refer to a set of ‘triggers’, or stories and statements used by one country that trigger a larger conversation that reflects heterogeneities in beliefs. As will be seen in the case of the GERD, the 1959 Nile Agreement allocations – 55.5 BCM for Egypt and 18.5 BCM for Sudan – have become triggers in the Eastern Nile. References to these numbers, even by individuals outside of the Basin (i.e., that have no stake in the Nile waters) cause conversations related to the Nile or GERD to break down.

Building trust is difficult. Rebuilding trust after it has been broken is even more difficult. In the absence of trust, heterogeneities pose greater barriers to collective action than when actors trust each other’s intentions. In my analysis of the GERD negotiations (Part II), I have tried to capture sources of mistrust and ways in which the countries have tried to rebuild trust, in part, by addressing some types of heterogeneity.

II. Negotiating on the Grand Ethiopian Renaissance Dam (GERD)

“[W]e are determined to eradicate poverty from our country... [b]efore we mobilized our efforts to eradicate poverty, centuries of impoverishment curtailed our development and restricted us from exercising our right to use the resources of our own rivers. Now, thanks to the dedication of our peoples, we have safely put those times behind us. We are close to opening a new chapter through the realization of our Millennium project. Henceforward, nothing can stop us from exercising our rights...”

Former Ethiopian Prime Minister Meles Zenawi (April 2, 2011)

Ethiopia officially announced plans for the construction of the Border Dam on the Blue Nile near the border with Sudan in March of 2011. The dam was then renamed the Grand Millennium Dam on its inauguration on April 2, 2011. In his speech at the inauguration ceremony, former Ethiopian Prime Minister Meles Zenawi emphasized the dam’s importance to the country: “By mobilizing to build this Grand Millennium Dam with our own resources we will derive significant economic benefits. We will also convey two messages... the first message is that we not only have a plan, but we also have the capacity to assert our rights. The second message we want to send is that the intention to exercise our rights to use our own rivers is in order to fight poverty in our own country.”

The dam represented a ‘new chapter’ in Ethiopia’s development. Rather than being pictured as part of the ‘starving Horn of Africa’²⁹⁹, Ethiopia would become an engine for economic growth. Meles’s speech emphasized Ethiopia’s rise on one hand, and his desire to use Nile water without having a negative downstream impact³⁰⁰ on the other. By the end of the month, on April 20, the dam was again renamed. This time, with a name that fully reflected Meles’s aspirations for the dam as a catalyst to Ethiopia’s resurgence: the Grand Ethiopian Renaissance Dam (GERD) (Berhane 2011).

Once complete, the GERD will be the largest hydroelectric dam in Africa³⁰¹. It will be 145 meters (or 476 feet) high and 1,780 meters (or 5,900 feet) long. It includes a saddle dam, about 5 km (or 3 mile) long and 50 meter (164 feet) tall, that support the main dam and reservoir. When it was first designed, it had a capacity to hold up to 63 BCM (Berhane 2011). This would make the reservoir approximately double the size of Ethiopia’s largest natural lake, Lake Tana. Within the next few years, the total storage volume expanded to 74 BCM³⁰², with an active storage of 59 BCM (IPoE 2013). Early designs also called for fifteen turbines total, with a combined installed generating capacity of 5250 MW. By late March, the design changed to include a 16th turbine, for a combined installed generation capacity of 6,000 MW³⁰³.

²⁹⁹ An Ethiopian water expert, emphasized this as a key point that Egyptians do not understand about the GERD’s significance to Ethiopians (Interview: July 31, 2018): “Egyptians do not understand the need of Ethiopians to go out of poverty. The need of Ethiopians to go out of the humiliation of being starved and standing in front of international community requesting food aid.”

³⁰⁰ In his speech, Meles continued by emphasizing that the dam would not have a negative impact on Ethiopia’s downstream neighbors: “It shows no malice to any of our neighbors. Among the concerns we factored in when we made the decision to build the Nile Dam with our own resources, one was to avoid any negative consequences for our neighbors and indeed to offer positive benefits for all of them.”

³⁰¹ Currently, the work on the GERD is 66 percent completed. Approximately 80 percent of overall dam (dam, saddle dam) and spillway have been constructed, but only 23 percent of the electromechanical and hydraulic steel structure work has been completed. Source: *AllAfrica.com*. 2019. “Ethiopia’s Dam on Nile Progressing,” March 22, 2019.

³⁰² The size of the reservoir is a major point of contention among the Nile countries. The original Border dam had a storage capacity of 14 BCM. The GERD’s storage capacity of 74 BCM is exactly equal to the amount of Nile water allocated to Egypt and Sudan under the 1959 Nile Agreement. For comparison, the High Aswan Dam can store 162 BCM and Sudan’s largest dam, the Merowe Dam, can store 12 BCM.

³⁰³ This has recently increased to 6,450 MW.

The total cost is estimated to be US\$4.7 billion (Than 2011) and will be unilaterally covered by Ethiopia. Approximately eighty percent of the funds that pay for the dam comes from government funds. The rest comes from the people – one month salary from civil servants every year, bonds sold to national residents and diaspora, and other contributions made in kind³⁰⁴. The enthusiasm by which Ethiopians contribute to the dam is a deep source of pride³⁰⁵ as the GERD has become a symbol of national identity and unity³⁰⁶ despite ongoing internal ethnic tensions. The GERD is one component of a planned cascade of dams that will collectively generate more than 15,000 MW of electricity³⁰⁷ and is central to Ethiopia’s aspiration to be a Middle Income Country by 2025.

The dam was initially expected to be completed in 2015³⁰⁸. Therefore the Eastern Nile countries initially started the negotiations believing they had little over three years to reach an agreement on the filling and construction of the dam. This pressure helped draw both Egypt and Sudan to the negotiating table³⁰⁹. Ethiopia also had an interest in proving to its neighbors and to the international community that it would work to avoid conflict over the dam.

...

Unexpected unilateral construction of a dam by an upstream country could easily be a flash point that leads to conflict. This has not been the case for the GERD. The Eastern Nile countries are committed to reaching a negotiated agreement on the dam, but their pursuit of the common good is not without difficulty. The GERD negotiation process is fragile. Throughout the process, the countries hit temporary impasses that reflect the difficulty in overcoming many barriers related to heterogeneity, especially in the absence of trust³¹⁰. There has so far always been something that has helped them continue in their path – political commitment at the level of the Heads of State, demonstrated willingness to take each other’s positions and interests into account, creative solutions proposed by one of the three countries, etc. In an attempt to delineate the barriers

³⁰⁴ Interview with Ethiopian water expert (March 26, 2015): “There are two types of payments. The first one is donation, the second one is purchase of bond. So you buy a bond and it will be paid after several years. Civil servant is paying like a month salary every year. Businessmen buy bonds and do donation. Farmers, they also pay in terms of money and also in terms of their products... This amount is expected to cover about 20% of the investment. The remaining 80% will be from governmental budget.”

³⁰⁵ Interview with Ethiopian water expert (March 26, 2015): “Once I went with the Minister, downstream of the dam, to discuss with the community, and actually they stopped us... We asked them what benefit they’re expecting [from the dam]... they said infrastructure, health, power, and they say in the future when the project is completed, there will be a very big city. Then we asked them what they did for the project. They said they contributed in such a way that a person who has four goats, gave one. That means they contributed 25% of their property. Then the Minister said, ‘what else?’ Then they said that they offered the project [manager] free labor on Saturdays and Sundays, but the project [manager] didn’t respond and they even asked us to interfere. Then again, the Minister said ‘what else?’ And they said, whenever we see a stranger, we ask them and if we suspect, we take them to security. And they told us, that’s why they have stopped us. And so this is the other form of support.”

³⁰⁶ There are few indications that the dam is not supported nationally. It is unclear whether this is because the dam is genuinely supported by the majority of Ethiopians, or because critiques of the dam were suppressed: “Norway’s *Development Today* magazine quoted Kjetil Tronvoll of Oslo’s International Law and Policy Institute as saying that government employees are being pressed to donate one month’s salary to the dam and, when people protested, they were arrested. A journalist who wrote an article criticizing the fund-raising methods, Reeyot Alemu, was arrested, tried for terrorism and sentenced to two years’ jail, according to the Committee to Protect Journalists.” (Source: Associated Press. 2013. “Egypt Fears Grow as Ethiopia Builds Giant Nile Dam,” May 30, 2013.)

³⁰⁷ In late June, Ethiopia announced plans to build four additional dams, or a cascade of dams, on the Blue Nile to work in conjunction with the GERD. Meles’s plan was to produce electricity to sell to regional markets (Than 2011).

³⁰⁸ This expected completion date was later pushed to 2017 and, most recently, to 2022 (GCR 2018).

³⁰⁹ From a realist prescriptive lens, Ethiopia’s unilateral construction of the GERD was a counter-hegemonic move that would threaten the status quo.

³¹⁰ For example, although the work of the IPoE was meant to reduce information asymmetries, the IPoE Final Report was interpreted differently by the countries.

to collective action and ways to overcome them, I describe obstacles (as described by the negotiators) in each part of the process and ways in which these obstacles were overcome or persisted.

My intention in conducting this detailed analysis is two-fold. First, many studies that consider when and why countries cooperate, inadvertently describe state interests as though states are unitary, rational actors. They are not. Political change, tension among sub-state interests, and public perception all affect how a state ‘acts’. I have tried to capture how these factors contributed to ‘irrational’ or inconsistent state behavior in the GERD negotiations because this behavior is sometimes misinterpreted by other states as reflecting a disingenuous desire to cooperate, thereby undermining trust. At times, negotiators communicated with their counterparts from other countries to explain these inconsistencies in order to prevent the negotiation from being derailed. In addition, some inconsistencies in state behavior may, in fact, be reflections of what Robert Putnam (1988) refers to as ‘two-level games’, or the interaction between domestic and international politics³¹¹. In the case of the GERD, I will argue that each of the Heads of State of the three countries is playing a two-level game and, as a result, their country’s actions seem inconsistent at times. My second intention is to discuss the growing trend of securitizing water. On one hand, securitizing and politicizing water may be a positive trend if it increases the political will to reach a resolution through cooperation, rather than conflict. On the other hand, it can further complicate negotiations in three ways: it increases the sub-state actors involved, pushes negotiations from the technical realm to the political realm, and increases the influence of the media. Each of these may create additional barriers to collective action.

I describe the negotiations chronologically for the sake of clarity, but I want to highlight three major barriers that persist throughout the negotiations. First, there is no consensus in Egypt on how best to address the dam. This is evident from the large number of sub-state actors that have been involved in the negotiations from the start of the process and inconsistencies in what different levels of sub-state actors communicate at different times. Second, public perception of the dam – in Egypt and Sudan – has been a problem throughout the GERD process. Media plays a critical role in affecting public perception, as do statements by the Heads of State. Third, trust is constantly broken – through inconsistent state behavior, lack of transparency, and ‘triggers’ that reflect underlying heterogeneities in beliefs about the Nile.

I have organized my description of the GERD negotiations around four major milestones of the negotiations: (i) study of the dam conducted by the International Panel of Experts; (ii) signing of the Declaration of Principles by the Heads of State; (iii) selection of the consultants (to conduct the IPoE studies) by the Tripartite National Committee; and (iv) filling schedule proposed by the National Independent Scientific Research Study Group. Each of these milestones broadly reflects a slow process of consensus-building, in which several procedural interventions were used to bring the countries closer in terms of their preferences (or at least in their officially stated preferences).

2.1 Reducing Heterogeneity in Information and Capacity: the International Panel of Experts

Considering where the countries were starting from – in the midst of a political transition in Egypt, high mistrust (at least from the Egyptian and Sudanese perspectives), and acute information asymmetry (i.e., Egypt and Sudan knew nothing about the dam design) – the fact that the three countries were able to start a cooperative process within the year is a major accomplishment. This section describes how the countries overcame these barriers to establish the International Panel of Experts.

2.1.1 Cooperating in the Midst of Political Transition: Inconsistencies in State Behavior

³¹¹ Putnam (1988) describes the two-level game as the following: “At the national level, domestic groups pursue their interests by pressuring the government to adopt favorable policies, and politicians seek power by constructing coalitions among those groups. At the international level, national governments seek to maximize their own ability to satisfy domestic pressures, while minimizing the adverse consequences of foreign developments.”

In the aftermath of the 2011 Egyptian revolution, Egypt scrambled to react appropriately to Ethiopia's announcement of the GERD. A few weeks after the GERD's inauguration, an Egyptian Public Diplomacy Delegation³¹² visited former Ethiopian Prime Minister Meles Zenawi (hereafter referred to as Meles) in Addis Ababa. The following month, Former Egyptian Prime Minister Essam Sharaf³¹³ traveled to Addis Ababa³¹⁴, Ethiopia and then hosted Meles in Cairo in September. Despite Egypt's initial surprise at the announcement of the GERD, Sharaf made a point to express his support for Ethiopia's right to develop and for regional cooperation on the dam: 'this dam, in conjunction with the other dams, can be a path for development and construction between Ethiopia, Sudan, and Egypt' (*Al Jazeera* 2011). In short, at least officially, this new Egypt³¹⁵ was taking steps to signal that it wanted to cooperate with its African neighbors. However, as the process continued, it became clear that there was no consensus in Egypt on how to deal with the dam and that it was perceived, by many Egyptians, to be an existential threat to Egypt's survival.

Meles tried to rebuild trust in the early stages of the GERD negotiations in three ways. First, he similarly emphasized his desire to cooperate and achieve a mutually beneficial outcome³¹⁶. Second, he delayed ratification of the Nile Basin Cooperative Framework Agreement in response to a request by the Egyptian Public Diplomacy Delegation³¹⁷. Third, he invited the downstream countries³¹⁸ to join the Ethiopians in forming a Panel of Experts to collectively review the dam design documents in order to assure them that there would not be any significant harm downstream³¹⁹.

³¹² Several interlocutors noted that a public diplomacy delegation traveled to Ethiopia in April of 2011 to use multi-track diplomacy to strengthen ties between the two countries. The delegation included more than 50 reporters, artists, entrepreneurs, and politicians. "Undoubtedly, the continuous serious dialogue that aims to reach suitable solutions for both sides and the active visits of public diplomacy delegations between the two countries shall play an important role in correcting disseminated misconceptions, which claim that Egypt does not want Ethiopia to achieve development and that the latter seeks to deprive Egypt of the Nile water. However, the most important issue is not to confine the Egyptian-Ethiopian relations to the waters of the Nile or the Renaissance Dam." (Source: Ahmady, Mostafa. 2015. "The Ethiopian Public Diplomacy Delegation to Cairo." *African Perspectives*, 2015.)

³¹³ Essam Sharaf was Prime Minister of Egypt from March – November 2011. He was appointed Prime Minister shortly after the Egyptian revolution against Mubarak and resigned on November 21, 2011, a week before Egypt's parliamentary elections.

³¹⁴ According to a Sudanese senior official of the Ministry of Water (Interview: July 26, 2018), Essam Sharaf originally approached Meles Zenawi to handle the issue bilaterally. Meles Zenawi suggested including Sudan since it is also downstream of the GERD.

³¹⁵ Former Egyptian leaders – specifically, Sadat and Mubarak – often made public statements suggesting that they would go to war if Egypt's share of the Nile were ever threatened.

³¹⁶ Meles stated, '[t]he future is a new relationship between Ethiopia and Egypt based on a win-win strategy. The past is a past based on a zero-sum game. That is gone. There is no going back' (*Al Jazeera* 2011).

³¹⁷ Despite not having any authority, the Egyptian Public Diplomacy Delegation asked Meles to give Egypt time to form a new government and return to the Nile Basin Initiative. This would have made data-sharing among the countries much easier because they would have a system in place. Although Ethiopia had already signed the CFA, the Parliament would need to ratify it for it to become legally binding. Meles's decision to delay ratification was significant because it reflects a commitment, at least by Meles, to try to move forward with Egypt as a partner in the region. Interview with Ethiopian on July 31, 2018: "[w]hen the [Egyptian] public diplomacy came to Ethiopia and requested information, the then prime minister told them they could come back to NBI, sign the CFA, and it would be possible to trigger the article about exchange of information about planned measure... Then they said, "we don't have a permanent government, this is a transitional government. And the transitional government does not have a mandate to make a decision on whether Egypt should sign the CFA or not." So they asked him to suspend the ratification of the CFA until Egypt establishes its parliament. They even said [it would happen] within three months. But Ethiopia suspended the ratification for about a year, until they have a permanent government and parliament."

³¹⁸ 'Originally we had the IPOE, which has been called for by Ethiopia. We thought this is a very good start. And they called on it for good faith.' (Sudanese negotiator: Interview on July 23, 2018).

³¹⁹ A fourth way would have been to invite Sudan and Egypt to help finance the dam so that the three countries could own, co-design, and co-operate the dam. However, by this point, Egypt and Sudan had already been given at least two separate opportunities to work with Ethiopia in constructing the dam, but had declined.

The initial idea for the Panel of Experts was to include technical representatives from each of the three countries to review the design documents of the GERD, share information, and conduct studies in an effort to calculate the benefits and costs of the dam to each of the three countries (IPoE 2013). The inclusion of international experts on the Panel was to allay Egyptian concerns that the countries needed additional technical capacity to ensure proper review of the dam documents. Initially, Egypt and Sudan pushed to include international institutions (e.g., the World Bank), but Ethiopia suggested that they instead hire individual experts. In the end, the International Panel of Experts was comprised of four international transboundary water experts and six national experts (two nominated by each country)³²⁰.

The three countries came together in November 2011 to discuss how the IPoE would be established³²¹ (Interview: July 27, 2018):

Many people came from different sectors. Particularly, from Egypt and Ethiopia. The participants from Sudan were only two. The participants from Egypt was 15. And from Ethiopia, you don't need to how much. You just ask yourself - how many from Egypt? Then the same number usually come from Ethiopia... so if 15 from Egypt, then 15 from Ethiopia. And maybe 1:1 correspondence. This number from intelligence [in Egypt], then this number from intelligence [in Ethiopia].-So from Egypt, despite this large number, only two are coming from the Ministry of Water Resources. Some from the intelligence also... From the Egyptian side, the Minister was very open and it seemed he wanted to start a new era of cooperation and he mentioned a very nice verse... [b]ut I remember very clearly, when the Ministers went out, one of the senior members of the Egyptian team, he yelled "don't listen to the Ministers!", and I think particularly, he meant his Minister... [t]hat was the situation in Egypt at the time. Egypt was in a transformation stage and it was not consistent and you can see now, the team leader, the Water Minister, is saying very open words... but the members of the team are not... So that meeting ends at this level. You don't feel there is consistency among, at least on the side of Egypt... I remember one of the participants, a lady from the Ministry of Foreign Affairs, spoke with Professor Seif and said, 'why don't we stop this project?' Maybe she was joking, but this was the spirit at the start of the meeting.

This description reflects three broader trends that characterize the GERD negotiations. First, although the meetings were initially led by the Ministers of Water of the three countries, they included many different actors – including water experts, politicians, and intelligence – reflecting the fact that transboundary water management in the Nile is not simply a technical matter. Relatedly, as reflected by the distribution of participants, representation by the Ministry of Water in Egypt was low in comparison to others (e.g., Foreign Affairs and Intelligence). This trend has continued – several participants have noted that as the GERD negotiations have proceeded, the presence of the Ministry of Water in Egypt has consistently decreased³²², reflecting the general trend of politicization of the GERD issue, especially in Egypt. Third, these early meetings – and several others in the future – reflect a lack of consensus, especially within Egypt, on how to address the

³²⁰ The IPoE members included Dr. Sherif Mohamady Elsayed and Dr. Khaled Hamed (from Egypt); Eng. Gedion Asfaw and Dr. Yilma Seleshi (from Ethiopia); Dr. Ahmed Eltayeb Ahmed and Eng. Deyab Hussein Deyab (from Sudan); and Dr. Bernard Yon (Environment Expert), Mr. John D. M. Roe (Socioeconomics Expert), Mr. Egon Failer (Dam Engineering Expert), and Dr. Thinus Basson (Water Resources and Hydrological Modeling Expert).

³²¹ The three countries negotiated on what to include in the Terms of Reference and Rules for Procedure for the IPoE. Meles Zenawi passed away on August 12, 2012. Several interviewees have postulated that the GERD negotiations would have been handled more successfully under his leadership.

³²² Interview with Sudanese Water Ministry official on July 23, 2018 in which he mentioned that the Minister of Water plays a very small role in Egypt's negotiation team now and raised the fact that Egypt's Minister of Water has changed several times since 2011.

dam³²³. Sub-state actors within Egypt have conflicting views on whether or not a solution exists to the GERD and the extent to which the Nile water 'belongs' to Egypt.

2.1.2 *Diverting the Blue Nile and the International Panel of Experts Final Report*

Over the next year (May 2012 – May 2013), the IPoE held six meetings and conducted four site visits to the GERD (IPoE 2013). Despite these efforts, trust among the Eastern Nile countries was again tested when Ethiopia diverted the Blue Nile 50 meters from its natural course on May 28, 2013 to allow for construction of the dam. Sudan and Egypt initially panicked, concerned that the diversion would significantly reduce the flow of the Nile downstream³²⁴.

In an effort to allay downstream fears about the dam and the diversion, Ethiopians opened the dam for a site visit by the IPoE and reporters from the downstream countries. Their hope was that their transparency would be recognized as a genuine desire to cooperate and that it would put the minds of the Egyptian representatives, media, and public (through the media) at ease. They were disappointed to find that this was not the case³²⁵:

[T]hree of them [Egyptian journalists] were with me and when we reached the dam site, their first question is, 'beyond which mountain is the river diverted?' And I said, 'wait for a minute.' So I asked Engineer Simegnaw [Bekele, the Project Manager of the GERD from 2011 - 2018] to take us to a place where you can see the diversion. I took them and showed them and they couldn't believe that the diversion that nearly took them to war was just moved 50 meter, one kilometer back. So I asked the journalist to take a picture and show the public. But they never showed the public that this is the diversion. So this [difference in public perception] is actually one of the big gaps we have.

Heterogeneities in preferences and beliefs, especially among the publics of the three countries, was often raised as a major barrier to cooperation on the GERD. Ethiopians initially tried to change the public perception in both countries. In Sudan, they organized public consultations³²⁶ and, in the case of Egypt, they opened the dam to the IPoE and Egyptian media. Their perception was that although there was initial resistance from their counterparts in both countries, presumably out of fear of how the public might react to anything resembling

³²³ In early 2011, former Egyptian Minister of Water and Irrigation, Min. Mohamed Nasr El Din Allam, said that construction of the GERD 'would lead to political, economic, and social instability... [m]illions of people would go hungry. There would be water shortages everywhere' (Kelley and Johnson 2012). This discrepancy between Egypt's official stance (which was towards cooperation) and critiques by well-known water experts caused confusion among the Egyptian public.

³²⁴ Hyder Yousef, former head of the Sudanese Nile Water Sector, spoke against the dam soon after the diversion: 'it remains irresponsible for Ethiopia to build Africa's biggest hydropower project on its most contentious river with no public access to critical information about the dam's impacts... The consequences for Ethiopia's downstream neighbors could potentially be catastrophic' (*The Michigan Citizen* 2013).

³²⁵ Interview with Ethiopian water expert (July 31, 2018).

³²⁶ Interview with Ethiopian water expert (July 31, 2018): "I remember in 2011, in November, we went to Sudan with the Minister to have a public consultation. Originally, the Ministers in Sudan and high officials, were not very hesitant - they supported and facilitated everything. But when it approached, they got frustrated, because they thought that if something goes wrong, they thought it would fire back and they even asked us to cancel the program... They want to hide behind this public perception. But still we went ahead. The program was organized Ethiopian embassy and by one university in Khartoum and we had about 800 people attending and most of them were those opposed to the dam... so we met for the whole day, from eight up to six and when we walked out of that conference room, it was reported that 90% of the participants changed their mind. That move gives the officials in Sudan to stand out and say the project will not affect us, it will give us a huge advantage. Now if you go to Sudan, everybody can openly speak, even the President, can speak out in support of the dam."

support for the dam, Sudan's public was more readily convinced that the benefits of the dam outweighed the costs. Egypt negotiators, on the other hand, continued to remain in fear of disappointing the public³²⁷.

In the end, the IPoE had three major achievements³²⁸. The first was in selecting the international experts for the Panel. The second was in reaching consensus on the Final Report, released on May 31, 2013, and the three parts within the report on dam safety³²⁹, water resources and hydrology, and environmental and socio-economics. The IPoE's Final Study recommended three additional studies³³⁰ on the potential effects of the dam on Egypt and Sudan: a water resources study, an environmental impact analysis, and a socioeconomic impact analysis. The third was in outlining the details of the scope of the future studies.

When the report was finally released, it was immediately accepted by Sudan³³¹ and Ethiopia, and rejected by Egypt (*The Cairo Post* 2015). Egypt's opinion on the IPoE Report was that more studies needed to be conducted before construction of the dam resumed. Ethiopians, on the other hand, felt that the necessary impact studies were already conducted under previous studies (e.g., by the Army Corps of Engineers, under the Joint Multipurpose Program, etc.) and that Egypt was just trying to delay the construction of the dam.

2.1.3 Loss of Trust: Saber Rattling by Morsi

When he first rose to power, former Egyptian President Mohamed Morsi made a general effort toward cooperation. He publicly stated no objection to upstream development as long as the projects would not 'affect or damage Egypt's legal and historical right' (*BBC* 2013). Things quickly changed, however, after Ethiopia's diversion of the Blue Nile and the release of the IPoE report on May 31, 2013.

³²⁷ The gap between Egyptian public perception of the dam and reality is quite large and frequently raised by negotiators from all three countries as a major obstacle in the negotiations. Interestingly, during one of my field visits to Cairo, an Egyptian friend pointed to the banks of the Nile River and traced the decrease in flow of the Nile to the diversion from 2013. This is unlikely for two reasons. First, because the High Aswan Dam has over-year storage. Therefore any reduction upstream would not become immediately apparent downstream. Second, because even though the Nile was slightly diverted, the flow of the Blue Nile was not cut during construction. The public perception that construction of the GERD has already reduce Nile water flow is still high in Egypt. A Sudanese negotiator similarly reflected on how the general public misunderstood the diversion of the Blue Nile and assumed that Ethiopia had stopped the flow altogether (Interview: July 23, 2018).

³²⁸ Interview with Sudanese member of the IPoE on July 27, 2018.

³²⁹ Dam safety was a major concern, especially for Sudan. Several senior officials with Sudan's Water Ministry described how they worked closely with Ethiopia in parallel to the IPoE process to improve the dam's safety and that Ethiopia integrated all of their suggestions (Interview: July 26, 2018). This was confirmed by Ethiopians involved in the process.

³³⁰ The IPoE's recommendations were largely because the studies conducted by Ethiopia were incomplete in that they did not include data from Egypt or Sudan because Ethiopia did not have access to their data at the time of conducting its initial studies. The IPoE suggested redoing these studies with data from all three countries. Interview with a Sudanese representative of the IPoE: July 27, 2018: "[T]he IPoE said that these studies, particularly these two, have to be done on first-hand information, coming from Sudan and Egypt. And it cannot be done, unless the three countries do it together. Each country - Sudan and Egypt - have to provide the information they have on environment and socioeconomic aspects and those are studied... For the water resource study, they want the whole system to be studied together so that they can understand what the original system will be, and how it will be after the GERD, and how it can be adjusted."

³³¹ Sudan's support of the IPoE Final Report may be a reflection of the fact that Ethiopia had integrated many of suggestions Sudan had given in terms of altering the design of the dam to ensure its safety. These included converting the saddle dam from being rock-filled with asphalt surface to a concrete dam and widening the dam. Interview with a Sudanese representative of the IPoE: July 27, 2018: "Sudan has played a major role in making enhancements... we changed the type of the dam. It is something called asphalt surface. Instead of being rock-filled with asphalt surface, we made it concrete structural dam [Saddle dam]... So this is one improvement which Sudan had suggested, and Ethiopians have accepted that. And they don't feel suspicious, because we are already, all the time, we are giving the panel better suggestions."

On June 3, 2013, Morsi called a meeting to discuss the IPoE report. Unbeknownst to the participants³³², the meeting was live-streamed and they were caught on camera suggesting several ways of dealing with the GERD. These suggestions included, ‘sabotaging the dam, interfering in internal political disputes in Ethiopia, or bribing local tribes’ (Ezzat 2013). This hardline stance by Egypt was underscored one week later by Morsi in his speech to Egypt’s Islamist parties. Morsi rattled his sabers during the speech, starting with an incendiary first line that assumed Egypt’s ownership of the Nile: “If Egypt is ‘the gift of the Nile³³³’, then the Nile is God’s gift to Egypt”. Throughout his speech (*Associated Press* 2013), Morsi emphasized the need for Egyptian unity around protecting Egypt’s interests, threatening ‘[w]e will defend each drop of Nile water with our blood if necessary.’

This was perceived to be a marked shift in Egypt’s official stance on the GERD which, had until then, been to cautiously promote cooperation. The meeting and Morsi’s subsequent remarks became a source of global embarrassment to Egypt. Unsurprisingly, Ethiopia ratified the CFA three days later, on June 13th³³⁴.

There are two possible explanations for Egypt’s shift in its official tone³³⁵. One interpretation is that Egypt never had any intention of cooperating with Ethiopia and was just using the negotiations as a way to stall Ethiopia’s construction of the dam. A second interpretation, which seems to be generally accepted by Egyptians and Ethiopians working on Nile issues, is that Morsi leveraged the fact that there was no consensus in his country about how to address the GERD and politicized the Nile waters issue to appeal to his constituents in Egypt and gain broader support.

The Egyptians directly involved in negotiations were quick to react after Morsi’s provocations. By mid-June, Ethiopia asked for official clarification on Morsi’s speech and Egypt sent a delegation to Ethiopia to explain that Morsi’s statements were not a reflection of Egypt’s official stance³³⁶. Their message to Ethiopians was that the situation was a reflection of domestic political turmoil³³⁷. While some Ethiopians recognize that Morsi’s statements are likely due to internal politics, others are more critical³³⁸.

³³² The participants of the meeting claimed they did not realize that the entire meeting would be broadcast live (Ezzat 2013).

³³³ This is a reference to a quote by ancient Greek historian Herodotus, who wrote that Egypt was ‘the gift of the Nile’ in 450 BC when referring to how the Nile brought rich sediments to the Egypt’s delta.

³³⁴ Ethiopia said that it waited until 2013 to allow for Egypt to establish a formal and elected government ‘as a gesture of goodwill’ before ratifying the CFA (*BBC* 2013).

³³⁵ They are not mutually exclusive – both could be true.

³³⁶ Interview with former senior official in Egyptian Ministry of Foreign Affairs on July 13, 2018; Interview with supporter of the Ethiopian negotiating team on July 31, 2018.

³³⁷ Interview with a senior official within the Egyptian Ministry of Foreign Affairs: July 13, 2018: “When you go to that issue of the Morsi meeting, yes, Egypt was in a very bad time. What they said [the participants of the meeting] doesn’t reflect the everyday behavior of Egypt... they wanted to tell the Egyptian people ‘we care about your problem and we’ll do what we can.’.. That was part of the mess of Egypt at that time... From Morsi’s office, they invited people to come. The Foreign Ministry didn’t know. The Defense Ministry didn’t know. Intelligence didn’t know about it... everything was ridiculous... that’s part of the mess that came from the Brotherhood government. No harmony, no notification to other Ministries. Nothing. They have no experience in politics. They just want to make popularity... they gather some people and made that live broadcast. It was crazy.”

³³⁸ “We did our best to do that [forgive the event]. Normally, you can't say those are insignificant. Because the president is there, he's the head of state. Whom do you expect, the Minister of Water Affairs? No, because the Head of State is there. If this is a meeting by the opposition party, it is okay. But there are cabinet members, by the way... if you look at what he said... they almost implemented all six strategies except the last - to go to war... One is financing, another is trade, and another is bringing opposition parties. Another is creating problems between different nationalities and sabotage. Then the last is to mobilize the Egyptian security to demolish the dam. They didn't do that one, but the rest they did by the way. If you look at the last conflict between nationalities in Ethiopia, Egyptians are caught actually in Ethiopia. Most [Ethiopian] opposition parties have offices in Egypt now... they blocked financing for the interconnection for the GERD - from the ... bank in China... so all six strategies are implemented, except the 7th, which is demolishing the dam. So it was not just simple political rhetoric.’ (Interview July 31, 2018).

Even though Ethiopian negotiators were willing to give Egypt the benefit of the doubt, they still had to convince the Ethiopian public that Egypt genuinely wanted to cooperate. They relayed the information given to them by their Egyptian colleagues about the domestic turmoil within Egypt (Interview: July 31, 2018):

[T]here is a pressure on us because people will ask us, 'why do we keep on negotiating with Egypt while they are doing this to Ethiopia?' So we told them that this is for political consumption. Because on June 13th, about 23 million people in Cairo are going to demonstrate against Morsi and oust him from office. We know that's in the pipeline. We are aware of that. So we told the public that he want[ed] to divert the attention of the public from that. But he didn't survive anyway, and the public came to know that he did that for that purpose.

By the end of the month, millions of Egyptians lined the streets of Egypt chanting for Morsi's resignation and the removal of the Muslim Brotherhood (Kingsley 2013).

From the Egyptian perspective, Egypt was at a significant disadvantage immediately after the Morsi debacle and the 2013 Egyptian revolution on two counts. First, Morsi's televised meeting became a source of international embarrassment and weakened Egypt's credibility as a cooperative partner, thereby indirectly strengthening Ethiopia's negotiating power. Second, (from the Egyptian perspective) Sudan shifted away from Egypt soon after the second revolution for political reasons and aligned itself with Ethiopia³³⁹.

In November 2013, several months after the second Egyptian revolution, the Ministers of Water from the three countries met to discuss ways to proceed following the IPoE's Final Report. This first Tripartite Ministerial Meeting (among the Ministers of Water) revealed two major differences in preferences. First, Egypt pushed for construction of the dam to freeze until after the studies recommended by the IPoE were conducted. Ethiopia refused, pointing out that the IPoE did not recommend a suspension. Second, Egypt pushed for the studies to be conducted by a panel of experts, and Ethiopia again pushed back saying that the role of IPoE ended with the Final Report³⁴⁰. A second Tripartite Ministerial Meeting took place in December 2013, but to no avail – the countries would not budge on their positions. Relations between Egypt and Ethiopia became increasingly tense and negotiations on the GERD ground to a halt in January 2014³⁴¹.

2.2 Trust-Building through the Declaration of Principles

Tripartite talks did not resume again until after the election of Egyptian President El-Sisi in May 2014. There was a noticeable shift in Egypt's official tone under President El-Sisi. This was either from a genuine desire to cooperate and renew broken ties with its African neighbors³⁴² or from a more pragmatic recognition that, with 40 percent of the GERD now constructed (Lakew 2015), Egypt could only hope to mitigate harm at this point. Soon after his election, President El-Sisi met with former Ethiopian Prime Minister Desalegn at the African Union summit in June 2014. The two Heads of State renewed their commitment to regional cooperation and agreed to resume trilateral discussions.

³³⁹ In early December 2013, former Sudanese President Omar al-Bashir publicly announced Sudan's support for Ethiopia's construction of the dam (Ahran Online 2013). This was a blow to Egypt, which had until then, felt united with Sudan by culture, history, and the 1959 Nile Agreement. This point is heavily disputed by Sudanese officials currently involved in the negotiations, who argue that the former Sudanese officials involved in negotiations – al Mufti, Hyder Yousef, and Kamal Ali – were fired from their positions (or pressured to resign) because they were perceived to be aligned with Egypt rather than having Sudan's interests at heart.

³⁴⁰ Interview with former senior official from the Egyptian Ministry of Foreign Affairs on July 13, 2018.

³⁴¹ The Tripartite Ministerial Meetings took place again in December 2013 and January 2014. See Salman 2016.

³⁴² Egyptian Foreign Minister Shoukry emphasized the need for 'joint efforts for the future, to create stability for our [African] people' in a conversation with 15 journalists from across Africa (Chifuwe 2015).

The GERD negotiations were so far primarily led by the three Ministers of Water. After Morsi was replaced by El-Sisi, three major shifts occurred. First, the selection of the consultants that would be hired to conduct the IPoE studies was delegated to a Tripartite National Committee (TNC), comprised of four national experts per country³⁴³. Second, Egypt pushed for the Ministries of Foreign Affairs to be officially involved in the Tripartite Ministerial Meetings, expanding the 3-party meetings to 6-party meetings. Their formal inclusion was perceived, mainly by Egypt, to make the negotiations more politically tenable³⁴⁴. Third, the Heads of State became more directly involved throughout the rest of the negotiations, especially when discussions at the level of the TNC or of the Ministers stalled.

Three levels of deliberation emerged at this point in the GERD negotiations (Figure 6).

Figure 6. Timelines of Three Deliberations within the GERD Negotiations (Jan 2014 - March 2015)



The Tripartite National Committee (TNC) is responsible for overseeing the work of international consultants in conducting the studies suggested by the IPoE. The Ministers are sometimes, but not always, present at the TNC meetings. However, the TNC members usually attend the Tripartite Ministerial Meetings in an advisory role³⁴⁵. The Tripartite Ministerial Meetings have continued in parallel to the work of the TNC, sometimes providing additional support to enable cooperation among the three countries. If, and when, the TNC or the Tripartite Ministerial Negotiations reach an impasse, the Heads of State intervene.

³⁴³ These twelve experts sign the Meetings of the Minutes and are the official members of the TNC. Unofficially, the number of individuals in the TNC meetings vary considerably from meeting to meeting because each country also invites several members as part of its advising group. Several interviewees mentioned that when Egypt came to the TNC meeting with large advising groups, Ethiopia would also bring many individuals. If Egypt brought only a handful of people to support the formal TNC members, Ethiopia also scaled back: "So it is a team of two... But, as I mentioned, if the Egyptian team is 20, then the Ethiopian team is also 20 (3 +17). If the Egyptian team is 3, the Ethiopian team is 3." (Interview with a Sudanese member of the IPoE on July 27, 2018; sentiment echoed by a member of the Ethiopian TNC advising group on Aug 1, 2018)

³⁴⁴ Egypt has pushed for the inclusion of Foreign Affairs and Intelligence/Security throughout the GERD negotiations. The 'securitization' of the GERD issue is further discussed in Part III.

³⁴⁵ Email exchange with Ethiopian participant on May 20, 2019.

For the sake of clarity, this section will introduce the Tripartite National Committee, but focus on the Tripartite Ministerial Negotiations and the interventions by the Heads of State leading up to the second major milestone, the signing of the Declaration of Principles in March of 2015. The following section (Section 2.3) will then describe some of the challenges faced within the Tripartite National Committee. It is important to remember, however, that these related tracks of deliberation (Figure 6) occur in parallel and affect each other.

2.2.1 Establishing the Tripartite National Committee

The temporary impasse due to their heterogeneity in preferences was overcome through political will (at the level of the Heads of State). Under instruction from their Heads of State, the Ministers of Water from the three Blue Nile countries resumed the Tripartite Ministerial Meetings and met a fourth time in late August. During this meeting, they agreed that the two studies recommended by the IPoE would be conducted by international consultants, but under the supervision of a Tripartite National Committee (TNC)³⁴⁶.

Their decision to have international consultants conduct the research was in recognition of the fact that, while each country could (and did) conduct its own studies of the impacts of the dam, the other countries would not accept the findings³⁴⁷. The countries' adoption of joint fact-finding³⁴⁸ - working together to collectively define the research question and scope, select the consultant, supervise the research, and translate the findings into recommendations for the Ministers by consensus³⁴⁹ - would be time-consuming, but it would be the only way in which all three countries would likely agree to the same 'facts'.

The TNC first met in mid-September of 2014³⁵⁰ and successfully reached consensus on the Rules of Procedure for their negotiations and on the Terms of Reference for the consultants (*Horn Affairs* 2014b). Their original intention was to find consultants that could conduct two studies: a Water Resources/Hydropower System Simulation Model and a Transboundary Environmental and Socioeconomic Impact Assessment. The original timeline was for the consultancies to be hired and for the studies to be conducted by March of 2014, two years ahead of the planned filling of the GERD (summer 2016). These studies have not yet (as of June 2019) been completed due to several disagreements (Section 2.3).

2.2.2 Leading up to the Declaration of Principles

³⁴⁶ Arguably, this was a compromise and face saving measure - Egypt gave up pushing for Ethiopia to suspend its construction of the dam and Ethiopia agreed to allowing international experts (rather than national experts) conduct the studies (Salman 2016, p. 8).

³⁴⁷ Interview on Aug. 1, 2018: "[O]n the question of socioeconomic and environmental impact, then the three countries can bring their own studies but that cannot be accepted. Each study may not be endorsed by the other country. So the best thing is to hire an independent body, an experienced body."

³⁴⁸ Information asymmetries, or situations in which one of the stakeholders holds more information than the others, present a common barrier to collective action and cooperation. One potential procedural intervention to overcome information asymmetries is through joint fact-finding (Ehrmann and Stinson 1999; Lawrence; Susskind, Field, and Smith 2017). Joint fact finding is a process by which the participants collectively agree on the scope of the studies, jointly conduct the research or hire the experts that will conduct the research, and interpret the findings together. It is a common tool used for resolving environmental disputes, and may be especially effective in environments with very little trust. The work of the IPoE and subsequent work of the Tripartite National Committee was the Eastern Nile countries' approach to joint fact-finding.

³⁴⁹ Interview with Ethiopian on Aug. 1, 2018: "It took so much time to come to an agreement on which organization can take the contract... And there was also a time where there was an argument that the findings will be decided by a majority, but was a lengthy discussion, 'No, there is not a question of deciding a majority... but it is always consensus. We must discuss the concrete evidences and then we must, be able, with our communications and cooperative procedures and processes that what we do is accepted by all of us. But we can negotiate and talk with the evidence, technical evidence, support and so on.' So that took away the decision to decide by consensus or by vote. It was by consensus, of course. Countries cannot be forced to accept the decision of other countries."

³⁵⁰ The Ministers of Water and their advisory teams also attended this first meeting.

Ethiopia's initial plans³⁵¹ to start filling the GERD by July 2016 mounted pressure on the Eastern Nile countries to reach agreement on the filling and operation of the GERD. The fifth Tripartite Ministerial Meeting was held in Addis Ababa³⁵² immediately after the first TNC meeting in mid-September of 2014 (Figure 6). In an effort to allay any remaining concerns from the Egyptian or Sudanese Water Ministers, Ethiopia invited the three ministers to visit the GERD to show them that the recommendations of the IPoE related to construction (as suggested by Sudan) had been implemented. Ethiopia's intent was to rebuild the Egyptian and Sudanese Ministers' trust in Ethiopia by showing them tangible proof that their input was taken seriously and integrated into the dam's design. Although the Egyptian and Sudanese Ministers of Water seemed impressed by Ethiopia's adjustments to the dam's design, they did not communicate their confidence in Ethiopia to the media. In other words, although trust was built at the level of ministers, it did not percolate to the Egyptian public. This disconnect between trust built at the levels of the negotiators and with the general publics was raised several times as a major obstacle to the negotiations³⁵³

The sixth Tripartite Ministerial Meeting was held in Cairo, Egypt in mid-October of 2014. This time, the Ministers of Water met directly with President El Sisi and reiterated their commitment to ensuring that the TNC would soon select the consultants (Salman 2016). This direct meeting with El Sisi, immediately before the second TNC meeting (Figure 6), reflected Egypt's interest in reaching an agreement before Ethiopia started to fill the dam.

The Tripartite National Committee (TNC) met a second time in mid-October of 2014. They reviewed nine potential consultants that could conduct the studies and shortlisted seven (*Horn Affairs* 2014c), but ultimately reached another temporary impasse.

The Ministers met several months later in response to the TNC impasse³⁵⁴. This time, the Ministers of Water were joined by the Ministers of Foreign Affairs, expanding the 3-party meetings to 6-party meetings (Interview: August 1, 2018):

The TNC plunged into difficulties. It became really not moving fast... and then the DoP negotiations started and it was taken over by the Minister of Foreign Affairs. They tried to make the process of TNC better and more facilitated by higher political intervention. That's why it was negotiated in short

³⁵¹ Interview with Ethiopian water expert on July 31, 2018.

³⁵² It was the first tripartite meeting held outside of Khartoum, Sudan.

³⁵³ 'And as a minister of Egypt, he made one announcement. He said he was very much inspired by the technicality with which the dam is being built, in front of Egyptian journalists. Then suddenly he said, I'm saying this as a water resource engineer, not as a Minister. By the way, this was the first meeting of the TNC... I was told by the Sudanese that when he went back, he went directly to the TNC meeting. They asked him, 'how is it'? He said 'they shut my mouth'. Then he explained to them that all recommendations of the IPoE are practically implemented, they are even beyond their recommendations. But [he] never talked about this thing in front of [the] Egyptian public... Like the, the crest of the dam - the IPoE recommended it to be six meters, and they made it 10 meters. They recommended the saddle dam be asphalt faced, and Ethiopia made it a concrete face, which is by far better. But they [Egyptian negotiators] don't go out and speak in front of their public like this. The minister, never went to Egypt and told them the dam is technically handled in this way. He never said that. So the problem is with their negotiators because they are always afraid of public... if it goes against the public perception, they feel that the backfire will be very bad for them. So all effort you make to inform them and change their mind, will not go back and be reflected in the public.' (Interview: July 31, 2018)

³⁵⁴ The seventh Tripartite Ministerial Meeting was held in Khartoum, Sudan in early March 2015. Salman (2016) suggests that 'the outcome of the seventh tripartite meeting' may have been influenced by a report released by the Massachusetts Institute of Technology (MIT). Soon after the 6th meeting, a group of 17 international water experts released an 'Amicus Brief' outlining four issues on which they believed the Eastern Nile countries needed to reach a resolution – (i) an agreement on the coordinated operation of the GERD and the High Aswan Dam; (ii) technical issues related to the design of the GERD; (iii) an agreement on selling hydropower from the GERD; and (iv) the potential downstream impact of the GERD, especially agriculture (MIT 2014). Although the MIT report was brought up by several of my interviewees, its impact on the negotiations is unclear.

time... That's why it became a six party - Water and Foreign Ministries were leading it. And that was signed by Head of States.

The inclusion of the Ministry of Foreign Affairs was pushed by Egypt because the issue of Nile water is an issue of national security, as Egypt draws 97 percent of its water from this transboundary water resource.

Led by the Ministers of Foreign Affairs³⁵⁵, the Ministers worked to draft an agreement that would be reviewed by the Heads of State of the three countries. Later that month, on March 23, the three Heads of State – Egyptian President El Sisi, former Sudanese president Omar El Bashir, and former Ethiopian Prime Minister Hailemariam Desalegn in Khartoum, Sudan – signed the ‘Agreement on the Declaration of Principles’.

2.2.3. *The Declaration of Principles*

The text of the Declaration of Principles (DoP), though short, is very similar to that of the CFA and to international law (i.e. the 1997 UN Convention) (Appendix 6). Like the CFA, it contains Articles on Cooperation (Article 1); Sustainable Development of the Nile River Basin (Article 2³⁵⁶); Prevention of Significant Harm (Article 3); Equitable and Reasonable Utilization (Article 4); the Exchange of Data and Information (Article 7); Principle of Sovereignty and Territorial Integrity (Article 9); and Peaceful Settlement of Disputes (Article 10) (*Horn Affairs* 2015).

There are only three articles - Article 5 (Principle to Cooperate on the First Filling and Operation of the Dam), Article 6 (Principle of Confidence Building), and Article 8 (Principle of Dam Safety) – that are specific to the GERD. Article 5 states that the countries will apply the recommendations of the consultants conducting the studies and the final report of the TNC to reach a plan on the filling and operation of the dam. It also establishes that the plan should be formulated within fifteen months of the start of the studies. This was to ensure that the three countries agreed on a plan before the filling of the GERD started (expected July 2016). Article 6, ‘the principle of building trust’, created value by giving the downstream countries priority to purchase any energy generated by the dam. Article 8 reiterates the countries’ commitment to ensuring the safety of the dam.

What is more interesting is what has been excluded from the agreement. First, the DoP does not prohibit construction of the GERD as the studies are being conducted. This point was pushed for earlier by Egypt, but excluded from the DoP. Second, the DoP avoids discussing prior agreements and the concept of ‘water security’ altogether. This was out of a pragmatic recognition by the negotiators involved that raising these issues might very well lead to another impasse, as had been in the case of the Cooperative Framework Agreement negotiations. An Ethiopian negotiator involved in both the DoP drafting process and in the CFA negotiations, explained that the countries’ experience in negotiating the CFA helped them successfully negotiate the DoP quickly (Interview: March 28, 2015):

In a way, we somehow knew each other. Not only knew each other but somehow also knew, or understood each other’s concerns and issues. And also, when I say knew each other, we knew each other’s positions. And we’ve tested each other for quite long. So there is some good understanding of each other’s bottom line or red line.

Although the basin-wide CFA negotiation resulted in an upstream-downstream impasse, the process also improved mutual understanding of each country’s interests and positions. This helped at least partially reduce the barriers to collective action in future developments (such as the GERD).

³⁵⁵ The only exception is that the Minister of Water represented Sudan during this meeting.

³⁵⁶ Article 2 of the DoP unequivocally clarifies that the dam is to only used for hydroelectric production, and not irrigation.

Additional reasons that agreement was reached in a comparatively short period of time include (i) the political impetus existed to build confidence and trust among the countries after the Morsi debacle; (ii) the DoP is a confidence-building agreement, not a water-sharing agreement, which allowed the countries to avoid sticky subjects; (iii) the political will existed at the highest levels (Heads of State) to show some progress on the GERD negotiations; and (iv) the negotiators were hitting against a hard deadline of getting the agreement in place in enough time to allow the studies to be conducted before filling began.

In summary, signing the DoP at the level of the Heads of State successfully rebuilt trust in the region and helped to encourage the TNC to (temporarily) push past their impasse³⁵⁷.

2.3 Joint Fact Finding by the Tripartite National Committee

The TNC meeting resumed after the signing of the Declaration of Principles. By April, the TNC recommended two firms to conduct the recommended studies: BRLi Group, a French firm, and Deltares, a Dutch firm. By several accounts³⁵⁸, BRLi would have won the contract according to the process by which the three countries selected the consultants. However, Egypt refused to accept BRLi alone³⁵⁹ and Deltares was included to complete thirty percent of the work³⁶⁰. In an unprecedented move, Deltares withdrew from the studies in September 2015³⁶¹. TNC meetings continued, as did the Tripartite (6-party) Ministerial Meetings, in an effort to identify another consulting firm to take Deltares' place.

Amid rumors that Egypt would withdraw from the DoP (Salman 2016), the fourth Tripartite Ministerial Meeting (held on December 27-28, 2015), led to the signing of what became known as the 'Khartoum Document' by the six Ministers. Among other things, the Khartoum Document reiterated the three countries' commitment to the DoP, pointed to Artelia (another French consulting firm) as the replacement for Deltares (per the TNC's recommendations), and outlined a 'Road Map for subsequent activities related to the two studies'³⁶².

³⁵⁷ Interestingly, when I interviewed Egyptian and Ethiopian negotiators in 2015, their sentiments about the DoP ranged from skepticism (that the agreement would be concrete enough to resolve the core issues) to hopeful optimism (that the agreement would rebuild trust after Morsi). When I interviewed them again in 2018, several of the same people, expressed mixed reactions to the DoP. On one hand, nearly everyone agreed that the DoP was a significant turning point in the negotiations and critical to rebuilding trust in the region (after Morsi's final year). On the other hand, some Egyptians felt that the DoP weakened Egypt's position by being interpreted as Egypt's de facto recognition of the GERD as a legitimate development, thereby reducing any constraints or hesitation that international actors may have had in providing Ethiopia general development aid. Conversely, some Ethiopians felt the DoP weakened Ethiopia's position by being interpreted (especially by upstream countries) as Ethiopia abandoning the Nile-basin approach of the CFA.

³⁵⁸ Interview with Sudanese member of negotiating team on July 27, 2018 and with Ethiopian support to the negotiating team through email exchange on July 1, 2019.

³⁵⁹ By some accounts, the Egyptian resistance to BRLi was because Ethiopia shortlisted BRLi and Egypt was concerned that BRLi would be biased in Ethiopia's favor. By other accounts, the resistance had more to do with the fact that Egyptians perceived Deltares to be more technically capable than BRLi.

³⁶⁰ From the Ethiopian and Sudanese perspective, the inclusion of Deltares was meant to be a confidence-building measure to gain Ethiopia's buy-in to the process.

³⁶¹ Official statement released by Deltares is that 'after 3 months of negotiations on a possible cooperation for the studies with BRLi... Deltares had to conclude that the conditions as imposed by the TNC and BRLi on how the studies should be carried out did not provide sufficient guarantee for Deltares that an independent high quality study could be carried out.'. Available on <https://www.deltares.nl/en/news/deltares-withdraws-from-gerd-studies/>. According to a few Sudanese and Ethiopian negotiators involved in the process, the Deltares consultant refused to conduct the work as described by the TOR, suggesting the use of a different model. This detail is significant only in that there seems to be some level of resistance from Sudanese and Ethiopians to outside advice, which is perceived by some to be Western arrogance meddling in the affairs of the Nile Basin. Those (experts and academics) from outside the Basin, including myself, will be better received if they offer recommendations with humility.

³⁶² Text of the Khartoum Document available online

(https://www.internationalwaterlaw.org/documents/regionaldocs/Khartoum_Document_29_Dec_2015.pdf).

2.3.1 Deadlock over Inception Report

The two firms – BRLi and Artelia – were finally hired in September 2016 and BRLi soon released an ‘Inception Report’ on the potential impact of the GERD downstream. The report concluded that the speed of the construction could have a negative impact on Egypt’s share of water (*Abram Online* 2018b). The countries fractured again in their reaction to the consultant’s report. Ethiopia and Sudan rejected the report and TNC negotiations reached another deadlock in November 2017.

There are two major reasons for the controversy over the Inception Report. First, BRLi wanted to conduct comprehensive reviews of some issues, such as salinity³⁶³, that were not outlined in their original Terms of Reference (ToR) or Scope of Study. From a technical perspective, it is reasonable to expand the scope of research to ensure that all potential impacts are accounted for. However, in the case of the Eastern Nile, any small changes – even in the Scope of Study or ToR – could further delay the process by years. Consensus on the Nile does not come easily. The TNC originally agreed to stick to the Scope of Study as outlined by the IPoE to avoid additional years of negotiations (Interview: July 27, 2018):

To agree in this region is a very precious opportunity. We are lucky we have this agreement in the past [on the Scope of Study]. Nobody on the earth can guarantee that we will agree... usually in these meetings, people used to disagree even on the grammar. Some people would say it should be ‘the’ and others say it should be ‘that’. You can’t imagine but these types of disagreements would last months. Shall we put ‘the’ or ‘that’, and the meeting can cancel and collapse. For this reason, it was agreed between the three countries, before they employed the consultants, when they submitted the RFP [request for proposal], they said this TOR should not be changed even if there is something not correct... They take it from the IPoE... they changed nothing here because there is no chance to disagree. This is the fruit of all the past years of negotiation. So if we lost it for once, we lose everything.

This disagreement over what should be included in the Scope of Study again stems from a lack of trust. If, for example, the countries trusted each other, Sudan and Ethiopia may have been content to allow the consultant to conduct a more extensive study on salinity. However, in the absence of trust, their perception is that Egypt has been pushing the topic in an effort to show that there will be significant harm downstream due to the dam. Ethiopians and Sudanese acknowledge that, although salinity is a serious problem for Egyptian agriculture, it will be difficult to differentiate the dam’s effect on salinity versus existing agricultural practices in Egypt and saltwater intrusion in the Nile Delta due to sea level rise. From the Egyptian perspective, on the other hand, exclusion of this very serious issue demonstrates a pattern of poorly-planned hastiness that has characterized most of the Ethiopian approach to the GERD³⁶⁴.

Second, BRLi proposed to use Egypt’s current water use as the baseline to measure the potential impact of the GERD. Egypt’s stated water use is approximately 70 BCM³⁶⁵. This was also a source of contention³⁶⁶:

³⁶³ The issue of salinity is related to the concern that, with reduced flow (as a result of GERD filling), there will be reduced Nile flow. The reduce flow could lead to the build-up of natural salts in the soil which, over time, would negatively impact agricultural production. Egypt is significantly more worried about this than Sudan – partially because it already faces a threat of increased salinity in the Nile delta due to sea level rise.

³⁶⁴ This, of course, calls into question the actual efficacy of a procedural tool like joint fact-finding in the absence of genuine cooperation. If the actors involved do not trust each other enough to share data or define the scope of the studies in a way that addresses all their concerns, the results of the studies will not be acceptable to all sides.

³⁶⁵ Several interviewees also mentioned that BRLi originally suggested using 55.5 BCM as Egypt’s baseline water utilization as a way of measuring the impact of the dam on Egypt. This number has become a trigger point – especially to Ethiopians, who do not recognize the legitimacy of the allocated 55.5 BCM to Egypt and 18.5 BCM to Sudan under the 1959 Nile Agreement (since they are not a party to the agreement).

³⁶⁶ Interview with senior Ethiopian official in Ministry of Foreign Affairs on Aug. 3, 2018.

Why do we need the baseline? To measure the impact. If baseline is something we don't agree upon, then naturally the result that the consultant is going to bring based on this baseline is not going to reconcile our different interests because, for Egypt, the best scenario is using the current use. The current use is 100% downstream, 0 for Ethiopia. So any amount of water that we impound, one will say it's going to impact. So you cannot take it as it is. What we are saying is that when the baseline comes, the issue comes, and we should bring in the internationally accepted principles of equitable and reasonable utilization and the obligation not to cause significant use. So for Ethiopia, we have the right to the use of the Nile waters, an equitable and reasonable utilization of the waters. When we use that equitable share of ours, then we will be under obligation not to cause significant harm on the downstream. Otherwise, when you don't have that kind of equitability in the system, then the situation is a skewed and unbalanced. An unbalanced approach is unjust for Ethiopia.

From Ethiopia's perspective, Egypt's current use (as defined by the 1959 Nile Agreement), is not equitable. Their concern is that if Egypt's current use is taken as status quo, the impact study will most definitely reflect significant harm downstream. Their counter-proposal was to define the baseline according to 'equitable and reasonable utilization' and conduct the study with different baseline values of water use by Egypt. From Egypt's perspective, this would be a waste of time as they have no option but to use the Nile water. Although Egypt is trying to improve its existing water use, these plans are to accommodate its rapidly growing population – not to reduce its dependence on the Nile³⁶⁷. In short, the controversy over the baseline reflects the high degree of heterogeneity in beliefs about how Nile water should be distributed³⁶⁸.

2.3.2 'A Matter of Life or Death'

A week after the TNC deadlock, El-Sisi said that the Nile is a 'matter of life or death for the nation' and that '[n]o one can touch Egypt's share of Nile water' (*The Herald* 2017). Two months later, in early January 2018, El-Sisi again emphasized his commitment to his country to protect their water rights while announcing the opening of a water treatment and desalination project³⁶⁹:

We won't allow a water-shortage crisis to occur in Egypt. We have not only to keep our share of the Nile, but also to use our share to the maximum... This is our country, and water for agriculture and drinking must be secured for citizens from Aswan to Alexandria, so that no problem will occur later and we say that we are not ready for it.

From Egypt's perspective, the Nile is its lifeline – it is the source of water, food, and energy. The fear of something happening to the Nile's flow is visceral, but also rational (Interview³⁷⁰ on July 9, 2018):

As Egyptians, we are strongly attached to the Nile Folk songs, stories, documentaries... all of which stress the importance of the Nile to Egypt. It is a bloodline of Egypt... it [Egypt] is the largest oasis in the world. From this perspective, the importance of the Nile to Egypt cannot be underscored... If we have this water shortage, if we go below 158 meters in front of the dam, this will have major complications for the entire Egyptian economy. One of them, there will be no electricity generated from the High Dam. It generates about 20 percent of the current Egyptian electrical consumption, but still 20 percent is a considerable amount. Which

³⁶⁷ Interview with high-level Egyptian official in Ministry of Foreign Affairs on July 13, 2018.

³⁶⁸ When asked about the major barriers to agreement within the work of the TNC, the former chair responded: "Issues of hydropolitics, often come into discussion of water rights, water use rights come into the discussion. The policies of the three countries are different related to water use, regarding existing agreements, regarding the CFA."

³⁶⁹ The plant will be Egypt's largest water treatment and desalination plant (*Abram Online* 2018a).

³⁷⁰ Interview with Egyptian professor of Sociology and expert in socioeconomics of the Nile.

means that some factories dependent on electricity will come to a halt. So we will lose on a production level and the workers themselves will lose their jobs, especially with the increasing privatization of the economy. Back in the 1960s, the government guaranteed jobs. But now, it's a free market so people will be sent home with meager salaries as they are in this country. Those people will have a hard time making ends meet. In agriculture, the water shortage will push land owners not to cultivate their land and, if I'm not cultivating my land, why would I hire labor? So you have agricultural unemployment as well. There are very few opportunities for employment outside of agriculture in the countryside, so you'll have massive migration into the urban centers. But there is very little work in the urban centers, so people will be sitting idle. We have a proverb that says, "Hunger is an atheist," meaning that if you go hungry, you will be ready to kill. Most people that you see in Cairo begging are increasing by the scores, every single day. And who is supporting those people? It is the middle class giving them tips as parking attendants... and this middle class is being squashed at the moment.

El-Sisi is playing a two-level game (Putnam 1988). On one hand, he must reassure Egyptians that he will protect their right to the Nile river and ensure their water, energy, food, and socioeconomic security. At the same time, he must also convince Egypt's Blue Nile neighbors and the international community that Egypt is actively pursuing cooperation on the dam. This is not a simple task and partly explains why there is no consensus in Egypt on how to address the issue of the Nile and, relatedly, why the Egyptian position on the Nile seems to fluctuate.

2.3.3 "*We will not enter a war*": Rejecting calls for third party mediation

A week later, El-Sisi made a second statement, this time reiterating his commitment to establishing peaceful relations with its upstream Eastern Nile neighbors (El-Bey 2018):

We will not enter a war. I tell this to our brothers in Ethiopia and Sudan: Egypt doesn't conspire or interfere in the affairs of any country and is very keen on maintaining good relations between our nations. It is already enough what the region has already witnessed in the past years. We have a fixed policy of development, building and construction and nothing else.

El-Sisi's statement was partially in response to the TNC deadlock and partially in response to an escalation in tensions between Egypt and Sudan, after Sudan withdrew its ambassador from Cairo earlier in the month³⁷¹. Two days later, on January 17, 2018, former Ethiopian Prime Minister traveled to Cairo to meet El-Sisi in person. During their meeting, El-Sisi suggested mediation by the World Bank. Desalegn responded by saying that the proposal would be discussed by the TNC during their next meeting and emphasized the countries' commitment to cooperation (El-Bey 2018):

³⁷¹ General relations between Egypt and Sudan cooled after the Morsi regime was replaced. Many Egyptians accuse al-Bashir's regime of harboring members of the Egyptian Muslim Brotherhood. In December 2015, al-Bashir said that the dam was a reality and that cooperation was needed to ensure its success. This was perceived by many Egyptians as Sudan's shift in position from pro-Egypt/anti-dam to pro-Ethiopia/pro-dam. Relations between the two countries have become further strained due to an ongoing dispute starting from 1899 over the Halayeb Triangle, a tract of land that falls on the Egyptian-Sudanese border. Sudan renewed its complaint about the Halayeb Triangle to the United Nations Security Council at the same time that it recalled its ambassador to Egypt. A third source of tension is related to an agreement between Turkey and Sudan, in which Sudan leased Suakin, one of its islands in the Red Sea, to Turkey. Some see Turkey's lease of the island as part of a plan to expand its military presences in the Middle East. The warming relations between Turkey and Sudan are perceived to be part of broader geopolitics playing out in the Basin between Turkey-Iran-Qatar on one side, and Saudi Arabia-UAE-Egypt on the other. When asked about why he was recalled from Cairo, Amb. Abdel-Mahmoud Abdel-Halim pointed to the conflict over the Halayeb Triangle and the declining treatment of Sudan by Egypt's media (Interview: July 15, 2018).

We stress the necessity of further studying the Egyptian proposal and carrying on cooperation in good faith and trust among our countries. I am confident that we will overcome these problems soon.

However, by January 21, Desalegn stated that Ethiopia would not accept mediation by a third party, stating that '[s]eeking professional support is one thing; transferring it to an institution is another thing. So we told them that this is not acceptable with our side' (*Egypt Independent* 2018)³⁷².

Ethiopia's response to Egypt's request for mediation may seem strange considering the World Bank successfully mediated the Indus Water Treaty and has substantial Nile experience through its role as a mediator during the CFA negotiations and its continued support in the region through the Nile Basin Initiative. However, Ethiopia's rejection of World Bank intervention is demonstrative of a broader trend that seems to be growing within Ethiopia and Sudan of being resistant to outside influence during the GERD negotiations³⁷³. This resistance has several possible explanations. First and foremost, from the Sudanese and Ethiopian perspective, the negotiations are going well - the dam will be constructed regardless of whether or not Egyptians are on board. Adding a third party (e.g., the World Bank) to mediate the dispute adds a level of uncertainty about the outcome of the negotiations. Second, from their perspective, there is no need for outside intervention as long as the Eastern Nile countries are handling it directly³⁷⁴. Relatedly, introducing outside actors to the conflict may further complicate the situation because outside actors have their own interests³⁷⁵. Third, there is a level of suspicion in Ethiopia and Sudan towards most, but especially Western, actors. Despite the World Bank's substantial support to the region, it is not considered a 'neutral' actor³⁷⁶. It is considered by many Ethiopians and Sudanese to push U.S. (and, therefore, Egyptian) interests. The Blue Nile countries would need to reach a resolution on their own.

The three Heads of State met again at the next African Union summit at the end of the month and, on January 29, El-Sisi assured reporters³⁷⁷ that, "[n]one of [us three] countries – Egypt, Sudan and Ethiopia – will be harmed... Egypt's interests are one with Ethiopia's and also one with Sudan's. We are speaking as one voice.' During this meeting, the three leaders – El Sisi, al-Bashir, and Desalegn – agreed that all technical issues would be resolved within a month and agreed to establish a Tripartite Infrastructure Fund that would finance joint infrastructure development projects in the three countries. When asked by reporters if the crisis over the dam was resolved, El-Sisi responded, "There is no crisis."

³⁷² Ethiopia and Sudan both seem resistant to bringing in outside actors to help mediate the dispute. Their resistance to external support is further discussed in Chapter 5.

³⁷³ The U.S. and E.U. both sent representatives to try to mediate in 2014 and again in 2018 when negotiations among the three countries broke down (*Horn Affairs* 2014a).

³⁷⁴ Interview with Ethiopian water expert (March 26, 2015): 'Actually, the US State Department requested to mediate. The European Union requested to mediate. But we said, "please leave it to us. Let us resolve our issues by ourselves".' Interview with senior official in Ethiopian Ministry of Foreign Affairs (Aug. 3, 2018): "We are sovereign states. We negotiate directly... in principle, no one is against someone wanting to help you. That help can be more fruitful if the need really warrants that. But when, for example, parties can solve it, inviting a third party, it's creating a redundancy. It is only when you feel that you cannot solve this problem, you are heading into a kind of impasse that could have a negative consequence on the existing relationship, therefore a situation that then requires somebody that gives this hand to help. But we have not reached that stage. As you see, we are negotiating and creating different tracks to circumvent certain stumbling blocks. So we are managing ourselves. Certainly, when we really feel we need someone, then at that time, we can. But at this particular time, I don't see any need for a third party to come in because we are engaging each other."

³⁷⁵ Interview with mid-level official in Ethiopian Ministry of Water and Agriculture on Aug. 1, 2018: "Good for the countries to solve the problem themselves [without outside influence]. They know they have problems. And as I told you earlier, they have experts. And when they want to engage them, they engage them. When you have so many interests, it may not be very helpful... it may complicate things even more"

³⁷⁶ Interview with Sudanese ambassador to Egypt (July 15, 2018): "I remember Egypt, at one point, suggested the involvement of the World Bank. And I was discussing that with the Ethiopians and they think that we don't need a third party. They think that there is a good Egyptian backers at the World Bank that will support Sisi on the Nile waters."

³⁷⁷ Al-Bashir followed El-Sisi's statement with, "There is no more crisis" (*Abram Online* 2018b).

Although the statement may have reassured the broader public, Egyptian negotiators were shocked. They were now faced with the impossible task of reaching an agreement on the GERD while also ensuring Egypt's 'historical right' to the Nile waters³⁷⁸. As a former Egyptian Water Minister reflected (Interview: July 15, 2018), "[t]he Egyptian negotiator is a patriot who has responsibilities and ambitions to solve this issue. He is aware that there are historical responsibilities on his shoulders and that history will have no mercy on him if he did not do his best, but at the same time, he is dealing with two countries with full sovereignty and cannot force them to do anything. The nature of negotiations is an art of reaching the best results with the least losses without giving up historic and acquired rights." In short, unless something dramatically changes, Egyptian negotiators are faced with an impossible task – reaching a resolution on the GERD while gaining commitment by Ethiopia to recognize a bilateral agreement that they consider to be illegitimate.

2.4 Separating Technical from Political: National Independent Scientific Research Group

Despite several meetings and interventions by the Heads of State, there were no significant changes to the TNC deadlock until after former Ethiopian Prime Minister Desalegn resigned and was replaced by Abiy Ahmed in early 2018³⁷⁹. Per Egypt's request³⁸⁰, the Security/Intelligence apparatus of each country was formally included in the Tripartite Ministerial Meetings, thereby increasing the 6-party meetings to 9-party meetings³⁸¹.

The first 9-party meeting was held on April 6, 2018, during which the Ministers suggested creating an independent working group – the National Independent Scientific Research Group – to come up with filling strategies for the GERD. The group, comprised of five national experts per country, first met in early June 2018. Over the next several months, they worked towards reaching consensus on a filling strategy that would be acceptable to all three countries.

This decision to separate the technical discussions about the filling of the dam were in recognition that both the TNC meetings and the Tripartite Ministerial Meetings had become mired with political considerations. As a member of the TNC commented (Interview: Aug. 2, 2018),

The policies of the three countries are different related to water use, regarding existing agreements, regarding the CFA. These are difficult to resolve when the policies are different. When we talk about BRLi's impact study, consideration on the baseline, which relates to water use, those kinds of issues are difficult to come into agreement because you would come down to individual country policies, sovereign policies... the committee cannot decide on those

³⁷⁸ Interview with several officials within the Egyptian Ministry of Foreign Affairs on June 26, 2018 and July 15, 2018. In one of the interviews, the officials half-heartedly joked that the Parliament wants to throw the negotiators in jail for not adequately defending Egypt's rights (under the 1959 Nile Agreement), but that the negotiators have very little negotiating power because El-Sisi keeps making official statements that the three countries will cooperate.

³⁷⁹ Former Ethiopian PM Desalegn resigned in February 2018. PM Abiy Ahmed was elected the head of the ruling Ethiopian People's Revolutionary Democratic Front (EPRDF) the following month. The political transitions and country-level relations during this time are crucial to understanding the delays in the negotiation process. They are discussed in Part III of this chapter.

³⁸⁰ Interview with Ethiopian member of the National Advisory Council on Aug. 1, 2018: "[T]he 9 party thing is again pushed by Egypt and the other countries accepted... but that was the agreement of the three presidents... and that is how the 9-thing came. To help the process of TNC."

³⁸¹ It is unclear why the Heads of State agreed to expand the Tripartite Ministerial Meetings to 9 parties. According to a senior Sudanese official within the Ministry of Water, Intelligence/Security have always been a part of the negotiation process (Interview: July 26, 2018). A former mid-level official from the Egyptian Ministry of Foreign Affairs suggested that the decision to officially include intelligence/security may have been to give the public the perception that the countries were progressing in the negotiations (Interview: July 1, 2018). A 2019 report by the International Crisis Group suggests that the most recent inclusion of security agencies is a positive change in that the security agencies now have open communication with each other, something that had been missing since a 1995 assassination attack on former Egyptian President Mubarak in Addis Ababa, Ethiopia (ICG 2019).

kinds of policies. So the obstacles that we faced in the TNC are minimized in the technical filling and operation discussion.

By delegating the work related to filling the dam to an independent group of national technical experts (rather than waiting for the consultants to make recommendations), the Ministers hoped that the countries would at least reach an agreement on the filling of the dam before Ethiopia began filling (expected July of 2018). Several people – from Egypt³⁸², Sudan, and Ethiopia³⁸³ – who participated in or observed these meetings commented on how the tone of the National Independent Scientific Research Group was much more optimistic because the members focused on science, and did not negotiate based on emotion or abstract ideas of ‘fair’ allocations.

They reached consensus on a strategy, which they presented to the Ministers of Water from the three countries in mid-August 2018. The strategy includes releasing a fixed amount of water downstream every year. In recognition of the Blue Nile’s high inter-annual variability, the strategy clarifies that if the water flow is below the fixed amount, all water will be released and filling will be delayed. After reviewing the strategy with his colleagues in Cairo, the Egyptian Water Minister made three additional requests. These included finalizing an agreement on the long term operation of the dam in parallel to the filling strategy, increasing the minimum release, and a guarantee by Ethiopia to compensate for any flow below the agreed minimum release. The countries have not yet achieved progress on this issue.

...

Where does this leave the three countries? To Ethiopia, the GERD still represents poverty alleviation and economic development. To Sudan, the GERD now represents an opportunity for it to finally use its full allocation of the Nile (as defined by the 1959 Nile Agreement) and increase its agricultural production, thereby improving its water and food security. To Egypt, the GERD still represents an existential threat to its water, food, and energy security – although the discourse has slightly shifted to acknowledge that these risks can be mitigated through cooperation.

Despite these different, and somewhat conflicting, positions on the GERD, the three countries have so far managed to avoid conflict. Considering their starting point (i.e., Sudan and Egypt caught off guard by Ethiopia’s announcement of the dam), their cooperative efforts should not be taken lightly. In Part III of this chapter, I will review procedural interventions used to reduce different sources of heterogeneity as barriers to collective action, describe methods used by each of the countries to rebuild trust, and briefly introduce three external context-specific factors that add a layer of complexity to the negotiations.

³⁸² Egyptian member of the National Independent Scientific Advisory Group (Interview on July 15, 2018) also mentioned that one of the barriers to the TNC negotiations and Ministerial negotiations is that individuals are negotiating based on their emotions. The benefit of keeping the discussions technical is that there are opportunities to reduce runoff and water waste and fill the dam in a way that will not significantly harm Egypt.

³⁸³ Interview with member of the Ethiopian advisory team for the TNC on Aug 2, 2018: “I think that this track is very good because it’s modeling, figures. Of course, behind figures, there are positions and interests of countries that are difficult to handle, but I think we have progressed from the first meeting of the committee. Now it is the third meeting. I was present in the last Addis meeting... and the mood is good. It’s better than TNC process. More understanding among technical people. There are a few hurdles that can be addressed by the technical people with some guidance from the Water Ministers. They are looking at various options that have been presented by the three countries and they have been trying to narrow down the differences. There are still some sticking points that will helpfully be discussed in Cairo in the next week or so. So I think we are in a better position than the TNC discussions, which are more hydro politics than technical discussions. These are university lecturers, modelers, hydraulic engineers. They have a better chemistry than the TNC people. In fact, they feel comfortable if they discuss without the presence of us, for example. Even that’s understandable, and they should continue to discuss on technical matters, technical grounds.”

III. Reflecting on the GERD Negotiations

When the GERD was first announced, in 2011, construction of the dam was expected to be completed by the end of 2017. This gave the countries approximately six years to reach an agreement on the filling and operation of the dam before the first filling, expected in the summer of 2016. This pressure was one reason that the Heads of State signed the Declaration of Principles in March of 2015. Since then, despite strong political will, even at the level of the Heads of State, the countries have still not reached agreement on the filling of the GERD and coordinated operation of the dams on the Blue Nile. Some of the barriers that they have faced are related to the degree of heterogeneity among actors – specifically, differences in beliefs about how the Nile should be apportioned – while others are more specific to the context (i.e., political transitions, politicization of water, and Egyptian public perception). These context-specific conditions exacerbate existing procedural barriers.

In Section 3.1, I suggest that while many of the barriers due to number of actors and degree of heterogeneity were reduced through process, heterogeneities in beliefs and identities persisted. Furthermore, the lack of trust made many barriers even more difficult to overcome. In Section 3.2, I point to ways in which trust was built through the process. In Section 3.3, I describe ways in which the context adds an additional layer of complexity to the negotiations.

3.1 Reducing Barriers Related to the Number of Actors and Degree of Heterogeneity

The conventional wisdom is that collective action in the Nile should be easier to achieve at a smaller scale (e.g., project-specific negotiations on the GERD) than at a basin-wide level (e.g., basin-wide negotiations of the CFA) because there are fewer states involved and the level of heterogeneity is likely lower among fewer, neighboring states. This has not been the case.

Although there were only a few states involved, the number (and type) of sub-state actors formally involved in the negotiations increased over time. This has been especially problematic in Egypt, where there is no consensus on how to address the issue of the GERD. Furthermore, the ‘securitization’ of the Nile forced the negotiations to shift from technical conversations focused on mitigating downstream impact to broader, political conversations about sovereign ‘rights’. This has increased heterogeneities in beliefs and identities as barriers to collective action.

This case suggests that even if the barriers to collective action are lower at a smaller scale, heterogeneity in beliefs may present an insurmountable obstacle, especially in the absence of trust. The counterargument to this is that perceived differences in beliefs – between Ethiopia and Sudan at the start of the GERD negotiations, for example – may be overcome through building trust and sharing the benefits of collective action. Sudan now officially supports the dam because the potential risks related to the dam’s physical integrity have been reduced and the benefits it can reap from the dam have been clearly communicated. Arguably, if Egypt were less dependent on the Nile, collective action could be achieved more easily because the difference in beliefs (between Egypt and Ethiopia about the use of the Nile) would not be as extreme.

In the long term, Egypt’s dependence on the Nile can be reduced through technological interventions, improved agricultural practices, and demand-side policy interventions. This may increase the zone of possible agreement in future negotiations related to Nile infrastructure. In the immediate term, however, the three countries should continue to focus on ways to reduce the barriers to collective action.

3.1.1 Number of sub-state actors

The number of actors, as defined by number of states, is low in the GERD negotiations, but the number of sub-state actors formally involved in negotiations increased over time. The Tripartite Ministerial Meetings, for example, expanded from 3-party (with just the Ministers of Water) to 6-party (including Foreign

Affairs) to 9-party (including Security/Intelligence) meetings. The countries reduced the costs of including so many actors by limiting the number of representatives from each country and by separating political and technical discussions. One of the members of the IPoE reflected that this helped make the deliberations more manageable (Interview: July 27, 2018):

In fact, the number of people, especially in Egypt, means number of institutions. And usually, they are not consistent. So it is very difficult to reach conclusion in any subject because they different and sometimes because they need to consult different institutions, and they get different answers. So a lot of complications. So by limiting the number of people who are allowed to communicate in the meeting and leading the process, that made the process easier and controlled the interruptions and made it easier, at least, to agree...

Therefore, as was the case in the CFA negotiations, the barriers related to the number of actors can be reduced and managed through process design.

3.1.2 Heterogeneity among Actors

As was the case in the CFA negotiations, heterogeneities among actors present more barriers to collective action than the number of individuals involved. That said, some sources of heterogeneity can also be more effectively reduced through process design than others.

Differences in information and capacity may present major barriers to collective action, but are comparatively easy to address. In the case of the GERD negotiations, the Eastern Nile countries attempted to reduce these gaps through a process of joint fact-finding administered by the International Panel of Experts and the Tripartite National Committees. Both of these groups were established to promote data sharing among the countries.

Heterogeneities in preferences³⁸⁴ were reduced partly through a process of negotiation and compromise, but remain significant. For example, the countries reached consensus on the Terms of Reference for the experts of the IPoE and the Terms of Reference for the consultants that would conduct the studies suggested by the IPoE. Through a process of negotiation, they also reached consensus on which consultants to select.

Heterogeneities in beliefs are far more difficult to address. Ethiopia believes its sovereign right to use the Nile water for economic development is being challenged and that Egypt is reluctant to let go of the status quo³⁸⁵. In his opening speech for the Hydropower for Sustainable Development 2011 Conference in Addis Ababa, Meles Zenawi described his country's plan to achieve zero net carbon emissions by 2025, largely through shifting to hydroelectricity. He ended his speech with, '[w]e are so convinced of the justice of our cause, so sure of the strength and rationality of our hydropower projects in eliminating poverty in our country that we will

³⁸⁴ Arguably, heterogeneities in preference at the state level were leveraged to create value in the case of the Declaration of Principles (DoP). The DoP's power trade agreement 'trades across differences' by trading Ethiopia's use of the Blue Nile to generate electricity that will then be sold to Egypt and Sudan at a lower rate.

³⁸⁵ Interview with z, Addis Ababa University (Aug. 1, 2018): "the debate is whether Ethiopia can build the dam. I'm not sure [that if] Ethiopia built the dam in one of the upper cascades, for example, that would be accepted because I know for sure in 2007 or 2008, that Egypt rejected Ethiopia's proposal to build the first cascade dam at Karadobi. This is a few hundred kilometers above the current Renaissance Dam... the World Bank was supporting if the three countries cooperated. The World Bank would give money, finances for dam building and water management. But I was in a meeting in Senegal, Dakar, Egypt said 'no, no, this is too expensive. We don't accept, we don't cooperate. Egyptian government cannot afford the price of electricity that comes out of the Karadobi dam.' Instead they opted for nuclear energy. Whatever the reasons stated by the Egyptian representative then, it was total rejection. So, the cascade dam option is not something that could be accepted by Egypt."

use every ounce of our strength, every dime of money that we can save to complete our program.’ This belief in the GERD as a driver of poverty alleviation conflicts the most with Egypt’s belief. From Egypt’s perspective, the Nile is the source of 97 percent of their water and, although it can be supplemented (through improved water management), it cannot be substituted.

Arguably, a large reason why the three countries were able to reach agreement on the 2015 Declaration of Principles was because they excluded any mention of prior agreements and water use allocations to avoid being mired down by their heterogeneities in beliefs about their ‘rights’ to Nile water (Interview: March 28, 2015). However, even after a commitment to cooperate was made (i.e., the DoP), the process continued to break down due to impasses related to the countries’ heterogeneities in beliefs. The current impasse over the Inception Report, for example, is related to which numbers should be used to model Egypt’s water use. On one side, Egypt believes that it is entitled to 55.5 BCM per year (at the very least) while, on the other side, Ethiopia cannot understand how two countries can allocate the ‘full utilization’ of the Nile to themselves without consulting their upstream neighbors. The debates that arise are not just technical ones related to numbers, but a reflection of the deep divide between the countries’ beliefs.

Heterogeneities in identity are similarly difficult to address in the course of a negotiation. Although Egyptian negotiators sometimes referred to Ethiopian stubbornness and pride, especially in being the only Nile country to have avoided colonization, and Ethiopians sometimes refer to Egyptian arrogance these perceived differences in identity was raised less frequently in descriptions of the barriers to the GERD negotiations (as compared to the CFA negotiations).

The barriers to both – heterogeneity in beliefs and in identity – can be partially overcome through trust. For example, if Egypt trusted Ethiopia, agreement would be far more easily reached on the GERD because the dam present significant benefits to the downstream countries³⁸⁶. In the absence of trust, however, any agreements would be limited in scope and very fragile.

3.2 Building Trust through Process Design

In the absence of trust, the barriers to collective action may be insurmountable (Interview: March 2, 2015):

Now what’s unfortunate now is that it’s so fractured [trust among the three countries] that they won’t even trust the information³⁸⁷. . . So, it comes back, this whole issue is, ‘is there sufficient trust? Is there sufficient certainty in information?’ And that’s what is underpinning the problems that you’re seeing at the moment.

The Blue Nile countries attempted to reduce barriers related to information asymmetry (i.e., heterogeneity in information) through joint fact-finding. However, in the absence of trust, the countries are unwilling (or unable) to share data openly. Egyptians, for example, point to how slowly Ethiopia produced the project design documents and study documents necessary for the IPoE Final Study. Sudanese and Ethiopians similarly refer to Egypt’s unwillingness to share basic water use data – with them and the consultants. This lack of transparency only further undermines trust. Perceived inconsistencies in state behavior (e.g., Morsi’s meeting on the GERD)

³⁸⁶ The countries attempted to formalize the benefits to Egypt and Sudan by including the power trade agreement in the Declaration of Principles.

³⁸⁷ Interestingly, the interviewee also pointed to the fact that the Eastern Nile have the technical capacity (within ENTRO and the NBI) to reach a technical solution to the problem but that they are unwilling to turn to these institutions due to the lack of trust among the countries: “So for the GERD, for example, the three countries have called for consultants to come in and produce the hydrology of the Eastern Nile with the GERD dam there. . . Now what’s interesting is that that already exists in two forms. If they wanted to use either ENTRO or the NBI to answer any question that they could bring to it, that [technical] ability exists but they won’t ask.” (More specifically, Egypt is unwilling work within the NBI and ENTRO, as it perceives both to favor Ethiopia.)

and ‘triggers’ (e.g., any references to the allocations under the 1959 Nile Agreement) have similarly tested trust among the countries and threaten to derail the negotiations.

However, the GERD case study supports the view that trust can be rebuilt. Meles attempted to rebuild trust by emphasizing the possibility of a ‘win-win’ outcome for the GERD, delaying Ethiopian ratification of the CFA (signaling a willingness to cooperate as a region) and establishing the IPoE. Ethiopia also gained Sudan’s trust by conducting public consultations in Khartoum and by changing the dam’s design to address Sudanese concerns about the structural integrity of the dam³⁸⁸. When trust was lost between Egypt and Ethiopia after Morsi’s meeting on the GERD, Egyptian negotiators were quick to communicate with their Ethiopian counterparts that Morsi’s statements were not reflective of the official Egyptian position. They even communicated politically sensitive information (i.e., that Morsi would soon be replaced) in an effort to restore trust with their upstream neighbor. The Heads of State also played a critical role in building trust in the region by signing the Declaration of Principles and through emphasizing the need for cooperation over conflict. Despite being riddled with breakdowns, the process of joint fact-finding and inclusion of international consultants and experts has also helped to restore trust among the countries by demonstrating their mutual commitment to a negotiated agreement.

Several Sudanese and Ethiopian negotiators suggested that the GERD experience is building trust among the three countries. From their perspective, going through a few similar processes will help build enough trust in the region to enable collective action (Interview: July 26, 2018):

I think the GERD will help resolve the pending issues in the CFA. The experience of the GERD, like the issue of Planned Measures has already been resolved. We can sit together and codify the process and put it as a law. How we sit together, how we review the design, how we exchange information... we can come up with a very acceptable [process] based on the experience of the GERD.

In short, their argument is that, if all else fails, trust will be built over time through repeated interactions. This response is not likely to be well received by Egyptians, but there is truth to it. Where commitments (e.g., Declaration of Principles) and words (e.g., political statements by Heads of State) fail, trust can be built through experience. Ideally, trust among the countries would have been built through joint project planning under the Nile Basin Initiative. However, as long as Egypt remains separate from the NBI, the only experience these countries can gain is by working together project-by-project. If the political and public will exists in all three countries, the Eastern Nile countries can build trust through joint project planning, thereby ensuring that the benefits of cooperation are maximized and that any potential risks are mitigated. If not, the Eastern Nile will have to suffer awkward growing pains as Ethiopia continues to build its cascade of dams and Sudan and Egypt cooperate (in reaction). Either way, assuming that the filling and operation of the GERD does not significantly harm the downstream countries, trust may be built over time.

3.3 Political transition, politicization, and Egyptian public perception

Three context-specific conditions have further complicated the GERD negotiations. First, all three countries have gone through significant political transitions since the start of the negotiations. Second, securitizing the Nile shifted the nature of the discussions from technical to political. Third, Egyptian public perception is firmly rooted against the GERD, thereby forcing Egyptian negotiators to push discussions about the GERD into zero-sum negotiation.

3.3.1 Political transitions

³⁸⁸ Arguably, it is easier to win Sudan’s trust because Sudan stands to significantly benefit from the dam, whereas the benefits to Egypt are far more limited.

Over the past decade, Egypt has had three Presidents – Mubarak, Morsi, and El-Sisi; Ethiopia has had three Prime Ministers – Zenawi, Desalegn, and Ahmed; and Sudan’s thirty year rule by al-Bashir came to an end earlier this year (2019)³⁸⁹. On one hand, each political transition allows the incoming Head of State to ‘reset’ the tone of the negotiations and distinguish themselves from the former Head of State. For example, the window of opportunity for drafting and signing the Declaration of Principles opened when El-Sisi replaced Morsi. An equally strong statement of cooperation by El-Sisi was needed to counteract Morsi’s saber rattling. On the other hand, political transitions may have a negative impact on the negotiations by slowing them down as the respective government scrambles to recover from the transition. For examples, negotiations are currently stalled while Sudan goes through its transition.

Political transitions may also lead to shifts in regional politics, thereby indirectly affecting the negotiations. From the Egyptian perspective, Sudan’s position on the Nile shifted as a result of Egypt’s political transition. Egypt and Sudan have historically been bound on Nile issues by the 1929 and 1959 Nile Agreements. For most of the CFA negotiations, Egypt and Sudan were perceived to negotiate from the same position. This was also true in the early stages of the GERD negotiations. However, in December of 2013, al-Bashir made his first strong statement in support of the dam. This was perceived to be a break from the Egyptian position and the first signs of fracture of their united downstream front. From the Egyptian perspective³⁹⁰, Sudan shifted away from Egypt and towards Ethiopia on the Nile issue after Morsi’s regime was replaced in June of 2013. This is perceived to be because al-Bashir supported the Muslim Brotherhood³⁹¹, as evidenced by the fact that he granted asylum to many of the Egyptian members of the Muslim Brotherhood that were exiled from Egypt after the 2013 revolution³⁹².

³⁸⁹ This level of political transition in the Eastern Nile over the past decade is uncharacteristically high. In Sudan, al-Bashir ruled for thirty years (from 1989-2019); in Egypt, Hosni Mubarak ruled for thirty years 1981 – 2011); and in Ethiopia, Meles Zenawi ruled for twenty-one years (1991 – 2012), replacing 17 years of military rule by the Derg (1974-1991). Furthermore, South Sudan gained its independence from Sudan in 2011.

³⁹⁰ Interview with former mid-level official within the Egyptian Ministry of Foreign Affairs (July 1, 2018): “It has nothing to do with the Nile water negotiations. It’s about politics. After 2013, when Muslim Brotherhood was removed from power in Egypt and then the Americans had a stance against the new regime in Egypt and the Americans, Qataris, and Turkey started to support Ethiopia. And Sudan needed the support of the West... and also because the regime in Sudan, in principle, is part of the Muslim Brotherhood. Omar Bashir used to be part of the Muslim Brotherhood and Hassan al-Turabi at that time was alive. So they went to the other camp and, since then, they have been in the other camp. Yes, the relation seems to be good between Egypt and Sudan sometimes but of course there is a problem. There’s problems with Halayeb on the borders and there’s some tension every now and then. I never put Sudan and Egypt in one sentence with regard to the water. Now I have the freedom to say that Sudan is like the agent of Ethiopia... Sudan can sign the CFA as it is. Don’t be surprised if you see Sudan signing the CFA or taking a radical stance in regard to GERD.”

³⁹¹ Al-Bashir came into power in 1989 after coordinating with Hassan al-Turabi, a leader of the Sudanese branch of the Muslim Brotherhood.

³⁹² The Sudanese position is more complicated. There are two competing narratives within Sudan about the GERD. The first, representative of Sudan’s perceived position at the start of the negotiations, is that the dam will cause negative downstream impacts and significantly harm both Sudan and Egypt. This is a view held by several water experts that represented Sudan early on in the negotiations. The second, representative of Sudan’s current official position, is that Sudan has its own interest in the negotiations – it is not aligned with Egypt or Ethiopia. This narrative points to Ethiopia’s adjustments to the dam design (as suggested by Sudan) as an example of initial Sudanese concerns being addressed and points to all the potential benefits that can be realized in Sudan from the dam’s construction. From this perspective, Sudan is not aligned with Egypt or Ethiopia – it agrees or disagrees with them on different issues based on its own interests. Interview with senior official in Sudan’s Ministry of Water (Interview: July 23, 2018): “This [perception that Sudan has ‘shifted’ its position from anti-dam/pro-Egypt to pro-dam/anti-Egypt] is speculation of the media. In Sudan, you can’t say we all have the same opinion. We have some that say the dam is right at the border and if anything goes wrong, it is a catastrophe. But Sudan as a government - Ethiopia informed us and Egypt and from day one we realized this dam would be beneficial to Sudan. Even the President said this publicly. Not from speculation. Ethiopians built the Tekeze Dam in the Upper Atbara. It is a seasonal river and in the past, before building the Tekeze, water comes to people only in the rainy season and many months that this river goes dry. Why they built this dam and started power generation - now we have water throughout the year. This has been taken as a benefit for Sudan. Concept that Sudan changed its mind is not true. Now, we maybe have 1 engineer, 1 lawyer and maybe an economist that say dam is not beneficial.”

In summary, the frequent political transformations within the Eastern Nile have had a direct and indirect effect on the negotiations. Political change may hamper negotiations or create windows of opportunity in which the new Heads of State are eager to reach an agreement to show that they can effect significant progress on the Nile issue (as compared to their predecessor).

3.3.2 *'One plus one equals two'*

When the GERD negotiations first began, in 2011, the discussions were among technical experts – the Ministers of Water and the Panel of Experts. Over time, the negotiations expanded to include more political sub-state actors – the Heads of State, the Ministries of Foreign Affairs, and the Security/Intelligence apparatus of each country. This expansion was in response to a request by Egypt. From the Egyptian perspective, Nile water is a matter of national security, and negotiations will be more efficient if all the relevant sub-state actors are formally included. Within Egypt, negotiations are led by the Ministry of Foreign Affairs³⁹³. The Egyptian Minister of Water is perceived (by Ethiopian and Sudanese negotiators) to have very limited decision-making power within the negotiations.

Although representatives of these institutions were (informally) involved in the negotiations from the beginning³⁹⁴, Ethiopia was resistant to the idea of formally including Foreign Affairs and Intelligence. First, because this expansion is perceived (by Ethiopians) to slow down the negotiations because the other Ministers often lack the technical capacity to effectively negotiate on the GERD³⁹⁵. Second, because their inclusion changes the nature of the negotiations (Interview: July 31, 2018):

In Ethiopia, we say the issue of water in Ethiopia and the Nile is technical, not political. Because if it is technical, it will have a solution... If it is technical, one plus one is two. It will never be three and it can never be one. But in politics it can be. For that reason, we didn't want the foreign affairs to be involved.

If the 'problem' of Nile water is perceived to be a technical problem, there are win-win scenarios for the countries. If Egypt agrees to store less water in the High Aswan Dam, storing it in the Ethiopian highlands instead, less Nile water would be 'lost' due to evaporation. Ethiopia could then release Blue Nile water downstream as needed. When the Nile is politicized, on the other hand, the issue of Nile water can easily shift into a zero-sum negotiation in which any water used by Sudan or Ethiopia is perceived to be 'taken' from Egypt's share. As a result, heterogeneities in beliefs about who has a 'right' to Nile water rise to the surface of every conversation, leaving little room for a technical solution. This is presumably why the countries separated the political and technical discussions when the political discussions reached an impasse³⁹⁶.

³⁹³ In Ethiopia and Sudan, on the other hand, the Ministers of Water are still very influential within the negotiations.

³⁹⁴ Interview with senior official in Sudan's Ministry of Water (Interview: July 26, 2018): "...in reality, they [Ministries of Foreign Affairs, Water, and Intelligence] are there all the time. But now the heads are around. But all of our representations - Egypt, Ethiopia, and Sudan - those three corners are always there... it's not something new. They were all present in all the discussions."

³⁹⁵ This sentiment was reiterated by an Ethiopian member of the TNC (Interview: Aug. 2, 2018): "Well, Egypt wanted to raise it to the political level. I personally did not like that move. On our part, we said it is a technical issue and should stay technical. We are talking about a hydropower dam and introducing security and foreign affairs won't help in negotiations. But now discussions have grown very high into the foreign ministers and now the security chiefs are part of this 9-party. This complicates issues. It's difficult to bring these people [foreign affairs and security] up to level of understanding of the technical people, which we have been discussing the past 6-7 years. The purpose of that is not very clear, but since that was decided at the heads of state level, this is the situation."

³⁹⁶ The experience of the National Independent Scientific Research Group also suggests that differences in preferences can be more easily reduced within technical negotiations than within political negotiations. Although the Group reached consensus on a filling strategy for the dam through deliberation and modeling, this solution was not politically feasible because Egypt needed more of a guarantee that it will not suffer any harm.

The political will may exist among the current Heads of State or among Ministers who recognize that there are technical solutions. Assuming this is the case, the public must also support the agreement.

3.3.3 Egyptian Public Perception

A third confounding characteristic of the Eastern Nile is the Egyptian public perception on the GERD. To Egyptians, the Nile is very much a ‘matter of life or death’. As it is, Egypt faces an acute threat to its water and food security. In 2012, the United Nations predicted that Egypt could very well face absolute water scarcity by 2025 due to population rise and increased use related to urbanization. According to Egyptian government population estimations, its population is projected to reach 98.7 million in 2025 (Cunningham 2012). This rapid population growth only increases the existing strain on Egypt’s limited water resources and agriculture³⁹⁷.

Agriculture consumes approximately 86 percent of Egypt’s water (Mahmoud 2017). Historically, agriculture was a critical component of Egypt’s economy, but this has changed over time. Agriculture’s contribution to the economy fell from 19.4 percent of GDP in 1990 to 11.2 percent of GDP in 2015 (WB 2017). Similarly, the percentage of total employment in agriculture fell from 39 percent (in 1990) to 26 percent (in 2015) (WB 2017). It is important to remember, however, that agriculture still employs approximately one quarter of the population in Egypt.

A threat to Egypt’s water is not only a threat to its water security, but also to its food security and domestic stability. If agriculture is negatively impacted, millions of Egyptians in rural areas will be forced to move into cities in search of employment. This, in turn, may lead to social instability. Given the fact that Egypt has already gone through two revolutions in the past decade, political leaders are understandably hesitant to do anything that may be the source of public disapproval.

From the Ethiopian perspective, Egyptian negotiators are reticent to allay the fears of the Egyptian public even after seeing that the GERD will not necessarily pose a significant threat if the countries agree on how to fill and operate the dam. Some perceive this to reflect the Egyptians’ fear of public perception³⁹⁸. The Egyptian perspective is more complicated. There is no option of ‘winning’ from the Egyptian negotiator perspective (Interview³⁹⁹: July 13, 2018):

There’s a misperception in Ethiopia. They think that a strong government in Egypt can handle the Egyptian people and if there is a crisis, it will be contained. But when it comes to water, this is not true. No single politician, or President, or government can take the responsibility of allowing others to take part in the Egyptian share of water. And if they accept, they will be removed the next day. Or, the other option is that the people put pressure on the President to act differently, but this is also not in the favor of Ethiopian. This is what Ethiopians don’t want to understand... If you keep putting pressure on Egypt and think the government here will handle this, this is a very dangerous misperception... there are two options. To try to contain the anger and control the people, and they will fail. Or going with the flow, and accepting the pressure of the people, and act in whatever way to protect Egypt’s water security. There is no playing in this area. This is... like playing with fire.

³⁹⁷ Egypt’s Nile Delta, a major source of the country’s agriculture, is also under threat due to saltwater intrusion related to sea level rise from climate change.

³⁹⁸ Interview on July 31, 2018: “Maybe because they [Egyptian negotiators] don’t want to expose themselves or they want to align themselves with the public perception. They always fear some sort of fire back [i.e., backfire] from the public. They don’t have the guts to come out and stand say, ‘okay, this is the situation.’ They always need some sort of face saving. They always want to hide behind the perception.”

³⁹⁹ Interview with former mid-level official at the Egyptian Ministry of Foreign Affairs.

Similarly, while some Egyptian technical experts privately admit that technical solutions do exist, the fear of being perceived to be anti-government or anti-Egypt makes them reticent to share their opinions in public. As a result, there are very few forces acting on the public to change its perception.

If the Egyptian public supported the dam, Egypt would have the political maneuverability to reach agreement with its upstream neighbors. However, most Egyptians perceive the dam to be an existential threat. Egyptian negotiators must ensure the security of the Egyptian public or establish enough trust with the public that the public knows that the negotiators have their best interest in mind⁴⁰⁰. Neither of these is likely in the immediate future.

...

Where does this leave the Eastern Nile countries? One interpretation is that no real cooperation is occurring along the Blue Nile. Egypt is no closer to reaching agreement with its upstream neighbors – Ethiopia and Sudan – than it was in 2011. According to this view, the heterogeneities in beliefs and identities, combined with the high level of mistrust, will prevent the countries from reaching an agreement on the filling and joint operation of the GERD until the costs of non-cooperation are greater than the costs of cooperation. In other words, the best case scenario is that the three countries will reach an agreement just before Ethiopia begins filling the dam. From this perspective, the GERD negotiation is only the first in a series of negotiations in which Egypt is ‘forced’ to the negotiating table as Ethiopia continues constructing a cascade of dams along the Blue Nile (upstream of the GERD).

I hold a second view, which is that the process has helped reduce some barriers to collective action related to degrees of heterogeneity among the actors and has helped rebuild some trust (at least at the level of the Heads of State and among the technical experts involved). My hope is that by delineating the barriers to collective action, we can start to identify ways in which state and non-state actors can help to reduce these heterogeneities as barriers, while also building trust among the publics of the countries. While this will still not ensure collective action (because even the best processes can be derailed by external factors), there may be opportunities to create more of an enabling environment for collective action to occur.

In the next, and final, chapter, I review the two cases using the five prescriptive lenses – institutional, procedural, realist, idealist, and utilitarian – to cooperation and apply them to the Nile to consider how multi-track water diplomacy can enable collective action. I then propose a simple model, which takes account of both procedural and non-procedural barriers, to be used to systematically analyze water interactions. Identifying each of these barriers and the scales at which they occur can help identify the role of state- and non-state actors in creating a more enabling environment for collective action.

⁴⁰⁰ However, the drastic political changes within Egypt, have led to significant mid-level bureaucratic reshuffling so that few mid-level politicians have much political weight with the public.

CHAPTER FIVE. DEMYSTIFYING COLLECTIVE ACTION

We know that demand for water in almost every region will soon exceed supply and that climate change will make existing supplies more uncertain. Yet, we still seem unable to act collectively to manage our existing water resources in a way that will allow us to meet our mutual needs.

The obvious reason is that we are rational egoists – we (mostly) act to maximize our self-interest. Garrett Hardin (1968) explained that if our individual decisions are unregulated, we will end up with the *tragedy of the commons*. According to Hardin, the only ways to avoid it are through regulation by a *Leviathan* (i.e. government) or by allowing the market to set prices (i.e. price natural resources to disincentivize overuse). What does this mean, though, for transboundary water governance, where there is no higher authority to which sovereign states must defer and no way to depend on global markets to set prices?

More than forty percent of the world's population lives in one of 286 transboundary river basins (UNEP-DHI and UNEP 2016). The only form of regulation on each countries' transboundary water use comes through 'voluntary'⁴⁰¹, self-enforcing agreements that the states make among themselves. In other words, the only solution to managing transboundary waters is through collective action. However, collective action is not easily achieved. It requires states to look beyond their national self-interests to take account of their collective interests. This is presumably why, of these 286 basins, less than half have any type of multistate treaty in place. Of those that do, the majority are just bilateral. The preponderance of bilateral treaties seems to support Olsons's (1965) conclusion that voluntary collective action can only be achieved among a few actors at a time. As the number of actors increases, so do the transaction costs, the likelihood of free riding, and the diffusion of benefits, presumably making collective action more difficult to achieve.

While the existing pattern of (mostly) bilateral agreements may have been sufficient in the past, it has produced fragmented water governance regimes that are increasingly dysfunctional. As the demand for water increases, and as the supply becomes more uncertain due to climate change, the likelihood that conflict will arise over that allocation of existing supplies may also increase. Furthermore, while exclusive rules of use may have been tolerated before, they are now being challenged in pursuit of 'equitable and reasonable' utilization, in part driven by relatively recent global treaties. More comprehensive, inclusive, and flexible water treaties are needed.

The challenge, then, is not only to achieve collective action, but to achieve it among many states that share common transboundary waters. Ostrom's work (1990) on common pool resources suggests that collective management of natural resources is possible (without enforcement by a central political authority), even in large groups. She concludes that the number of actors is less important than other factors such as homogeneity among the states involved in negotiations. Drawing from the work of both Olson and Ostrom, I consider how these two variables – the number of actors and the degree of heterogeneity among them – affect collective action with regard to the management of transboundary waters.

My research centers on three countries – Egypt, Ethiopia, and Sudan – and their efforts to pursue collective action. From 1997 until 2010, they were among the nine Nile Basin countries involved in a basin-wide effort to collectively develop a Cooperative Framework Agreement (CFA) that would ensure 'equitable and reasonable' utilization in all the basin countries. When they were unable to achieve agreement as a basin, they reverted to unilaterally developing their individual hydraulic infrastructures. It is possible that the status quo – Nile use by the downstream countries – would have continued for several more decades had it not been challenged by Ethiopia. In 2011, Ethiopia announced the unilateral construction of the Grand Ethiopian Renaissance Dam (GERD), a hydroelectric dam on the Blue Nile with the capacity to hold 74 BCM of water.

⁴⁰¹ This comes with a small disclaimer that some bilateral agreements were created under coercion – either by a colonizing power or because one country 'pressured' another to accept the agreement.

The three Blue Nile countries have subsequently engaged in a collective effort to manage these waters at a smaller scale.

Efforts to achieve collective action at these two scales demonstrate an underlying tension between efficacy and efficiency. Basin-wide agreements are arguably more effective because they allow countries to optimize their water use across a larger geographic area. However, if the barriers to pursuing collective action at a basin-wide scale are too high, it makes more sense to pursue collective action at smaller scales (assuming the barriers to collective action at the smaller scale are lower). Bilateral or trilateral agreements are more efficient because there are lower transaction costs associated with pursuing collective action among a smaller number of actors (Olson 1965). If, however, barriers to collective action can be reduced below an unworkable threshold, basin-wide agreements may be worth pursuing, despite the costs. So, it is important to understand what this threshold might be and how the barriers involved might be lowered.

I consider barriers to collective action within two transboundary water negotiations in the Nile - the basin-wide negotiations on the CFA (1997 – 2010) and the ongoing project-specific negotiations related to the GERD. Many barriers to collective action can be reduced through procedural and institutional interventions. In Part I of this chapter I return to the five hydropolitical prescriptive lenses – institutionalist, idealist, realist, utilitarian and proceduralist I described at the outset – and apply them to the Nile. I demonstrate that each approach is insufficient on its own, but helpful. In Part II, I consider the extent to which barriers to collective action can be affected by scale, focusing on the number and heterogeneity of actors⁴⁰². I briefly review ways in which these barriers were reduced, concluding that the scale at which collective action is pursued is not itself an inhibiting factor. Despite significant reductions in many of the barriers, the countries involved have been unable to achieve consensus at either scale, suggesting that procedural and institutional interventions have thus far been insufficient. I include a closer look at the context-specific barriers that have been hard to reduce to a manageable threshold level. In Part III, I offer a simple model that can be used to systematically analyze water ‘conflict’ situations, taking note of both general and context-specific barriers (Section 3.1) and the scales at which these barriers occur (Section 3.2). I suggest that these types of systematic analyses may identify opportunities for multi-track water diplomacy. My overarching goal is to demonstrate the importance of identifying the barriers to collective action in the Nile region that still need to be lowered and possible short- and long-term interventions that can help to do this.

I. Reengaging the Theoretical Frameworks

There are two critical preconditions to collective action in transboundary water governance – first, the countries have to see a need to cooperate, and second, they have to be able to reach agreement.

A unique characteristic of the Nile Basin is that the countries that have historically been the predominant users of the Nile – Egypt and Sudan – are also the furthest downstream. Furthermore, the Nile is the source of 97 percent of Egypt’s water. Thus, Egypt depends on its upstream neighbors for its survival. It can either coerce them into doing what it wants or it can cooperate with them. A country like China, on the other hand, which has both the capacity to develop its water infrastructure according to its own interests and the geographic advantage of being upstream, has no need to cooperate with its downstream neighbors in the Mekong River Basin.

Transboundary water also needs to be of substantial importance to the state involved. Collective action – or any kind of diplomacy – takes time and resources. Countries may have more pressing items on their agendas (e.g., regional security, trade, etc.) that take precedence over water. Therefore, this discussion comes with the caveat that collective action will not necessarily occur just because that barriers have been reduced to a manageable level. The potential benefits of cooperation need to also be perceived to be greater than the costs and the costs of non-cooperation need to be perceived to be greater than the costs of cooperation.

⁴⁰² I define heterogeneity across five dimensions – capabilities, information, preferences, beliefs, and identities.

1.1 Negotiating at Two Scales: Basin-Wide and Project Specific

I compared two separate, but related, negotiations at two different scales – the basin-wide negotiations over the Nile Basin Cooperative Framework Agreement and the project-specific negotiations regarding the Grand Ethiopian Renaissance Dam. In the first, nine countries with their own national agendas and interests came together in an effort to jointly define their common interests in relation to use of the Nile River. The process was heavily supported by international organizations – specifically, the Canadian International Development Agency (CIDA), the United Nations Development Program (UNDP) and the World Bank. The process of drafting an agreement and negotiating over a new legal framework was also supplemented by the creation of the Nile Basin Initiative (NBI), a transitional arrangement aimed at setting the foundation for a permanent river basin organization. By separating the political/legal (i.e. CFA) and technical (i.e. NBI) tracks, the countries and donors hoped to ensure success at least at one of these levels. After thirteen years (1997 – 2010) the nine sovereign states splintered over the issue of Water Security (Article 14b) and were reduced to two factions – upstream and downstream.

The downstream countries (Egypt and Sudan) wanted a guarantee that the new basin-wide Cooperative Framework Agreement would not reduce their existing water use levels under the 1959 Nile Agreement for the Full Utilization of the Nile – 55.5 billion cubic meters (BCM) to Egypt and 18.5 BCM to Sudan. The upstream countries, on the other hand, wanted to usher in a new era of water use that would modify the status quo. In 2010, six upstream countries – Ethiopia, Uganda, Rwanda, Burundi, Tanzania, and Kenya⁴⁰³ – signed a version of the CFA that included all the provisions on which consensus had been reached, while saving Article 14(b) on Water Security for future resolution by the new permanent river basin organization once it was established. Concerned that their existing and future water use was not ensured by the CFA, the downstream countries – Egypt and Sudan – refused to sign, and subsequently withdrew from the NBI.

The CFA requires signatures and ratification by six countries to come into force. It has so far been ratified by Ethiopia, Rwanda, and Tanzania. The NBI continues to function as a transitional arrangement and will only be converted into a permanent institution once the CFA is ratified. Thus, the efficacy of both institutions – the CFA and the NBI (or future river basin organization) – is limited in the absence of support by the downstream countries⁴⁰⁴.

The second negotiation process, which is still ongoing (as of June 2019), involves just the three countries on the Blue Nile – Egypt, Ethiopia, and Sudan – and focuses on the filling and operation of the GERD. Although the countries invited international experts and consultants to help, they did not involve international agencies (by design). Arguably, the process of negotiations on the GERD should have faced fewer obstacles given the smaller number of actors. In addition, the heterogeneities among the three countries were significantly lower at the start of the process (as compared to the start of the CFA negotiations). Additionally, the political will among the Blue Nile countries to resolve their ‘conflict’⁴⁰⁵ through cooperation appeared to be much higher, and the costs/benefits/risks of cooperation and of non-cooperation were more easily quantifiable. In 2015, the Heads of States of the three countries signed a Declaration of Principles (DoP), a commitment by all three countries to resolve their conflict diplomatically. Many of the principles included in the DoP are similar to the principles contained in the CFA – but it still excludes any mention of water use levels specified by prior agreements (i.e., the 1929 and 1959 Nile Agreements).

⁴⁰³ Eritrea participated as an observer in the process. The Democratic Republic of Congo has also not signed the CFA but participates in NBI.

⁴⁰⁴ Sudan rejoined the NBI in 2013, and South Sudan joined in 2012. Eritrea, which has very little stake in the Nile, participates as an observer. Egypt is currently the only Nile Basin country that is not currently a member of the NBI.

⁴⁰⁵ For lack of a better term, I have used ‘conflict’ throughout this chapter to represent the conflicting positions over the GERD but with the added clarification that I am not suggesting the countries will resort to military conflict over the dam if agreement is not reached. The general trend of the countries is towards resolving the conflict diplomatically, through regional cooperation.

Despite eight years of negotiation (2011 – 2019), the three countries have still not reached agreement on how to fill the GERD or how to operate the GERD in conjunction with dams downstream. Ethiopia has an interest in filling the dam as quickly as possible to start generating electricity for domestic use and to sell to neighboring countries. Sudan, originally concerned with the safety of the dam, stands to significantly benefit from the GERD. The dam not only represents a potential source of energy, but will also reduce siltation (thereby improving the operation of Sudan’s three dams on the Blue Nile – the Sennar, Roseires, and Merowe dams), reduce flooding, and regularize the flow of the highly variable Blue Nile (thereby allowing Sudan to significantly increase its agricultural production). In short, because of the GERD, Sudan will be able to use its full allocation of 18.5 billion cubic meters (as defined by the 1959 Nile Agreement). Egypt, the most downstream country, prefers Ethiopia to fill the dam slowly to reduce any potential decreases in the flow of the river. In the short term, although Egypt could benefit from purchasing electricity from Ethiopia, the filling of the GERD represents a threat to electricity generation at the High Aswan Dam in Egypt and may reduce the amount of water available. Furthermore, Egypt is concerned that any significant reductions in Nile flow will lead to increased salinity, as the Nile flow is important to flushing out the natural build-up of salts in the soil. This could negatively impact agricultural production in Egypt⁴⁰⁶. In addition, in the long term, increased agricultural production in Sudan will prevent Egypt from using Sudan’s previously unused allocation for agricultural use. Although the agricultural sector only contributes to 11.2 percent of Egypt’s GDP (WB 2017), it employs approximately one quarter of Egypt’s population. Therefore, the dam represents a potential threat to Egypt’s water, food, and socioeconomic security.

The current negotiations on the GERD are at an impasse for two reasons. First, the countries are unable to agree on how to conduct the necessary studies needed to mitigate the downstream impacts of the dam. Second, they are unable to agree on how to fill or operate the dam. The construction of the dam was initially expected to be completed by the end of 2015. Due to construction delays and technical problems, Ethiopia now expects the dam to be completed in 2022 (GCR 2018). However, electricity generation is still expected to begin through two of the GERD’s turbines in 2020. This leaves the countries one year to reach an agreement on filling the dam. Unfortunately, the negotiations are further delayed due to the current political transition in Sudan.

One view is that nothing has changed in the Nile region. Egypt is still insisting on its historic use of the Nile (as defined by the 1929 and 1959 Nile Agreements), Ethiopia is still insisting on its sovereign right to develop what it views as its water resources. The easy, or obvious explanation for why collective action has not been achieved on the GERD is that the countries are too far apart in their beliefs about how the Nile water should be apportioned, and they do not trust each other, making negotiation almost impossible. This answer gives water diplomacy practitioners and scholars very little to work with – changing beliefs and building trust both require a very long time. Deconstructing the barriers to collective action more carefully, and understanding the kinds of interventions that might still be helpful in the short run, reveal some encouraging opportunities for forward movement.

1.2 Reintroducing the Five Prescriptive Lenses

Hydropolitics, or the systematic study of conflict and cooperation over transboundary water, has increased substantially since the turn of the century (Chapter 1). In this section, I focus on five ‘prescriptive’ streams of hydropolitics – institutionalist, idealist, realist, utilitarian, and proceduralist – and apply them to the situation in the Nile Basin.

The first approach, the institutionalist approach, is the most common approach to enabling cooperation. Institutionalists fundamentally believe that many of the barriers to cooperation can be reduced

⁴⁰⁶ This point is disputed by many Ethiopian and Sudanese water experts, who suggest that increased salinity in the Nile Delta is related more so to existing agricultural practices and saltwater intrusion due to sea level rise.

through the establishment or re-design of institutions – defined here as laws and organizations. The 1929 and 1959 Nile Agreements, the CFA, and the NBI are all institutionalist responses to enabling collective action in the Nile region (Brunnee and Toope 2002; Paisley and Henshaw 2013; Salman 2018). Institutions can help reduce information asymmetries (i.e. heterogeneities in information), establish clear rules, and monitor and enforce compliance to reduce the likelihood of free riding. On the other hand, they are costly to implement and, as is the case in the Nile, their efficacy is limited when they do not encompass all the basin countries. From an institutionalist lens, establishing a river basin organization and a basin-wide treaty would facilitate collective action by ensuring that the countries all have access to the same hydraulic data and by providing support to jointly develop infrastructure. It would also help reduce the likelihood of conflict by establishing formalized mechanisms for conflict resolution.

The second approach, the idealist approach, focuses on developing an overarching ideology that brings individuals together to collectively pursue their ‘common good’. Within transboundary water management, an idealist approach might emphasize democratic ideals in water management (e.g., David Lilienthal’s focus of the Tennessee Valley Authority), basin-wide economic development (i.e. Integrated Water Resources management), or general principles that are collectively defined. In the case of the Nile, for example, the countries came together in the CFA negotiations in pursuit of ‘equitable and reasonable utilization’. On one hand, ideals must be flexible enough to garner wide support. On the other hand, when they are overly ambiguous (e.g., the concept of ‘Water Security’ in the case of the CFA negotiations), they lose meaning. If the heterogeneities in beliefs are too great (and conflicting), the ambiguity in the ideal may lead to further fracturing of positions. Furthermore, ideals take time to clarify and garner support.

The third approach, the realist approach, focuses on the role of power in shaping transboundary water interactions. The strength of the realist prescriptive lens is in its evaluative, rather than prescriptive function, although it does identify ways in which power can be leveraged through ‘hegemonic’ and ‘counterhegemonic’ moves. By pointing to sources of asymmetries in power, critical hydropolitical scholars identify ways in which transboundary water interactions may be considered more ‘fair’ or ‘just’ by the participants involved (Zeitoun et al. 2014). From the realist perspective, Egypt is the hydrohegemon of the Basin and has successfully coerced⁴⁰⁷ other countries into a water use regime within the Basin that prioritizes its use over that of others (Zeitoun and Warner 2006; Cascão 2008). In this view, Egypt has historically had the most power across three (out of four) measures – material power (i.e. economic, military, technological power, and international political and financial support); bargaining power (i.e. capability to control the rules of the game and set agendas) and ideational power (i.e. power over imposing and legitimizing particular ideas and narratives)⁴⁰⁸ (Cascão and Zeitoun 2010). Under this view, it could be argued that Egypt never had the intention to change the rules of the game with regard to water use in the Nile and that its request to renegotiate principles related to prior notification and amendments by consensus were delaying tactics used to maintain its ‘hegemonic’ position. Its participation in any effort that might change the status quo would then need to be coerced or incentivized.

The fourth approach, the utilitarian approach, assumes that individuals are rational egoists who will cooperate if the collective benefits of cooperation are distributed in a way that the individual benefits outweigh the individual costs⁴⁰⁹. In the case of the Nile, a utilitarian might assume that collective action will be more easily achieved on a specific project (e.g., GERD) because the costs, benefits, and risks can be more easily identified and potentially quantified.

⁴⁰⁷ Coerced through legal agreement (1959 Nile Agreement) and through mutually beneficial cooperation (e.g., Egypt supported electricity grid from Uganda.)

⁴⁰⁸ The fourth measure is geographical power (based on riparian position). In their analysis, Egypt is the hydrohegemon because it has significantly greater material, bargaining, and ideational power than the other Basin countries. In contrast, Ethiopia has high geographical power (as the upstream riparian) and high bargaining power (because 85 percent of the Nile originates in Ethiopian highlands), but it has low material and ideational power.

⁴⁰⁹ Within the literature on transboundary water attention, there has been increased attention to the fair distribution of costs, benefits, and risks within utilitarian prescriptions, but ‘fairness’ is not necessarily a prerequisite of the utilitarian approach.

The fifth approach, the proceduralist/negotiated approach, assumes that there will be conflicting demands over water. This approach applies mutual gains negotiation principles to try to resolve differences before they lead to conflict. This approach also emphasizes value creation, benefit sharing, trading across differences, and establishing a ‘fair’ negotiation process. It pays more attention to the design of the agreement-getting process – inclusion of all the participants, ‘neutral’ facilitation or mediation, and support by third parties (usually international development organizations). A more recent offshoot of this approach is ‘water diplomacy’, which focuses on interventions by both state and non-state actors to reduce the likelihood of water conflict (Spector 2000; Islam and Susskind 2013; Huntjens and de Man 2017; Molnar et al. 2017). In the case of the Nile, the process design decisions of the CFA negotiation (inclusion of all the Basin countries, mediation by UNDP and the World Bank, and additional legal and technical capacity) reflect proceduralist prescriptions.

These five prescriptive approaches are not mutually exclusive, but have different foci (Table 14).

Table 14. Five Prescriptive Lenses Applied to the Nile

Prescriptive Approaches	Perceived barriers	Focus	Applied to the Nile
Institutionalist	Lack of data	Reduce transaction costs	Institutions established in the Nile include the 1929 and 1959 Nile Agreements; the Nile Basin Initiative, the Cooperative Framework Agreement, and the Declaration of Principles on the GERD.
Idealist	Different perceptions of the ‘common good’	Unifying ideology	‘equitable and reasonable utilization’ ‘water security’
Realist	Hegemony	Balance Power	(i) Egyptian hegemony established by the 1929 and 1959 Nile Agreements; (ii) Counter-hegemonic moves: Construction of GERD, redefining the ‘rules of the game’ through coalition building during the CFA negotiations. (iii) ‘Securitization’ of the GERD by Egypt.
Utilitarian	Unfair distribution of benefits/costs	Benefit sharing	Review of studies describing what each of the countries could gain through benefit sharing: this section will describe what each country gains/loses from GERD.
Proceduralist /Negotiated	Inefficient or unfair process	Good process design	(i) Reduce differences in technical and negotiating capacities in CFA negotiations; (ii) Mediation or facilitation by a professional ‘neutral’; (iii) Inclusion of all Nile Basin states.

My intention is not to suggest that one of these approaches is likely to more effective than the others, but rather that analyses of water conflict situations should take all of them into account when developing prescriptions. In the long term, collective action is easiest when all the actors have the same idea of what the ‘common good’ requires (idealist lens). This is most likely to work when the actors themselves define the common good through a process of deliberation and negotiation⁴¹⁰. Proceduralist interventions are critical to ensuring that the ‘rules of the game’ are set by all the participants through a fair, and balanced, process

⁴¹⁰ For example, although the 1997 UN Watercourses Convention exists, the Nile countries chose to define what ‘equitable and reasonable utilization’ (a globally recognized ideal) specifically meant in the Nile Basin by drafting and negotiating the Cooperative Framework Agreement.

(proceduralist lens). This requires taking differences in bargaining and ideational power into account (realist lens) and ensuring that the individuals engaged in the negotiations have access to the technical support they need and that no single actor dominates or controls the process. Aside from being a normative goal, this attention to fairness also comes from a pragmatic recognition that agreements are more likely to be self-reinforcing when the participants perceive the process to be fair (Susskind and Cruikshank 1987). Ideally, the process leads to the establishment of a river basin organization that can help enforce the agreement and extend the benefits of cooperation throughout the states involved (institutionalist lens). Ultimately, however, countries will not voluntarily relinquish their sovereignty in pursuit of the common good unless they also believe that it will serve their individual interests and that the benefits will outweigh the costs to them (utilitarian lens).

Most analyses of water ‘conflicts’ focus on only one or two of these lenses, missing important opportunities to identify ways of systematically reducing the barriers to cooperation to a manageable level. Furthermore, these analyses tend to focus exclusively on the state as their unit of analysis. This is problematic for two reasons. First, it overlooks the importance of interpersonal interactions that shape the negotiations that lead to transboundary water agreements. Second, it assumes that states are unitary and rational actors. Neither of these assumptions is necessarily true. Political change, tension among sub-state interests, and public perception all affect how a state ‘acts.’

1.3 Applying the Lenses to the Nile Negotiations

The two-track approach of the CFA and NBI exemplifies proceduralist and institutionalist approaches to enabling cooperation. The CFA negotiations were procedurally very strong from several perspectives (Chapter 3). All the countries were included, differences in capacities were addressed to ensure a ‘fair’ process, the negotiations were facilitated by credible parties acceptable to all (the UNDP and World Bank), and there was significant value creation (by the donors). The establishment of NBI helped to address information asymmetries by promoting information sharing and commissioning Nile Basin studies, built the Nile Basin countries’ technical capacities, promoted confidence- and trust-building through on-the-ground development; and created spaces for the Eastern Nile countries and Nile Equatorial Lakes countries to begin regional development planning through the Subsidiary Action Programs (ENSAP and NELSAP).

Despite the progress made, the negotiations ultimately ended in 2010 when the upstream countries signed the CFA without the support of Sudan and Egypt. This suggests that procedural and institutional interventions were insufficient.

From a proceduralist perspective, there are several possible explanations for why the negotiations ended the way they did. First, the non-legal concept of ‘Water Security’, introduced after the countries reached an impasse over ‘prior agreements’, was intended to be flexible enough to allow all parties to accept it. In reality, it was far too ambiguous and was not an issue that could be settled at the level of the Ministers of Water. Relatedly, the right parties were not at the table for resolution of the matter of ‘prior agreements’ or ‘water security’. These issues needed to be resolved by representatives with higher political authority. This was why the Water Ministers attempted to refer the matter to their Heads of State in 2007. Second, abrupt changes in the individuals involved undermined the personal trust built over time, re-inserting another barrier (i.e., lack of trust) in the negotiations. Most notably, the Egyptian Water Minister, Mahmoud Abu Zeid, was abruptly replaced in the CFA negotiations in 2009. The Water Minister who replaced him was comparatively less experienced in transboundary water issues and perceived to be less collaborative than his predecessor. Furthermore, his suggestion to renegotiate issues (i.e., prior notification and amendment by consensus) that were already considered to be resolved by most of the other participants was perceived to be a hardening of Egypt’s position. Concerned that Egypt would continue to stall until the momentum of the CFA negotiations was lost, the representatives of the upstream countries signed the CFA despite the lack of consensus. Third, the CFA process was not well publicized and the text of the CFA was difficult to access even after the countries began to add their formal signatures (Paisley and Henshaw 2013). Arguably, keeping the process and agreement

out of the public eye provides negotiators continued flexibility. On the other hand, it is difficult to build public support when the public feels it has very little input.

There are three additional lenses that may help explain why the CFA negotiations ultimately ended in a upstream/downstream split. The realist lens suggests that Egypt and Sudan did not agree to the CFA because they are the ‘hydro-hegemons’ of the Basin and do not want to change the status quo (as defined by the 1959 Nile Agreement). In this view, non-coercive collective action is only possible when countries have relatively equal levels of power⁴¹¹.

The idealist lens would suggest that the heterogeneities in beliefs – principally, whether utilization of the Nile waters is a zero-sum game as defined by the 1959 Nile Agreement – prevented the parties from reaching agreement on the CFA. According to this view, basin-wide collective action cannot be achieved until the basin countries are united in their vision of the common good. This could range from unanimously adopting IWRM as a guiding set of principles to subscribing to a collective ‘Nile Basin’ identity. Although this is being addressed through the work of the NBI, it will take time.

A third explanation (utilitarian) is that the benefits of cooperation were too diffuse in the case of the CFA negotiations. As one international expert observed (Interview: March 2, 2015), ‘people are unlikely to do a deal if they didn’t know what they were trading. So, until you can get them to where they know what they’re trading, they were unlikely to do a deal.’ According to this view, Egypt and Sudan were not convinced that the benefits of cooperation (i.e., increased development through NBI) would offset their individual costs (i.e., losing their allocated ‘rights’ under the 1959 Nile Agreement). Collective action on a specific project could be easier to achieve if the parties can calculate the benefits and costs and the distributions to each side seem fair.

Negotiations on the GERD could have theoretically avoided these pitfalls. First, Ethiopia’s unilateral construction of the GERD can be interpreted as ‘leveling the playing field’ (realist lens). Egypt and Sudan are now ‘forced’ to come to the negotiating table and reach an agreement because the costs of non-cooperation are clearly very high. Second, the individual and collective costs, benefits, and risks of the GERD are more easily quantifiable than had been the case with the CFA negotiations (utilitarian lens), making the benefits of cooperation more tangible. Third, an agreement on how to fill and operate the GERD would not necessarily require the three countries to have similar ideas of the ‘common good’ (idealist lens). The GERD is a hydroelectric dam. Therefore, aside from the time it takes to fill the dam, it should not reduce the flow of the Blue Nile in the long term.

In short, each of these prescriptive lenses is critical to understanding why and when collective action may be more difficult or more easily achieved at different scales. The next section reviews my findings related to barriers to collective action efforts.

⁴¹¹ More recent work in this stream identifies the CFA negotiations and the work of the NBI in balancing power within the basin by reducing differences in ideational and bargaining power (Casção and Nicol 2016).

II. Reducing Barriers to Collective Action in the Nile

“The distinguishing feature of international rivers is the politics of their use and management. The hydrology of a river does not change when an international frontier runs across or along it, only the politics change. Demands on the resource differ between basin countries due to many factors... [t]hese create vastly different priorities for the river's use and obscure the water resource planner's view of the basin as a hydrological unity. Ill feelings between neighbors can further obscure the hydrological perspective. These differences form barriers to cooperation that are often more difficult to remove than physical obstacles. Throughout the world it is becoming of greater importance to remove these barriers...”

(LeMarquand, 1976)

When, in the late 1990s, the Nile Basin countries agreed to jointly decide on how they would collectively manage their shared water resources, they faced many obstacles. As described by an international transboundary water expert, when the Nile countries first started to engage in the CFA drafting and negotiation process, they ‘started from zero – zero cooperation, zero knowledge, and a high degree of mistrust’ (Interview: March 2, 2015).

Over the course of the CFA negotiations, they drafted 34 provisions regarding rules they would follow to determine equitable allocations, how the river basin organization would be structured, and how any future conflicts over water would be handled. They reached consensus on all but one. This was no small feat. Similarly, Ethiopia's 2011 announcement of its plan to unilaterally construct the Grand Ethiopian Renaissance Dam could have led to armed conflict. Instead, the three Blue Nile countries turned it into an opportunity to engage in joint fact finding and look for ways of sharing the benefits of the dam while mitigating the risk.

In this section, I briefly describe the types of barriers related to the number of actors and the degree of heterogeneity that made it difficult to reach agreement in the CFA and GERD negotiations.

2.1 Limiting the number of actors is not the key to success

Based on Olson's work (1965), one might expect that the difficulties of reaching agreement are significantly greater at the basin-wide level because there are more actors involved. Ostrom's (1990) work made an important distinction between transaction costs related to the number of actors and other barriers caused by heterogeneity among the actors.

My findings are more aligned with those of Ostrom. The number of actors, as defined by the number of states and individuals directly involved in the negotiations, does not appear to be the determining factor in whether collective action can be achieved. In the case of transboundary water negotiations, the costs of including more actors can be offset through several procedural interventions. Through a fair and well-managed process, the countries can move beyond their respective positions. In short, the number of actors presents less of an obstacle than the number of interests – and there is not a 1-1 correlation between actors and interests. In the case of the CFA negotiations, although there were nine countries involved, their sovereign interests were reduced to two factions (upstream and downstream). In the case of the GERD negotiations, the three countries continue to have their own separate interests. Arguably, the interests of Sudan and Ethiopia are currently aligned – reducing the negotiation to two opposing positions.

That is not to say that increasing the number of actors does not increase transaction costs and (often) add complexity. In the CFA negotiations, the support of international donors was critical to offsetting the majority of the costs related to convening the actors and to managing the process of facilitation. The increased complexity was less related to the number of actors and more so to the heterogeneity of their interests.

2.2 Many Barriers Related to Heterogeneity can be Reduced through Procedural Interventions

Many barriers related to heterogeneity can be reduced through procedural interventions (Table 15). Some, such as heterogeneities in information and capacity, are comparatively easier to address than others, although this does not make them any less important. In the case of the CFA negotiations, the countries did not share basic hydrologic data with each other or have a common understanding of the river basin morphology when the negotiations first began. It would have been impossible for them to have jointly planned projects without achieving a shared understanding of existing supply and existing and projected future demand. Similarly, in the GERD negotiations, Egypt and Sudan did not initially have any information about the dam's structural integrity, capacity, and potential impact. Furthermore, they did not (and still do not) exchange data regarding their existing use of the Nile. Such asymmetries present a barrier to jointly developing a plan for filling and operating the GERD and mitigating downstream impacts.

Difference in capabilities can be reduced by including institutions or individuals who can offer independent expertise. It is critical, of course, that all countries involved agree on the choice of experts. In the case of the GERD negotiations, one of the reasons the countries opted against inviting the World Bank to provide expertise is that it is not perceived to be neutral by all the actors. The countries instead decided to hire international consultants (i.e., BRLi and Artelia) to conduct dam impact studies.

Table 15. Reducing Barriers Related to Heterogeneity through Procedural Interventions

Heterogeneity	Cooperative Framework Agreement Negotiations	Grand Ethiopian Renaissance Dam Negotiations	General Procedural Interventions (i.e. 'Lessons Learned')
Information	Hired experts throughout the negotiations to conduct studies for the benefit of all the countries.	Joint fact-finding process initiated by the Panel of Experts and overseen by the Tripartite National Committee.	(i) Joint fact-finding; (ii) Commission regional or basin-wide studies.
Capabilities	(i) National experts involved in each stage; (ii) Support by international experts on treaty and river basin organization (RBO) design; (iii) Adopting the 1997 UNWC as a starting point.	(i) National and International experts invited to participate as part of the International Panel of Experts (IPoE); (ii) IPoE suggested studies conducted by international consultants (BRLi and Artelia).	(i) Include national and international experts; (iii) Use existing regional and international standards and cases as a starting point in negotiations.
Preferences	(i) Each provision of the CFA was negotiated; (ii) The 1997 UNWC provided external criteria to help ensure fairness; (iii) Inserted 'constructive ambiguity' into the agreement to make it politically tenable.	(i) DoP leveraged Ethiopia's need for economic development and Egypt and Sudan's need for energy through a 'power purchase' agreement.	(i) Focus on interest-based negotiations (rather than positional bargaining); (ii) Trade across differences; (iii) Use external criteria to ensure 'fairness' (e.g., principles of international law); (iv) Make agreements flexible enough to allow countries to sell it to their 'back table'.

Beliefs	(i) River basin study tours helped Nile countries recognize the potential benefits realized through basin-wide cooperation; (ii) Donors emphasized shifting from looking at Nile water as a zero-sum game to sharing the benefits of water use.	(i) Heads of State (especially, Meles Zenawi) often emphasized that the Nile was not a zero-sum game and that the GERD would be mutually beneficial for all three countries.	(i) Emphasize ‘shared problem’ outlook; (ii) transition from zero-sum to mutually beneficial outcomes; (ii) provide examples and counter-examples of where negotiations could lead.
Culture/ Language/ Histories	(i) Informal deliberation in the Nile 2002 Conferences, POE, and River Basin Study Tours; (ii) Continuity of actors.	Procedural interventions to build trust include: (i) Participation of all three countries in the joint fact-finding process; (ii) Declaration of Principles signed by the Heads of State; and (iii) Communication among negotiators explaining perceived inconsistencies in state behavior (e.g. Morsi’s saber-rattling)	(i) Built trust and empathy among negotiators by increasing opportunities for informal interactions (e.g., basin study tours, conferences); (ii) Explain ‘inconsistencies’ in state behavior; (iii) Avoid ‘triggers’ in proposed solutions; (iv) Ensure some continuity in actors.

Heterogeneities in beliefs and identities are the hardest to address through procedural interventions. In the cases I studied, one of the major differences in beliefs is related to ‘historic agreements’ – in other words, what the 1929 and 1959 Nile Agreements were intended to accomplish. Differences in beliefs, such as what is a ‘fair’ allocation of Nile, can be partially addressed by shifting from a zero-sum approach to negotiation (i.e. assumption that any water use by upstream countries reduces downstream water supply) to a mutual gains approach. In the CFA negotiations, UNDP and the World Bank played a critical role in encouraging the countries to shift away from thinking about how to *distribute water* to thinking about how to *distribute the benefits of water* (Sadoff and Grey 2002). They also organized river basin tours of other basins to help the Nile Basin countries recognize the benefits of collective action. In the case of the GERD, Meles Zenawi repeatedly emphasized that Ethiopia was using the Nile in a non-consumptive way (i.e., hydroelectricity generation) and that the dam could be mutually beneficial to all three countries.

Although differences in identities cannot be reduced in the course of a single negotiation, the barriers they pose can be reduced through trust- and empathy-building. Procedural interventions such as providing spaces for negotiators to speak openly about their interests (e.g., Nile 2002 Conferences), reminding actors of their interdependence (e.g., that their water security partially depends on the water security of their neighbors), and ensuring some continuity of actors to allow for relationship building can all help to build trust among the individuals. The negotiators also play a critical role in avoiding situations that break trust. In the case of the GERD negotiations, for example, Egyptian negotiators were quick to explain to their Ethiopian counterparts that Morsi’s inflammatory statements in 2013 should not be considered the official Egyptian position but instead seen as a reflection of internal political turmoil.

Assessments of transboundary water interactions should recognize that heterogeneities occur at multiple scales. Heterogeneities in technical capacity among states need to be addressed both at the level of the negotiators directly involved in the negotiations and at the level of the state. Procedural interventions can be used to address heterogeneities among negotiators, whereas institutional interventions are needed to address heterogeneities among states.

2.3 Procedural Interventions Should be Reinforced through Institutional Interventions

In many ways, the design of the two-track ‘separate, but parallel’ approach of the Nile Basin Cooperative Framework Agreement (CFA) and the Nile Basin Initiative (NBI) was an elegant approach to enabling collective action.

First, each track reinforced the other but was (theoretically, at least) not tied to the success of the other. The legal/political track within the CFA negotiation process was solely oriented toward allowing the countries to collectively agree on their common good and a path to achieving it. The technical track within the NBI, on the other hand, allowed the countries to build trust, improve their technical capacities, and share data while avoiding discussions about differences in their beliefs about how Nile water should be apportioned.

Second, the design of the CFA negotiation process – specifically, the involvement of professional facilitation, additional support by legal and technical international experts (during the drafting stage), and using the 1997 United Nations Watercourses Convention – addressed barriers related to differences in legal, technical, or negotiation capacities among the country representatives within the negotiation process. These reduced the gaps among individuals involved. This was reinforced at a broader level by building the technical capacities of the countries through the work of the NBI. By the mid-2000s, the Eastern Nile countries started joint planning of hydraulic infrastructure under the Joint Multipurpose Program of the Eastern Nile Technical Regional Office.

Third, the design accounted for trust-building at all scales. Trust was built among the individuals involved through informal forums (e.g., the Nile 2002 Conferences and the river basin study tours) that provided them space to speak about their interests and concerns as individuals, rather than as official representatives. Over time, the freedom to air their concerns and to hear those of their counterparts, combined with the continuity of many of the actors throughout the process, added to the level of trust among the participants. NBI helped build trust among the publics of the countries. Nile Day, for example, is an annual one-day event promoting NBI’s motto of ‘One River. One People. One Vision’ while also celebrating the diversity within the Basin. Similarly, the Nile Basin Development Forum – a biennial science-policy forum – has provided the space for academics, scientists, policymakers, politicians, and civil society representatives to meet in an unofficial capacity to discuss shared challenges faced by the Nile Basin countries. These promoted dialogue and understanding among non-state actors in all the Basin countries.

In summary, many barriers to collective action can, and should be, addressed through procedural and institutional interventions. The ones outlined so far – related to the number of actors and degree of heterogeneity among actors – are common to most collective action situations. However, there are context-specific barriers that may also need to be addressed. The following section outlines three additional kinds of barriers that may have to be addressed in specific negotiating contexts.

2.4 Identifying Context-Specific Barriers

No two river basins or transboundary water interactions are the same. Context matters when analyzing why a particular conflict has arisen and how the parties ought to move forward. Even if these context-specific barriers can be addressed in ways that reduce obstacles to a manageable level, collective action may still not be possible. In this section I identify three additional barriers specific to the Nile Basin context – politicization of the Nile, public perception and political transitions. All three have to be addressed to enable long-term collective action.

2.4.1 *Politicization and ‘Securitization’ of the Nile – Interaction between Technical and Political Realms*

One of the unique aspects of the Nile Basin is that Egypt depends on the Nile for 97 percent of its water. For Egyptians, management of Nile waters is not just a ‘technical’ problem, but also a political one. Any

solution must take account of the overwhelming political importance of the river (Interview with Sudanese negotiator on July 23, 2018):

The Eastern Nile issue, as related to GERD, is both technical and also political. It is political because this is a resource which is a transboundary but not governed by any legal framework that has been agreed upon by all three countries so the issue becomes, 'how can you manage?' So this is partly political. Of course, when it comes to the dam, it is technical. It's a kind of technical issue. You construct the dam, you impound the water, you release the water. So you have to agree on how to impound and what to release at different times. So to agree on this, the needs of the three countries has to be considered and agreements have to be reached between the three. Agreements won't always satisfy everybody but each of us will take something and get something and will come to common ground for the three of us, where we all come out as winners of the situation. So it is good always to keep a low profile on these negotiations. If you over-politicize it, or if you bring in security issues, it makes the negotiations really complex. So I feel it is good to leave technical issue on technical basis and whenever agreements arise from the debates of this, then the issue enters into the realm of politics. So the leaders have to be able to agree on what has been brought up by the technicians because it affected the three countries... So you can say that when issues are technical, leave it to the technical people and involve politicians only when they are required. Sometimes, even when the technical people cannot agree, obviously the politicians have to come in.

Using a basin-wide approach, the Nile countries attempted to address water management questions by keeping the negotiations among the experts. The CFA process started with a panel of national experts (1997 – 2000) outlining elements they felt were essential to a Nile-specific framework agreement. Negotiations did not start until 2000, after this draft was produced. Over the next seven years, technical experts (i.e. the Nile Basin Council of Ministers of Water) negotiated each of the articles until they reached agreement on all but one. In 2007, it became clear that the negotiators did not have the political authority required to resolve the outstanding issue. At that point, Heads of State came to the table⁴¹².

Similarly, negotiations on the GERD started among technical experts – the Ministers of Water of the three Blue Nile countries. Over time, 'securitization' of the Nile (i.e., framing the dam as an issue of national security) by Egypt raised the political stakes. The Tripartite Ministerial Negotiations expanded from 3-party (Ministers of Water from the three countries) to 6-party (Ministers of Water and Ministers of Foreign Affairs) in 2015⁴¹³. Including these actors helped increase the political will needed to resolve the issue through cooperation. The Declaration of Principles on the GERD was drafted during the 6-party Tripartite Ministerial Negotiations and signed by the Heads of State of the three countries. On the other hand, politicizing the dam reduced the opportunity for technical solutions. Although the National Independent Scientific Research Group reached consensus on how to fill the GERD in a way that minimizes downstream impact, their proposals are not currently perceived to be politically feasible (Chapter 4, Section 2.4).

2.4.2 Public Perception and the Role of the Media

One of the consequences of politicizing the dam has been that media coverage of the GERD negotiations has been significantly higher than it had been during the CFA negotiations. On one hand, some level of transparency is necessary to garner public support for an agreement. On the other hand, too much transparency limits the room for creative problem-solving. In any negotiation process, negotiators need

⁴¹² The only explanation given to me for why it was returned to the Council of Ministers is that one of the Ministers of Water said that their Head of State did not feel they could unilaterally decide (on behalf of their state) on the issue of the Nile.

⁴¹³ In 2018, they expanded again to 9-party Tripartite Ministerial Negotiations to formally include the security apparatus of each country.

flexibility to creatively problem solve before making any commitments. When the media shares too many details, or misrepresents the negotiations, it may reduce the zone of possible agreement (ZOPA) for the parties.

In the case of the GERD negotiations, the Egyptian media's portrayal of the dam and of the negotiations created a major barrier because it left negotiators very little room to reach agreement. A Sudanese negotiator noted that Egyptian officials always seemed reticent to speak with the media about Egypt's position in the negotiations (Interview on July 27, 2018):

The media in Egypt, in my observation of the negotiators, puts a very heavy pressure on the negotiators. I remember when we signed the IPoE [International Panel of Experts] report, and that was at the time of Morsi... the media has very high pressure on the participants. We saw it in their [Egyptian negotiators'] faces. When they are going back home, they are very fearful to face the media... [e]ven the Ministers - they feel very fearful to confront their Egyptian media.

Their hesitation to speak with the media stems from their fear of public perception. Egyptian negotiators are in the unique position of trying to reach agreement with their upstream neighbors, while also ensuring Egypt's share of Nile water as described by the 1959 Nile Agreement. As a result, Egyptian negotiators asked their Sudanese and Ethiopian counterparts to include elements in the agreement that they could 'sell' to their 'back table'⁴¹⁴. Some perceive this to reflect the Egyptians' fear of public perception⁴¹⁵.

This highlights the importance of how the problem is framed and understood by the media. If the media frames the GERD as a threat to Egypt's national security, the Egyptian public will consider it a threat and will not support any agreement that does not explicitly protect their use under the 1959 Nile Agreement. On the other hand, if the media frames the dam in terms of non-consumptive uses that could be mutually beneficial for all three countries, the Egyptian public's perception might soften⁴¹⁶.

The Egyptian government's response has been a media 'blackout' on the GERD negotiations since the start of President El-Sisi's tenure⁴¹⁷. Although reporters still cover the negotiations, they are limited in what they can say⁴¹⁸. A more innovative, and progressive, approach was a joint-media technical training conducted by the Stockholm International Water Institute (SIWI) in 2016 (SIWI 2016). Twenty-six journalists from Egypt, Ethiopia, and Sudan were invited to a five-day media training in which international experts presented the best ways of explaining the benefits of cooperation. This was an attempt to change the way the GERD and the 'conflict' were framed (thereby influencing public perception) by providing journalists technical training about

⁴¹⁴ Interview with Ethiopian water expert on July 31, 2018: "This is always their request when they come. They always ask for something they can ask to take back to their public."

⁴¹⁵ Interview with Ethiopian water expert on July 31, 2018: "Maybe because they [Egyptian negotiators] don't want to expose themselves or they want to align themselves with the public perception. They always fear some sort of fire back from the public. They don't have the guts to come out and stand say, 'okay, this is the situation.' They always need some sort of face saving. They always want to hide behind the perception."

⁴¹⁶ I do not mean to imply, in any way, that the media should not look towards the interests of the public or that freedom of press is dangerous. Instead, I am suggesting that the media (all over the world) have an increasingly important role to play in bridging science, policy, and the public to build support for state action in natural resource management.

⁴¹⁷ Interviews with Egyptian journalists covering Nile affairs on July 8, 2018 and July 10, 2018.

⁴¹⁸ There also seems to be a growing divide between younger and older journalists in the Nile. Older journalists are described as taking on more nationalistic tones in their coverage of the GERD, whereas an increasing number of younger journalists are framing the dam as a source of cooperation. Several interlocutors mentioned that this divide has become conflictual in Egypt – when younger journalists write about the dam in a more balanced way, they are accused of being 'traitors' by their older colleagues.

the dam as well as opportunities to ask questions⁴¹⁹. This was aimed at rebuilding trust and understanding among journalists from the three Nile countries.

2.4.3 *Political Transitions and Two-Level Games*

One of the weaknesses of the five prescriptive lenses is that they inherently assume that states are rational, unitary actors. However, both of these assumptions are rarely true. Water is only one issue, among many, on each country's agenda.

An added layer of complexity in the Eastern Nile stems from recent (and frequent) political transitions. Over the past decade, Egypt has had three Presidents – Mubarak, Morsi, and El-Sisi; Ethiopia has had three Prime Ministers – Zenawi, Desalegn, and Ahmed; and Sudan's thirty year rule by al-Bashir came to an end earlier this year (2019). This, combined with the politicization and securitization of the GERD, has increased the importance of the Nile waters and the dam to each political leader. Each Head of State must play a two-level game⁴²⁰ (Putnam 1988). They have to allay domestic concerns while simultaneously addressing regional and international concerns. Arguably, each of the Heads of State has politicized the issue of the GERD to their own benefit, to demonstrate the strength of their leadership.

Former Ethiopian Prime Minister Meles Zenawi, for example, framed the GERD as a tool for poverty alleviation but also as a national project to unite (an otherwise deeply divided) Ethiopia and to raise its prominence in the regional and international arenas. It is in the best interest of subsequent leaders – Desalegn and Ahmed – to follow in his footsteps. It is possible that Abiy Ahmed has gained enough prominence through other actions (e.g., stabilizing relations with Eritrea, releasing political prisoners in Ethiopia, and addressing political corruption) that he may have some leeway on how much he pushes the GERD as a national symbol of progress. The political capital he accrued through these other actions may have made it easier for him, for example, to fire METEC from doing the electro-mechanical work on the dam in August 2018. He soon followed this by charging them (and many government officials) for corruption. This strong action is surprising given that there has been very little critique of the dam by Ethiopians.

In Egypt, the two-level game is more complicated. First, because the dam is framed as a matter of life or death and, second, because Egypt has gone through two revolutions in the past decade, making domestic stability uncertain. Egypt was in the middle of its first revolution when the dam was announced and the incoming transitional government scrambled to respond. Early in his tenure, former Egyptian President Morsi did not take a very strong position on the GERD. After the IPoE published its report on the dam, he adopted a bellicose tone, threatening '[w]e will defend each drop of Nile water with our blood if necessary' (*Associated Press* 2013). According to several Egyptian officials, his response had less to do with the dam itself and more to do with his need to demonstrate his commitment to protecting Egypt's interests (to gain the political support of his fracturing coalition). Within a month, he and the Muslim Brotherhood were replaced during the second Egyptian revolution of the decade. Egypt has since taken a stronger pro-cooperation tone under President El-Sisi. Within a year of his election, the three countries signed the Declaration of Principles on the GERD. Overall, El-Sisi has maintained a positive tone regarding regional cooperation although, more recently, he has also been making stronger statements reaffirming his commitment to protect Egypt's water supply.

The Nile is not as politicized within Sudan. Instead, it may serve as a bargaining chip in Sudan's broader regional agenda. Historically, Egypt and Sudan have been aligned on Nile issues. When the GERD was first

⁴¹⁹ The journalists were also given a tour of the GERD and given full access to the GERD's former project manager, Simegnaw Bekele, to ask questions about the dam.

⁴²⁰ Putnam (1988) describes the two-level game as the following: "At the national level, domestic groups pursue their interests by pressuring the government to adopt favorable policies, and politicians seek power by constructing coalitions among those groups. At the international level, national governments seek to maximize their own ability to satisfy domestic pressures, while minimizing the adverse consequences of foreign developments."

announced, both Egypt and Sudan were united in their concerns about the dam. In December 2013, former Sudanese President al-Bashir announced his support for the dam. This was perceived by many Egyptians as a shift in the Sudanese position away from Egypt and towards Ethiopia in reaction to the removal of the Muslim Brotherhood and Morsi in Egypt. Tensions between Egypt and Sudan continued to escalate until January of 2018, when Sudan temporarily removed its ambassador to Cairo. This action was purportedly over three things: Sudanese media reports that Egypt was trying to cut Sudan out of the GERD negotiations, the ongoing dispute over the Halayeb Triangle⁴²¹, and increasingly negative treatment of Sudan by the Egyptian media (El-Bey 2018). This may have also been al-Bashir's attempt to distract Sudanese citizens from a weakening Sudanese economy. Domestic tension related to over inflation of the Sudanese pound, shortages of fuel, and reduction of bread subsidies was bubbling up into protests back home. In the words of journalist Faisal Saleh (Knecht and Abdelaziz 2018), "[t]his is the worst economic crisis we've ever faced. I'm afraid we're facing a total collapse of the economy. People have reached their maximum level of anger and you can expect anything after that. I don't know what they will do." Tensions continued to mount internally and, by December, protesters were calling for al-Bashir's removal. By April 2019, al-Bashir was arrested by the army and removed from his position as President. The country is currently being led by a Transitional Military Council, much to the dismay of many Sudanese who continue to protest in an effort to push for civilian rule (through elections) in the very near future. After talks between the Military Council and the protestors collapsed in June 2019, members of the Military Council visited their historical regional allies – Egypt, the United Arab Emirates, and Saudi Arabia (Tisdall 2019). Since their return, the military has cracked down on protestors (Burke and Salih 2019), presumably with the approval of the three states⁴²².

While there is very little for water diplomacy practitioners and scholars to do in response, political transitions and domestic politics are an important dimension to consider in any transboundary water 'conflict'. Political transitions and conflicting sub-state interests are critical to understanding what appears to be 'irrational' state behavior (e.g., lack of state action or shifts in state positions). If there is already a low level of trust among the countries, these inconsistencies in state behavior may create additional obstacles to collective action.

⁴²¹ The Halayeb Triangle, a tract of land that falls on the Egyptian-Sudanese border, has been a source of ongoing dispute starting from 1899.

⁴²² El-Sisi is undoubtedly watching the situation in Sudan carefully on several fronts. First, rule by an Egyptian-backed Military Council in Sudan could help reduce existing tension over the Halayeb Triangle and potentially strengthen Egypt's position in the GERD negotiations if Sudan realigns itself with Egypt. Second, many have compared the ongoing Sudanese revolution with the previous Egyptian revolutions. With growing domestic tension at home over a weakening economy, El-Sisi may very well be concerned that a Sudanese populace that avoids military rule will re-ignite Egyptian calls for actual democracy.

III. Future of Water Diplomacy

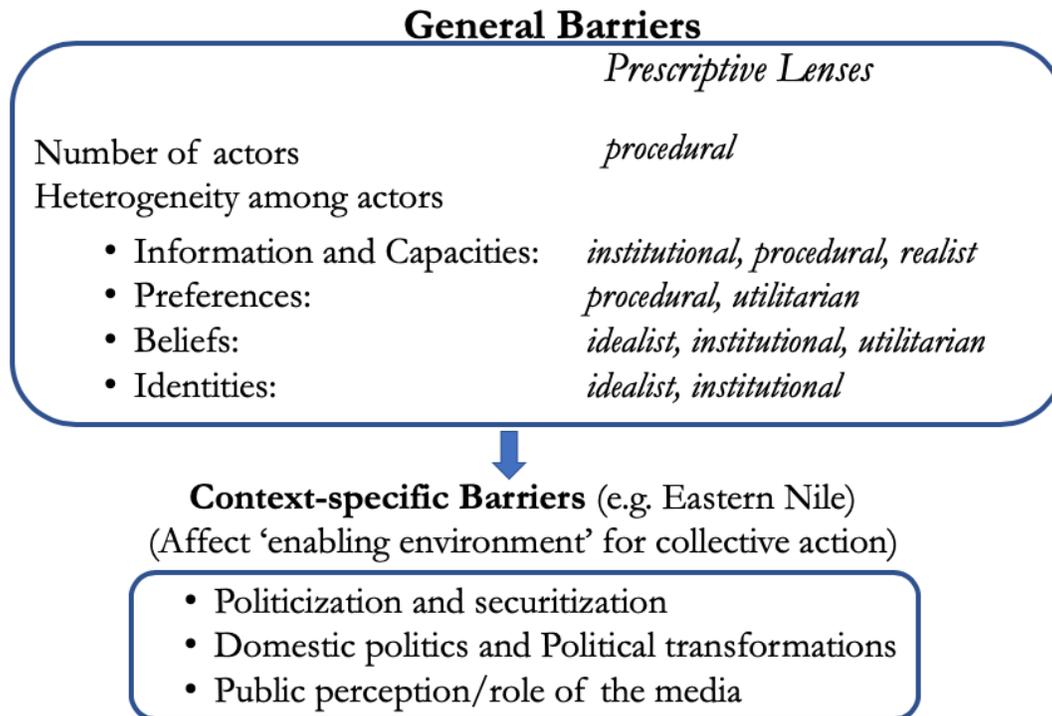
Much has changed since early transboundary water negotiations. First, there is increasing demand for water due to rapid population increases and changes in urban water use. Second, the pattern of bilateral treaty-making is being increasingly challenged by calls to have basin-wide or regional agreements on water use that ensure ‘equitable and reasonable utilization’ for all basin countries. Third, the increasing uncertainty of future water supply due to climate change requires agreements that were based on fixed allocations (e.g., the 1959 Nile Agreement) to be restructured to allow for more flexible arrangements (e.g., percentages). Fourth, countries are increasingly able to unilaterally fund infrastructure, thereby reducing former safeguards such as the World Bank’s Operational Policy 7.50 that would require consensus on planned infrastructure by all affected countries. Fifth, the increasing push for public participation in natural resource management, combined with the expanding role of the media and social media, make transboundary water negotiations less confidential. Finally, the growing trend toward ‘securitizing’ water has increased the participation of sub-state actors (e.g., foreign ministries and intelligence), further complicating transboundary water governance. These changes necessitate more careful analyses of water ‘conflicts’ that consider the role of both state- and non-state actors in reducing barriers to collective action.

In Section 3.1, I propose a simple model for a more systematic analysis of water ‘conflicts’ that takes both general and context-specific barriers into account. However, it is important to recognize that these barriers occur at different scales. Heterogeneities in information, for example, should be addressed at all three scales in which they occur by reducing asymmetries in information among negotiators (scale 1), among technical experts (scale 2), and among the public (scale 3). Addressing these will require multi-track diplomacy, or diplomatic interventions by state- and non-state actors. In Section 3.2, I outline ways in which general barriers occur at different scales and suggest ways in which both state- and non-state actors can reduce these barriers. In Section 3.3, I apply this model to the context-specific barriers faced in the Eastern Nile and suggest ways in which state- and non-state actors can help to create a more enabling environment in which collective action can occur.

3.1 Including General and Context-Specific Barriers in Systematic Analyses of Water ‘Conflicts’

Collective action is not just an end goal, but something that can be worked towards. Even if all the general barriers (e.g., related to the number of actors and degree of heterogeneity of actors) are reduced below a certain threshold, collective action may still not occur due to context-specific barriers. Systematic analyses of water ‘conflicts’ should consider both general and context-specific barriers to collective action (Figure 7).

Figure 7. General and Context-Specific Barriers to Collective Action



In the case of the Eastern Nile, I have highlighted three context-specific barriers related to the securitization of water, political transformation, and public perception.

The ‘securitization’ of the GERD conflict by Egypt frames Nile water as a national security issue. This has shifted the negotiations from technical to political realms (thereby reducing the space for technical solutions) and increased the sub-state interests involved (thereby increasing the perceived inconsistency in Egypt’s approach to Nile water). It has also increased Egyptian media coverage of the Nile, which influences public perception. Public perception of the problem (e.g., as a technical versus political issue, as a mutually beneficial project versus an existential threat, etc.) may be one of the most important factors in determining whether countries can achieve collective action. If there is public support for collective action, it increases the solution space for negotiators and gives them the flexibility to try to create additional value within the negotiations. If there is little or no public support for an agreement, collective action becomes less likely. Negotiators in all three countries must find ways of creating enough value within the agreement and building enough trust among the ‘publics’ of the countries to enable agreements to be reached and implemented. Finally, although domestic politics and political transformations cannot be anticipated, they are important to consider for several reasons. First, they may create ‘windows of opportunity’ in which agreements can be reached (e.g., Morsi’s replacement by El-Sisi created a window of opportunity for the Declaration of Principles to be signed). Second, they may help explain ‘irrational’ state behavior that would otherwise undermine trust among countries (e.g., Morsi’s saber rattling in 2013). Third, contextualizing the 2-level game that Heads of States must play can help explain any perceived inconsistencies in their statements.

3.2 Using Multi-track Water Diplomacy to Reduce General Barriers at Different Scales

My focus has been how the number of actors and degree of heterogeneity among them affect outcomes for collective action *within* transboundary water negotiations. However, two additional factors should be taken into consideration to ensure that an agreement, once it is in place, is sustainable. First, heterogeneities among actors may create barriers to collective action at different scales: among negotiators, among countries’ technical

organizations (e.g. Ministries of Water), and among the publics. Different types of intervention may be necessary to address the same barrier at different scales. Second, some interventions (e.g. proceduralist) are critical in the immediate term, whereas others (e.g., idealist) take time and therefore require sustained support. Both of these factors – the need to address barriers at different scales and with different time constraints – create opportunities for both state and non-state actors to help contribute to reducing the barriers to collective action.

In the following table (Table 16), I have outlined the general barriers (Column 1) related to the number of actors and heterogeneity of actors. In Column 2, I have outlined the scales at which these barriers occur. For example, asymmetries in information among the negotiators (scale 1), country technical experts (scale 2), and publics (scale 3) will all create barriers to collective action, and should all be addressed. In Column 3, I have suggested categories of interventions (based on the five prescriptive lenses) that could be used to address these barriers at different scales (drawing on the five lenses). Some of the same barriers can be addressed through multiple interventions. For example, barriers related to differences in beliefs among negotiators may be avoided in how the agreement is structured (institutionalist) and/or by demonstrating the potential benefits/costs of the collective action effort (utilitarian). I have provided some examples, from the Nile, in Column 4. In the final column, I have indicated how both state- (e.g., negotiators and Heads of State) and non-state actors (e.g., IFIs, NGOs, academia, civil society organizations, and religious organizations) can help to reduce those barriers.

My intention is not to provide a comprehensive list of how every single barrier can be addressed at every scale, but instead to demonstrate how systematic analyses of water conflict situations may be used to break down barriers into smaller pieces and start to recognize ways in which different actors might play a role in enabling collective action.

Table 16. Role of State and Non-State Actors in Reducing General Barriers

Barriers	Scale	Type of Intervention	Examples	Multi-Track Water Diplomacy
Number of Actors	Negotiators	Procedural; Realist	Ensure balanced team size; Neutral facilitation	State actors; International Financial Institutions (IFIs)
	Public	Procedural	National Advisory Team can provide additional support/feedback to Negotiation team.	Academia
Information	Negotiators	Procedural; Realist	Joint Fact-Finding; Include ‘expert’ and ‘local’ knowledge.	State actors; Academia; IFIs.
	Country Technical Teams	Institutional; Realist	Establish river basin-organization or joint technical teams to share and monitor data; build decision support system.	National technical teams; IFIs
	Public		Improve public’s technical understanding of the dam and Nile.	Media; Academia; International Organizations (e.g. SIWI)
Capabilities (e.g., technical, legal, negotiating)	Negotiators	Procedural; Realist	Include international and national experts; Use existing systems/criteria as a starting point.	State actors; IFIs; international experts; Water diplomacy trainers
	Country Technical Teams	Institutional; Realist	Build technical capacity of country teams through trainings; access to data.	National technical teams; Academia; IFIs.

Preferences	Negotiators	Procedural	Mutual gains negotiation; trade across differences in preferences; coalition building; identify interests; ‘constructive ambiguity’	State actors; Water Diplomacy trainers
Beliefs (e.g., ‘historic agreements vs. equitable utilization)	Negotiators	Institutional	Avoid framings (e.g., ‘water security’) that trigger differences in beliefs.	State actors; mediator/facilitator; IFIs
		Utilitarian	Focus on balancing benefits, costs, and potential risks.	State actors; IFIs (create value)
	Public	Idealist; Utilitarian	Emphasize mutually beneficial outcomes (e.g., development)	Heads of State; Media; scholars
Identity	Negotiators	Proceduralist	Provide opportunities for informal socializing (e.g., river basin tours, conferences, workshops)	State actors; IFIs; International organizations
	Public	Idealist	Build collective basin identity (e.g. through culture, religion, and shared interests); Celebrate diversity as a unique attribute of the basin (e.g., ‘Nile Day’).	Institutions; IFIs; Heads of State; academia; media; civil society organizations; religious organizations.

State actors obviously play a significant role in reducing barriers within negotiations, but they also play a critical role in reducing the heterogeneities in beliefs and identities among the publics. The way in which senior political officials (e.g., Ministers, Heads of State, etc.) *frame the problem* will affect public perception. Emphasizing the potential mutual benefits of a given project and recognizing another country’s interest in water as legitimate, for example, will slowly shift the public’s perception of the problem from being adversarial to being a shared problem.

Addressing heterogeneities in beliefs and identities will take time, and International Financial Institutions (e.g., World Bank, GIZ, UNDP, etc.) are in a unique position to support long-term interventions in reducing barriers at all scales due to their resources and expertise. IFIs can reduce the transaction costs within the process of negotiation by covering the costs of convening different actors and through facilitating the negotiation (thereby reducing barriers related to the number of actors involved within a negotiation). Many of the barriers at the level of the country technical teams (e.g., heterogeneities in information, capacities, and beliefs) can also be reduced by supporting the countries (both technically and financially) in establishing a river basin organization and by creating value (e.g., by establishing a trust fund for development projects within the basin). They play an equally important role in helping to reduce heterogeneities in identities among the public by financially supporting and organizing events that will draw the general public together under a recognition of mutual interests. These events could range from cultural events that celebrate diversity in identity while simultaneously recognizing a collective identity (e.g., ‘Nile Day’) to conferences (e.g. Nile 2002 Conferences, Nile Basin Development Forum) that allow state- and non-state actors to convene in an unofficial position. These informal spaces provide opportunities for individuals from different countries to gain exposure to one another, which may help build empathy and mutual understanding over time.

Academics play an important role in bridging the public and the policymakers. They have the advantage of being an unbiased⁴²³ source of information. They can provide additional support to negotiating teams and country technical teams that may lack technical capacity or be under-resourced. The way in which they frame existing and future water challenges also has an impact on the public, and may, over time, help to reduce heterogeneities in beliefs and identities. In 2014, a group of international (non-basin) scholars and experts gathered at MIT to review the IPoE report and provide recommendations on ways to move forward (MIT

⁴²³ This varies by individual, institution, and country. A current obstacle faced by Egyptian academics, for example, is that their research and communication is becoming increasingly monitored and regulated by the Egyptian government.

2014)⁴²⁴. Although their neutrality was questioned, it is possible that a group of scholars and experts from the Nile focusing on ways to increase the region's resilience to climate change would have more traction.

International organizations that focus on water, food, and energy security may not have the resources available to IFIs, but they are often perceived to be more neutral (as compared to many IFIs) and have the flexibility and agility to organize smaller, but targeted, interventions (e.g., SIWI's joint media training). The cost of organizing this type of intervention is comparatively low when considering the potential impact of having journalists from all three countries working together to frame the water conflict in a way that incentivizes a mutually beneficial outcome. More media trainings may help reduce the barriers related to heterogeneities in information and technical capacity among the media and the public.

Finally, civil society organizations⁴²⁵ (e.g., non-governmental organizations, religious communities, etc.) can reach the public in ways that other tracks cannot. Some groups, for example, may have existing cross-boundary identities that can be leveraged to address heterogeneities in identity. Increased interactions between Egyptian and Ethiopian Coptic communities, for example, may help reinforce a shared identity and set of beliefs among two groups that have been fractured since 1959, when the Ethiopian Coptic Church separated from the Egyptian Coptic Church. Other groups may be able to create a sense of cross-boundary identity by celebrating differences in identity. A second example, the Nile Project is an organization in the Nile that is working to build a collective Nile identity through musical performances by musicians from all the Nile Basin countries. Although these types of interventions will not enable collective action in the near term (e.g., in time for the GERD negotiations), they may help to bridge differences in beliefs and identities among the public over time.

Ultimately, collective action requires political will to be successful. This does not, however, preclude non-state actors from reducing barriers at different scales to help create an enabling environment for once that political will exists. By the same token, political will usually does not spontaneously occur⁴²⁶ – in most cases, it must be built over time. Systematically identifying the barriers to collective action and the scales at which they exist may help to identify existing or emerging interventions that can be leveraged to help build political will.

3.3 Reducing Context-specific Barriers: Moving forward in the Eastern Nile

The Blue Nile countries are currently at an impasse in their negotiations on how to conduct the studies necessary to calculate and mitigate the potential downstream impacts of the dam and on how to fill the dam. The negotiation process has been derailed or stalled several times as a result of heterogeneities in information, preferences, and beliefs; political transformation within the countries; and inflammatory statements made by key parties. It is likely that the three countries will eventually reach agreement on the dam just before Ethiopia starts to fill it because the costs of non-cooperation will become too high.

In the meantime, however, state-and non-state actors can help to create an enabling environment for collective action to occur by reducing and acknowledging three context-specific barriers: the politicization and securitization of the Nile, the frequency of political transitions, and the negative public perception. The added challenge is that the three barriers are interrelated and reinforce one another. Negative public perception of the

⁴²⁴ This report seems surprisingly unwelcome in the Eastern Nile countries. Negotiators in each state pointed out ways in which the report strengthened the others' positions in the negotiations and questioned the group's neutrality.

⁴²⁵ Unfortunately, the role of many local non-governmental organizations has been hampered in recent years by laws that restrict many local NGOs from receiving funding outside of the country. As of May 2017, for example, Egypt has put in place a law that further restricts civil society groups (Rutherford and Sowers 2019). Although the rationale for creating the law was to reduce potential interference by other countries in domestic politics, it has stifled most NGOs in the country.

⁴²⁶ In some rare cases, however, windows of opportunity may open up as a result of political change or sudden changes to the natural environment (e.g., earthquake in Mexico helped to incentivize cooperation between the U.S. and Mexico on the Colorado River).

dam, especially in Egypt, increases political pressure on Egyptian decisionmakers to ‘protect’ Egypt’s interests under the 1959 Nile Agreement. Egyptian politicians have securitized the Nile – perhaps to further their own interests (i.e., gain more domestic support and avoid political upheaval) – thereby increasing the framing of the dam as a potential source of ‘conflict’. This has fueled the media’s portrayal of the dam as a threat, thereby contributing to negative public perception. Little by little, this reinforcing cycle will need to be broken if collective action is to occur in the Eastern Nile.

Technical solutions for filling the GERD in a way that minimizes impact to Egypt and Sudan exist (Wheeler, et al. 2016). Therefore, agreement is possible but will require the issue of Nile water to be de-securitized. This is unlikely to happen within Egypt unless the public perception shifts away from seeing the Nile as a zero-sum resource to seeing it as flexible resource. There are ways to address this in the short- and long-term. The first is to reduce the public’s perception that Ethiopia poses a threat and the second is to reduce Egypt’s dependence on the Nile over time.

In the near term, a shift in public perception can be influenced by the state actors, media, and academics/national experts in how they frame the water ‘conflict’. This requires them to start decoupling shifting political debates about the dam into more technical ones, where solutions exist. They play an important role in improving the public’s technical understanding of the dam (and the negotiations).

This puts a great deal of pressure on them, however, because any support for the dam is still often interpreted as being anti-Egyptian⁴²⁷. Therefore, this change may come gradually, but can be reinforced by state actors (within Ethiopia and Sudan) by providing ways for Egyptian negotiators to ‘save face’ in the GERD negotiations. Within Ethiopia, there is some reluctance to continue placating Egyptian fears beyond what has already been done (i.e., in terms of inviting Sudan and Egypt to join them in collectively developing a plan for filling and operating the dam). A strong act that demonstrates Egypt’s commitment to cooperation – rejoining the NBI⁴²⁸, for example – may create more willingness by their upstream counterparts to try to alleviate general (public) fears about the dam.

In the medium term, the perception of upstream Nile water use as an ‘existential threat’ will decrease as Egypt invests more in water-saving technologies and practices. The perceived threat of water insecurity due to filling and operating the GERD has arguably created a window of opportunity for interventions by state- and non-state actors to reduce Egypt’s dependence on the Nile through internal measures.

A few years ago, conversations about looking inward for water security (e.g. by investing in desalination plants or changing agricultural practices) were perceived to be anti-nationalistic⁴²⁹. This is slowly changing. This year, Egypt will be hosting its second annual Cairo Water Week – a week-long conference which organizers hope will one day be on par with World Water Week (held in Sweden every year), but with a regional focus on the Middle East and Africa⁴³⁰. This may, over time, increase the space for academics, experts, and non-

⁴²⁷ This is based on my interviews with journalists and academics, who privately hold the view that the potential risks related to GERD are overstated within the public discourse but are not comfortable publicly stating their opinions.

⁴²⁸ It is in Egypt’s interest to **rejoin the NBI** and it can do so without signing the CFA (if the political will does not exist). The GERD is the first among a cascade of dams planned by Ethiopia. If Egypt rejoins the NBI, the three countries can coordinate on the construction, filling, and operation of the other dams through the **Eastern Nile Technical Regional Office**. Ultimately, it would be beneficial for Egypt to sign the CFA as well – but this may require the text to be slightly amended. In exchange for Egypt dropping its objections to Article 14 (b) or allowing its resolution by the future Nile River Basin Organization, the upstream countries should adopt the Articles related to ‘Prior Notification’ outlined in the 1997 UN Watercourses Convention.

⁴²⁹ This is based on my observations at the Alexandria Young Professionals Water Diplomacy Workshop in 2017 and interviews.

⁴³⁰ This is admittedly an optimistic view of the impact of Cairo Water Week given that the Nile Basin Development Forum already creates space for individuals within the Basin to discuss basin-wide economic development through IWRM. On

governmental organizations to exchange ideas with their regional counterparts about water security. It may also provide opportunities for regional scholarship focusing on shared environmental threats.

State actors can encourage improved water use through awareness campaigns, disincentivizing water waste, protecting existing water resources⁴³¹, and improving agricultural practices. In January 2018, for example, the amount of land allotted for rice cultivation was reduced from 1.1 million acres to 750,000 acres (Aman 2019). This followed strict regulation in 2018 against farmers that grew rice illegally (Ziada 2018). Shifting away from water-intensive crops (e.g., rice, sugar cane, cotton, etc.) is beneficial and necessary for Egypt in the long run. Unfortunately, there do not yet seem to be social programs in place that cushion the economic impact on farmers of these types of policies. In the absence of these programs, mass migration into the cities will put additional pressure on already overstretched urban water and sanitation infrastructure. This may have deleterious effects on public health and socioeconomic stability if not addressed.

Non-state actors, especially IFIs, can help cover some of the costs of providing social programs and in investing in water-saving technologies and practices (e.g., by lining and covering canals to reduce agricultural water loss due to seepage and evaporation and by increasing drip-irrigation). This would help soften the impacts on the agricultural sector and give the government time to put equity programs in place to help farmers transition to other income generating activities and to improve existing urban infrastructure to accommodate larger populations.

In the long term, collective action will require sustained efforts to reduce barriers related to differences in beliefs and identities. This will take time and trust-building by both state and non-state actors. State actors can help build trust in the region through cooperation in other areas (e.g., increasing trade, jointly cooperating in infrastructure investments and economic development, etc.). These types of cooperative efforts (i.e., utilitarian prescriptive approaches) should be complemented with transformational interventions (i.e., idealist approaches) that help build trust and empathy among the people of the Nile (e.g., cultural outreach programs, university exchanges across basin countries, efforts to engage the next generation in addressing shared challenges). These may be more easily implemented by non-state actors who are able to remain more apolitical.

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What does this mean for collective action in transboundary water governance? First, countries will need to shift from ‘going it alone’ to cooperating with their neighbors to increase their resilience to existing and future challenges. Second, technical interventions, on their own, will not work in the absence of political will. This is not to say that water should be ‘securitized’, but that both technical and political sub-state actors should be engaged in transboundary water negotiations. In the same vein, although political sub-state actors should be included in the negotiations, they should avoid ‘securitizing’ water because it decreases the space for technical solutions⁴³². Third, non-state actors have an increasingly important role to play in overcoming many of the barriers that occur at different scales (i.e., outside of the scale of negotiators), determining how water is framed, and building the political will to encourage cooperation. Fourth, trust and empathy can, and should, be built over time to help reduce barriers related to heterogeneities in beliefs and identities within, and outside of, negotiation processes.

the other hand, several individuals noted that this type of official recognition of the need to address water scarcity is relatively new in Egypt.

⁴³¹ In September of 2017, the Egyptian government approved an amendment to the Law of Irrigation, which increases punishments to encroachments on Nile water. Initially considered a misdemeanor, the law now recognizes encroachments as a felony, punishable by prison. Encroachments include ‘illegal construction on the Nile’s banks, unlicensed fish farming, industrial waste and other forms of pollution’ (*Egypt Today* 2017). Although the law will protect water quality, it will also have a disproportionate effect on the poor, who ‘encroach’ from a lack of viable options.

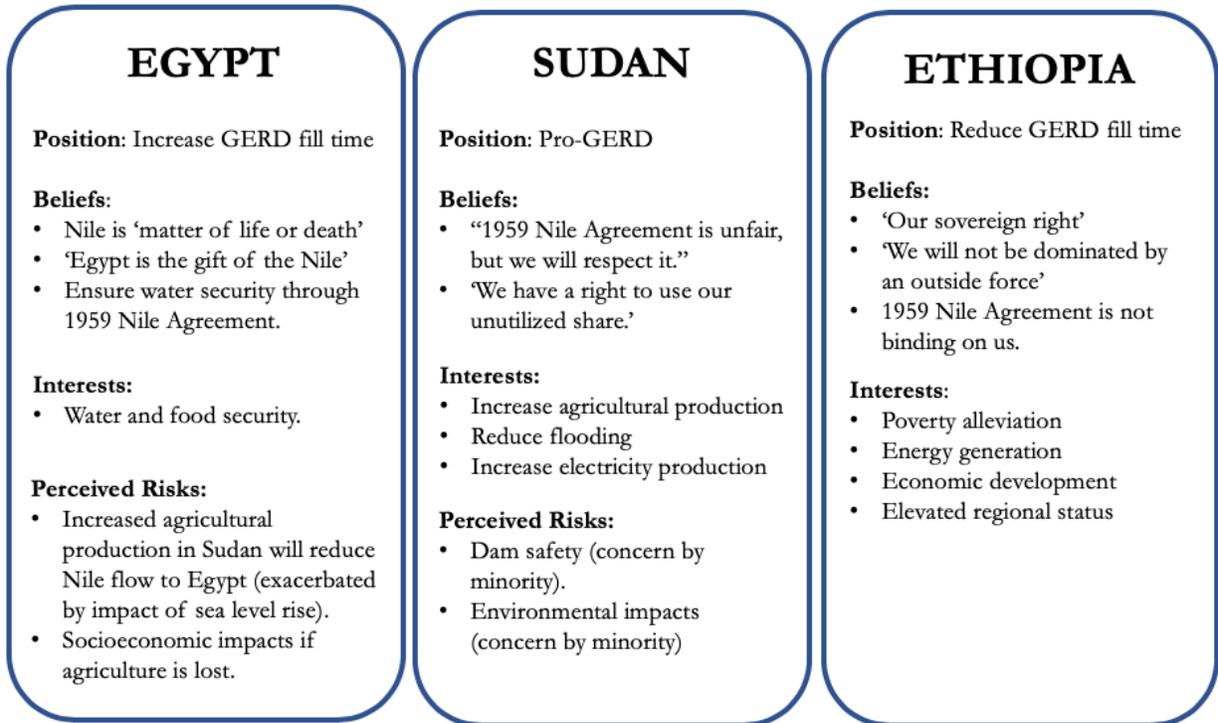
⁴³² I am not advocating for technocratic solutions or political ones, but instead for increased attention to science diplomacy, or the interaction between technical and political spheres in policymaking.

Although the barriers to collective action have always existed, additional barriers (e.g., related to population rise, increase in consumption patterns, growing uncertainty due to climate change, etc.) will make collective action in transboundary water governance even more challenging. While bilateral treaty-making, strong support by international donors, and track-one diplomacy may have been sufficient in the past, it is not the case in the future. Both state and non-state actors must help reduce the general barriers to collective action and build the political will to cooperate through multi-track diplomacy. Otherwise, in the words of Garret Hardin (1968), '[r]uin is the destination toward which all men rush, each pursuing his own best interest...'

CODA: CURRENT STATUS OF GERD NEGOTIATIONS AND CONSIDERATIONS FOR THE FUTURE

In any conflict situation, it is helpful to identify the stakeholders (i.e., those who will be directly affected by a given action or decision), their positions, interests, and their perceived risks (Figure 8). In future research, this type of analysis should also consider the positions, interests, and perceived risks of sub-state actors – but this requires an intimate knowledge of each state. In this work, I have focused on these aspects at the level of the states.

Figure 8. Blue Nile Country Positions and Interests



Egypt's current official position is not anti-dam⁴³³. In El-Sisi's Egypt, public officials have walked a thin line between emphasizing that Egypt's water security will not be threatened, while also recognizing Ethiopia's right to develop. Its current position is to try to extend the filling time of the GERD to limit the amount of water reduced downstream during the filling process. In the short term, many risks from filling the dam may be mitigated through establishing a minimum annual release and collectively developing a filling strategy that accounts for dry-, medium-, and wet-season conditions (Wheeler, et al. 2016). However, the political risks of reaching an agreement that does not recognize the 1959 Nile Agreement allocations may be too high. Reaching an agreement will require creating a more enabling political environment.

Egypt also has significant concerns for the medium- and long-term. First, it has a rapidly growing and urbanizing population, which puts additional pressure on its already limited water resources and on its demand for agriculture. Second, although the long-term operation of the GERD should not reduce Egypt's water supply (post-filling), the regularization of the Nile flow will enable Sudan to use its historically underutilized allocation

⁴³³ It is important to make the distinction between the unofficial and official position of each of the countries. Although Al-Sisi's Egypt is not officially anti-dam (this should not be read as being pro-dam), nearly all Egyptian interviewees expressed discomfort with the idea of their upstream neighbor having control over such a vital resource.

of Nile water (Casção and Nicol 2016b). This may reduce Egypt's water supply⁴³⁴. This concern is less openly discussed within the Basin. Third, a growing concern is that rising sea levels due to climate change will reduce the amount of agricultural land available in the Nile Delta. This could have detrimental effects on Egypt's food security and its socioeconomic stability, as more than one quarter of the population is currently employed in the agricultural sector.

Egypt has recently started taking measures to improve its water and food security. It has increased investments in water-saving technologies (especially desalination plants); implemented policies that reduce agricultural water use (e.g., by reducing the amount of area for rice cultivation); and is trying to increase public discourse on water security (e.g., by organizing an annual Cairo Water Week).

Over the last few years, Sudan has been pro-dam. Water officials insist that Sudan did not change its position on the dam (as perceived by Egyptians), but that it has always acted according to its own interests. Sudan stands to benefit significantly from the dam from regularized Blue Nile flow, reduced flooding, reduced sedimentation (thereby improving the function of its hydroelectric dams), and potentially through purchasing energy from Ethiopia (Jeuland, Wu, and Whittington 2017; Whittington, Waterbury, and Jeuland 2014). Although there are some remaining concerns about the potential safety and environmental impacts of the dam (Moghraby 2018), these concerns appear to be in the minority.

Sudan has historically aligned itself with Egypt on water issues. Like Egypt, Sudan also refused to sign the CFA in 2010 and (with Egypt) left the NBI. However, within a couple years, Sudan rejoined the NBI and started to play a more prominent role in Nile hydropolitics through the NBI⁴³⁵. Several Sudanese officials commented that, while they will continue to respect the 1959 Nile Agreement, they considered it unfair and a mistake on the part of the government at that time. Relatedly, there is an increasing frustration with the fact that they have not even been able to use their full 18.5 billion cubic meter allocation (under the 1959 Nile Agreement) due to lack of infrastructure.

Although the Nile issue is not politicized internally to the extent that it is in Egypt, it seems to come up as a brokering chip in broader foreign policy interests (e.g. the Halayeb Triangle) and in geopolitical tensions. All of this could change depending on who replaces al-Bashir in Sudan.

Ethiopia would prefer the shortest filling time possible to begin generating electricity to use domestically and to sell to its neighbors⁴³⁶. Former Ethiopian Prime Minister Meles Zenawi framed hydroelectricity generation as Ethiopia's sovereign right, stating⁴³⁷, "We are so convinced of the justice of our cause, so sure of the strength and rationality of our hydropower projects in eliminating poverty in our country that we will use every ounce of our strength, every dime of money that we can save to complete our program." This speaks to Ethiopia's underlying interests – namely, poverty alleviation, economic development, and recognition as a regional leader.

⁴³⁴ Data on Sudanese water usage is difficult to find. While some interviewees suggest that approximately 5 BCM of Sudan's allocation is unused by Sudan (thereby flowing downstream for use by Egypt), others have suggested that Sudan is already using its full allocation. Without transparent water use data sharing, this is a difficult point to confirm or deny.

⁴³⁵ The current Executive Director of the Nile Basin Initiative (as of May of 2019) is Professor Seifeldin Hamad Abdalla. Before this post, starting in July of 2012, Professor Seifeldin was the Chairman of the Water Resources Technical Organ in Sudan – the main decision-making body for transboundary water in Sudan. Before then, he was the Minister of Water Resources from December 2011 to 2012. He has been one of the few individuals involved in the entirety of both the CFA and GERD negotiations, and has therefore witnessed first-hand the entire arc of collective action efforts in the basin. It is possible that under his leadership, the NBI will be able to coax Egypt to rejoin.

⁴³⁶ It is unclear how much energy generated by the GERD will be used domestically versus sold regionally.

⁴³⁷ This was from former Ethiopian Prime Minister Meles Zenawi's opening speech for the Hydropower for Sustainable Development 2011 Conference in Addis Ababa on March 31, 2011. Meles Zenawi described his country's plan to achieve zero net carbon emissions by 2025, largely through shifting to hydroelectricity.

The dam has come to represent something much larger than just a hydroelectric dam by the Ethiopian public. Their pride in the dam was reflected in July of 2018, when the former GERD project manager, Simegnaw Bekele, was found shot dead in his car in Addis Ababa. Thousands of Ethiopians took to the streets in spontaneous demonstrations to demand ‘justice for the engineer’, whose sudden death and circumstances around his death raised questions about how, and why, he died (Maasho 2018). This public show of affection only gained momentum during his funeral, when police resorted to using tear gas to stave off protestors who tried to enter the church where he was buried among other national heroes (Marsh 2018). Notwithstanding the recent allegations of government corruption in dam construction (GCR 2018), the dam has arguably been the single most important symbol of national unity in Ethiopia since the announcement of its construction.

The Eastern Nile countries are currently (as of June 2019) at an impasse – both at the levels of the TNC and the National Independent Scientific Research Group. After the Inception Report was released by the consultants, the TNC members of the three countries developed their own list of comments to be delivered to the consultant related to the TOR. However, upon review of each other’s comments, they felt that some were more instructional than others about what should and should not be included in the Inception Report. This led to another breakdown in the TNC process, as the country representatives are trying to agree on a way to give the consultants feedback without reflecting their national biases. The National Independent Scientific Research Group is also at an impasse. Their recommendations on how to fill the dam were submitted to the three Ministers of Water in August 2018, but were not accepted by Egypt.

In February of 2019, the three countries’ Heads of State – El Sisi, Ahmed, and al-Bashir – reiterated their support for the negotiations during the 32nd African Union summit (*Asbarq Al-Aswat* 2019). However, due to the current political upheaval⁴³⁸ in Sudan, any resolutions related to the filling of the dam and to the consultants’ Inception Report have been further delayed.

Meanwhile, although 66 percent of the dam has been constructed⁴³⁹ by the Italian contractor Salini Impregilo, the expected date of completion for the construction of the GERD (initially expected end of 2017), has been pushed back to 2022 due to technical problems and construction delays related to the work of METEC, the Ethiopian Metals and Engineering Corporation. METEC, which is run by the Ethiopian Defense Forces, was awarded the contract to oversee electromechanical and hydraulic steel work for the GERD in November of 2011. In August of 2018, Ethiopian PM Abiy Ahmed canceled their contract (Ingram 2018). Shortly after, METEC was accused of embezzling over eight billion Ethiopian birr from the GERD (*Egeza News* 2018). This is significant, as hundreds of millions of dollars came from the Ethiopian public⁴⁴⁰.

Since then, the government-owned Ethiopian Electric Power (EEP) company has signed contracts with German, Italian and French companies to complete the work that METEC failed to do (*AllAfrica.Com* 2019). Electricity generation is still expected to begin through two turbines in 2020⁴⁴¹, which means that the countries must still reach an agreement on the filling of the dam within the next year.

⁴³⁸ After nearly four months of mass protests in Sudan, former Sudanese President al-Bashir was forced to step down in early April 2019.

⁴³⁹ According to the new GERD Project Manager, Eng. Kifle Horo, as of March 2019, "Eighty-one percent of the dam and 82 percent of overall civil works [main dam, saddle dam and the spillway] of the project have already been executed. 94 and 99 percent of the saddle dam and the spillway, respectively are completed" (*AllAfrica.Com* 2019).

⁴⁴⁰ According to the Communication Director at the Office of National Council for the Coordination of Public Participation on the Construction of the GERD, the level of public support for the dam flagged due to delays in the construction, but the project managers have conducted several stakeholder outreaches to improve the public’s support of the dam: "There was fluctuation of public participation and upheavals due to gaps and problems during the construction process. So we informed the public every problem and its solution in various stages. We held five stages from December to date with stakeholders in order to revive their participation. So peoples' trust is reviving and are becoming part of the solution" (*AllAfrica.Com* 2019). If this leads to loss of public support for the GERD, it could have significant consequences on the GERD negotiations.

⁴⁴¹ The turbines will generate 750 megawatts of electricity (Gebre 2018).

The three Blue Nile countries face three major decision points in the short, medium, and long-term. In the short-term, they must reach agreement on the filling of the GERD. Although the negotiation process has been derailed several times due to political transitions, they will likely reach agreement before filling commences because the costs of non-cooperation will be much higher than the costs of cooperation. Furthermore, the discussion of benefits from the dam make it slightly more politically feasible to reach agreement (at least in the case of Sudan).

In the medium-term, they must also reach agreement on the co-operation of the GERD and HAD in case of an extreme multi-year drought (Jeuland, Wu, and Whittington 2017). This will be significantly more difficult because it requires decision-making under extreme uncertainty and discussion of risks (rather than benefits). Two major shifts need to occur for this to happen. First, scientific communities within all three countries need to work closely with politicians to craft an agreement that is both technically and politically feasible. International experts can help to conduct some of the technical analyses to improve the decision-making process. Second, political resolve for an agreement must be built by allaying Egyptian fears about any potential decrease in Nile water. This will be extremely difficult given that fears related to losing access to water are deep-seated and instinctual⁴⁴². This political resolve can only be built in an environment of trust and/or reduced interdependency among the countries. Trust building needs to occur, not only among negotiators and Heads of State, but also among the publics of the three countries. Media plays a critical role in improving the public's technical understanding of the potential distribution of costs, benefits, and risks of longer-term co-operation of the Blue Nile dams. Concurrently, efforts should be made to reduce Egypt's dependence on the Nile over time. The likelihood of all of these conditions being satisfied is difficult to predict given the number of political transitions the countries have gone through (and are going through) in recent years. However, some consistency in international support may help ensure that some level of cooperation on transboundary water governance is maintained despite changes in political regimes.

In the long-term, Egypt, Ethiopia, and Sudan must decide how to coordinate existing infrastructure with planned development. Ethiopia plans to develop a cascade of dams upstream of the GERD, while Sudan plans to expand its agriculture. These may both reduce the amount of water flowing downstream to Egypt. In the absence of cooperation, these plans will increase the pressure and tension within the region and, potentially, the likelihood of inter-state conflict. Some Sudanese and Ethiopian negotiators feel confident that Egypt will learn to trust them through repeated experiences like the GERD negotiations. I am less hopeful. The ideal situation is one in which the three countries jointly plan management of the Blue Nile in a way that increases their regional resilience (i.e., in pursuit of the common good) through institutions like the Eastern Nile Technical Regional Office and the Nile Basin Initiative. However, this requires broader recognition that each state's water security is intertwined with that of its neighbors'.

⁴⁴² For more on how 'ancient instincts' related to water or our basic needs may confound policymaking, see Whittington (2016). For more on how negotiations on water may necessitate recognition of the spiritual significance of water, see (Wolf 2008).

Appendix 2. Multilateral and Basin-wide Water Agreements⁴⁴³

Basin Name	Number of Basin Countries	Number of Riparians	Signatories	Non-Signatory Basin Countries	Agreement	Year
Amazon	8	6	Bolivia, Brazil, Colombia, Ecuador, Guyana , Peru, Suriname , Venezuela	Basin-wide	Treaty for Amazonian cooperation	7/3/78
Danube	19	10	Austria, Bulgaria, Croatia, Czech Republic , European Union , Germany, Hungary, Moldova, Romania, Slovakia, Slovenia , Ukraine	Albania, Italy, Macedonia, Poland, Switzerland, Serbia, Montenegro, Bosnia and Herzegovina	Convention on cooperation for the protection and sustainable use of the River Danube (DRPC)	6/29/94
Elbe	4	2	Czech Republic, Germany, EU	Austria, Poland	Convention on the international commission for the protection of the Elbe	10/8/90
Gambia	3	3	Gambia, People's Revolutionary Republic of Guinea, Senegal	Basin-wide	Convention relating to the status of the River Gambia	6/30/78
Inkomati, Maputo	3	3 ²	South Africa, Mozambique, Swaziland	Basin-wide	Tripartite Interim Agreement between the Republic of Mozambique and the Republic of South Africa and the Kingdom of Swaziland for co-operation on the protection and sustainable utilisation of the water resources of the Incomati and Maputo watercourses	8/29/02

⁴⁴³ “Multilateral and Basin-wide water agreements”, was generated using data from the Transboundary Freshwater Dispute Database managed by Oregon State University.

La Plata	5	5	Argentina, Bolivia, Brasil, Paraguay, Uruguay	Basin-wide	Treaty of the River Plata Basin	4/23/69
Mekong	6	6	Cambodia, Laos, Thailand, Vietnam	China, Myanmar	Agreement on the cooperation for the sustainable development of the Mekong River Basin	4/5/95
Niger	10	5	Benin, Burkina Faso, Cameroon, Cote D'Ivoire, Guinea, Mali, Niger, Nigeria, Chad	Algeria	Revised convention pertaining to the creation of the Niger Basin Authority, signed at N'Djamena	10/29/87
Oder	3	3 ²	Germany, Czech Republic, Poland	Basin-wide	Agreement between the Federal Republic of Germany, the Czech Republic and the Republic of Poland on protection of the Oder river from pollution	4/11/96
Okavango	3	3	Angola, Botswana, Namibia	Basin-wide	Agreement between the governments of the Republic of Angola, the Republic of Botswana, and the Republic of Namibia on the establishment of a permanent Okavango River Basin Water Commission (OKACOM)	9/16/94
Senegal	4	3 ²	Mali, Mauritania, Senegal	Guinea (observer)/arguably basin-wide?	Senegal River Water Charter	5/28/02
Volta	6	4	Benin, Burkina Faso, Cote D'Ivoire, Ghana, Mali, Togo	Basin-wide	Convention on the status of the Volta River and the Establishment	1/19/07

					of Volta Basin Authority	
Zambezi	8	6	Angola, Namibia, Malawi, Botswana, Mozambique, Tanzania, Zambia, Zimbabwe	Basin-wide	Agreement on the Establishment of the Zambezi Watercourse Commission	7/13/04
Rhine	9	6	France, Luxembourg, Germany, Switzerland, Netherlands, European Union; Austria (observer), Belgium (observer), Liechtenstein (observer)	Arguably basin-wide: Italy (only small part in river basin)	Convention on the protection of the Rhine	4/12/99
Nile	11	10	Ethiopia, Uganda, Rwanda, Tanzania, Kenya, Burundi	Sudan, Egypt, DRC, South Sudan, Eritrea (observer)	Cooperative Framework Agreement (not in force)	

Appendix 3. Unresolved Issues in Final PoE Report (CFA)

The Panel of Experts who originally drafted the Cooperative Framework reached consensus on 19 provisions, but were unable to reach consensus on 17. These 17 Provisions dealt with six issues: (i) Information concerning planned and existing measures; (ii) Existing agreements; (iii) Equitable and reasonable utilization (specifically with reference to the factors); (iv) Prevention of causing significant harm; (v) Environmental impact assessments and audits; and (vi) Water has a social and economic value. Although it was not listed in the Final Report, I have also included the ‘Definition of Terms’ as a category since it was raised as an unresolved issue during the eighth POE meeting⁴⁴⁴, and then again more formally during the Transitional Committee meetings.

These original text related to these issues, the significance of the debate, and an explanation for how these were eventually resolved is described in the table below. Of these six areas, two (information concerning planned and existing measures and existing agreements) remained contentious throughout the formal negotiations in the ten years that followed.

Table 17. Unresolved Issues in the Final POE Report

Issue	Original POE Text Meaning	Dissent
Existing Agreements	‘The principle that existing agreements conform to the Framework’. (Principle 15)	Egypt and Sudan suggested it should instead read, “The principles and framework are without prejudice to existing agreements”.
Equitable and Reasonable Utilization	‘Equitable and reasonable utilization’ (Article 16 in POE report) was defined in the early draft by the same factors that were listed in the 1997 UNWC.	Ethiopia entered a reservation that the factors should be revised, taking Nile realities into account.
Prevention of Significant Harm	The original title read ‘ <u>Prevention of causing significant harm</u> ’ and the original text read ‘Nile Basin States shall, in utilizing Nile River Basin water resources in their territories, <u>take all appropriate measures to prevent</u> the causing of significant harm to other Basin States.’	Egypt proposed that the title should read ‘Obligation not to cause significant harm’, which is the same as Article 7 of the UNWC, and that the second underlined text should read, ‘refrain from and prevent’. Ethiopia suggested that the article on ‘Equitable and Reasonable Utilization’ already covered the prevention of harm.
Planned and Existing Measures	This principle outlines the practices for notifying other countries that may be affected by planned hydraulic development. The early text is very similar to Article 12 of the 1997 UNWC.	Egypt suggested that the provisions for this article be replaced by Part III. ‘Planned Measures’ (Articles 11-19) of the 1997 UNWC. Ethiopia suggested that the provision should be deleted altogether because planned measures would only be relevant if all the countries reached an acceptable water sharing agreement.
Environmental Assessments and Audits	The text related to this principle suggests that member states should undertake a comprehensive assessment for any projects that may have significant adverse environmental impacts and that the criteria and procedures for those assessments should	Ethiopia suggested that ‘by the Nile River Basin Commission’ should be replaced by ‘each country, based on its relevant policy and legislation’.

⁴⁴⁴ Ethiopian members also raised ‘the issue [of] whether the POE is dealing with the Nile river water resources or the Nile river basin’, but this issue was ‘postponed to be looked into when the definitions’ were discussed. Source: ‘Minutes of the Eighth Meeting of the Panel of Experts Entebbe, 7-10 December 1999’.

	be determined <u>by the Nile River Basin Commission</u> .	
	The Principle (Article 11) suggested that environmental assessments should be conducted of proposed <u>and existing</u> projects.	Egypt and Sudan entered a reservation related to ‘existing projects’. Ethiopia proposed that the principle should refer to environmental impact assessment of ‘projects and programs, in accordance with national policies and legislation’. [
Water has a social and economic value	The original text states that, ‘[t]he principle that water is a <u>natural resource</u> having social and economic value, <u>whose utilization should give priority to its most economic use</u> , taking into account the satisfaction of basic human needs and the safeguarding of ecosystems.’	Egyptians proposed deleting the phrase ‘whose utilization should give priority to its most economic use’. Ethiopians and Kenyans proposed changing ‘natural resource’ to ‘an economic good’.
Use of Terms (Article 2) *Raised during the eighth POE meeting and then again during the Transitional Committee meetings	‘Nile River Basin’ refers to the ‘geographical area determined by the watershed limits of the Nile River system of waters,’ whereas the ‘Nile River System’ refers to ‘the Nile River and the surface waters and groundwaters which are related to the Nile River’.	During the Transitional Committee discussions, Ethiopian members of the POE proposed that any references to the ‘waters of the Nile River Basin’ be replaced by ‘Nile watercourses’. Over the course of Transitional Committee meetings and Negotiations Committee meetings, this evolved into a discussion of ‘Nile River System’ versus ‘Nile River Basin’, where ‘System’ would refer to Nile water uses and impacts, while ‘River Basin’ would refer to ‘territories, conservation and protection issues.’

Appendix 4. Evolution of 'Water Security' Definition (CFA)

Table 18. Evolution of 'Water Security' definition during Nile-COM negotiations

Date	Participants	Text of Article 14	Objections	Description
May 3-6, 2006	Chairman of the NC, Nile-COM, David Grey	<p>“Water Security” defined as “the right of all Nile Basin States to reliable access to and use of the Nile River system [water] for health, agriculture, livelihoods and production.”</p> <p>14a: to work together to ensure that all States achieve and sustain water security,</p> <p>14b: not to adversely affect the water security or the present and future uses or rights of any other Nile Basin States.</p>	Ethiopia registered an objection to 14(b) and proposed alternative text: ‘to utilize the Nile River system in accordance with the principles of equitable utilization and causing no significant harm’	<p>This was referred to as the ‘Bujumbura text’ since the meeting was in Bujumbura.</p> <p>The Minutes suggest that all the countries, other than Ethiopia, agreed to a definition of ‘Water Security’ that recognized ‘the present and future uses or rights’, which would have included the 1959 Nile Agreement.</p>
Feb. 19-20, 2007	Report of the 9 th Session of the NC (All members of NC, Nile-COM, ED of NBI and David Grey)			Ethiopia presented proposals in order to join consensus, but no consensus was reached on their proposal.
Feb 21-23, 2007	Extraordinary meeting of Nile-COM	Compromise version on 14b: ‘not to affect in a significant manner the water security’		Consultations happened in different countries and proposals were made by Ethiopia. Egypt and Sudan reiterated their support for the Bujumbura text (May 3-6, 2006). When no consensus was reached, a Committee comprised of the Ministers from Egypt, Ethiopia, Sudan and Uganda was established to find a way to reach an agreement. Uganda would chair the committee and it was agreed that the subcommittee would finalize their work in 30 days.
June 24-25, 2007	15 th Nile-COM Meeting			Dr. Mahmoud Abu-Zeid, Minister for Water Resources and Irrigation of Egypt, noted that water management in the Nile Basin is not a zero-sum

				game and reiterated Egypt's commitment to NBI. Nile-COM ultimately decided to refer the matter to the Heads of State.
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Appendix 5. Summary Table: Reducing Barriers in CFA Negotiations

Table 19. Reducing Obstacles to CFA negotiations through Procedural and Institutional Obstacles

	Start of Process	Final Year of Process	Procedural Intervention (through CFA negotiation process)	Non-procedural intervention (through NBI)
States	9*	7	Donors initially encouraged Nile countries to move by consensus during final year of negotiations.	N/A
Groups	POE, TC, NC	Nile-COM, Nile-TAC, NC	(i) Number of individuals involved in each stage of the negotiations is limited; (ii) Each country team has one spokesperson; (iii) Third party facilitation (first, UNDP and then WB).	
Capabilities	HIGH: Upstream countries had limited technical, negotiation, and legal capacities	LOW: Equivalent capacities.	(i) Experts involved in each stage; (ii) Brought in international experts on treaty and river basin organization (RBO) design; (iii) Ensure fair process by limiting number of representatives and process management by neutral facilitator (World Bank); and (iv) taking 1997 UNWC as a starting point.	Technical capacities of countries built through work of the Nile Basin Initiative.
Preferences	HIGH: Differences in preferences on how to structure the RBO, legal terms, etc.	LOW: Consensus reached on every part of the CFA except for Article 14(b).	(i) Each provision of the CFA was negotiated; (ii) Using the 1997 UNWC as a starting point helped the countries avoid getting stuck on the principles that outlined their preferences ⁴⁴⁵ ; (iii) Inserting ‘constructive ambiguity’ into the agreement.	
Information	HIGH: Gap in countries’ information (legal, technical, etc.)	LOW	Hired experts throughout the negotiations to conduct studies for the benefit of all the countries (e.g. Blackmore and Whittington; McCaffrey).	Data sharing and collection through NBI helps to ensure that all the basin countries have the same ‘facts’ about the basin.
Beliefs	No Harm versus Equitable Utilization		(i) River basin study tours helped Nile countries recognize the potential benefits realized through basin-wide cooperation; (ii) Donors emphasized shifting from looking at Nile water as a zero-sum game to sharing the benefits of water use (Grey and Sadoff); (iii)	
	Historic versus Equitable Utilization		(i) ‘Water Security’ included as ambiguous provision on the CFA; (ii) Emphasis throughout the process on benefit-sharing versus zero-sum negotiations ⁴⁴⁶ .	

⁴⁴⁵ Quote from Egyptian negotiator (Interview March 18, 2015): “[W]e were in agreement on ‘equitable utilization’. The international law is not a selective part. You have to accept all the principles or you don’t accept.”

⁴⁴⁶ In evaluating the CFA process as a whole, an Egyptian negotiator stated (March 18, 2015), “the river belongs to all of us. And you can go for one paper which David Grey and Claudia Sadoff wrote that we can benefit from the paper... and there are a lot of benefits.” The Grey and Sadoff (2002) paper that he was referring to entitled, ‘Beyond the river: the benefits of cooperation on international rivers’ and describes a mutual gains approach to basin-wide water management. This paper was referenced by several interviewees.

	Differences in perceptions of 'fairness'.		(i) Countries negotiated on which term to apply ('Nile River Basin' versus 'Nile River System') on each provision of the CFA.	Aerial tours of the Basin helped build empathy ⁴⁴⁷ .
Culture/ Language/ Histories	HIGH: History of slave trade, Arab 'supremacy', came up often in early negotiations.	HIGH, but it decreased as an obstacle due to trust-building.	Trust building during the negotiations helped negotiators connect to each other as individuals, thereby partially overcoming differences in culture/language/histories as an obstacle to collective action. Procedural interventions include: (i) Informal deliberation in the Nile 2002 Conferences, POE, and River Basin Study Tours; (ii) Continuity of actors.	e.g., Creating a collective 'Nile' identity ("One River. One People. One Voice") through work of the NBI. This includes Nile Day and media campaigns by NBI to emphasize the benefits of basin-wide cooperation.

⁴⁴⁷ Egyptian negotiator emphasized the importance of CFA negotiations and work of NBI in building empathy among the countries. Described how touring the Basin helped all the country representatives understand each other's concerns (Interview: March 18, 2015): "At least, I myself, now understand their concerns. And I hope they understand our concerns, and so on. Because before that, I myself, I have toured all the places of the Nile Basin."

Appendix 6. Comparing DoP text to CFA text

Articles of the Declaration of Principles	Declaration of Principles (on the GERD)	CFA (signed draft) (relevant articles)
1. Principle of Cooperation	<p>Cooperation based on mutual understanding, common interest, good intentions, benefits for all, and the principles of international law.</p> <p>Cooperation in understanding the water needs of upstream and downstream countries across all their lands.</p>	<p>Article 1. Principle of Cooperation The principle of cooperation between States of the Nile River Basin on the basis of sovereign equality, territorial integrity, mutual benefit and good faith in order to attain optimal utilization and adequate protection and conservation of the Nile River Basin and to promote joint efforts to achieve social and economic development.</p>
2. Principle of development, regional integration and sustainability	<p>The purpose of the Renaissance Dam is to generate power, contribute to economic development, promote cooperation beyond borders, and regional integration through generating clean sustainable energy that can be relied on.</p>	<p>Article 2. Principle of sustainable development of the Nile River Basin.</p>
3. Principle of not causing significant damage	<p>The three countries will take all the necessary procedures to avoid causing significant damage while using the Blue Nile (the Nile's main river). In spite of that, in case significant damage is caused to one of these countries, the country causing the damage [...], in the absence of an agreement over that [damaging] action, [is to take] all the necessary procedures to alleviate this damage, and discuss compensation whenever convenient.</p>	<p>Article 5. Prevention of the causing of significant harm: The principle of preventing the causing of significant harm to other States of the Nile River Basin.</p> <p>Nile Basin States shall, in utilizing Nile River System water resources in their territories, take all appropriate measures to prevent the causing of significant harm to other Basin States.</p> <p>Where significant harm nevertheless is caused to another Nile Basin State, the State, whose use causes such harm shall, in the absence of agreement to such use, take all appropriate measures, having due regard to the provisions of Article 4 above, in consultation with the affected State, to eliminate or mitigate such harm and, where appropriate, to discuss the question of compensation.</p>
4. Principle of fair and appropriate use	<p>The three countries will use their common water sources in their provinces in a fair and appropriate manner.</p> <p>To ensure fair and appropriate use, the three countries will take into consideration all guiding elements mentioned below: [factors are the same as those listed in the CFA]</p>	<p>Article 4. Equitable and reasonable utilization: The principle of equitable and reasonable utilization of the waters of the Nile River System.</p> <p>In ensuring that their utilization of Nile River System water resources is equitable and reasonable, Nile Basin States shall take into account all relevant factors and circumstances, including but not limited to the following:</p>

		<p>(a) Geographic, hydrographic, hydrological, climatic, ecological and other factors of a natural character;</p> <p>(b) The social and economic needs of the Basin States concerned;</p> <p>(c) The population dependent on the water resources in each Basin State;</p> <p>(d) The effects of the use or uses of the water resources in one Basin State on other Basin States;</p> <p>(e) Existing and potential uses of the water resources;</p> <p>(f) Conservation, protection, development and economy of use of the water resources and the costs of measures taken to that effect;</p> <p>(g) The availability of alternatives, of comparable value, to a particular planned or existing use;</p> <p>(h) The contribution of each Basin State to the waters of the Nile River system;</p> <p>(i) The extent and proportion of the drainage area in the territory of each Basin State.</p>
<p>5. The principle of the dam's storage reservoir first filling, and dam operation policies.</p>	<p>- To apply the recommendations of the international technical experts committee and the results of the final report of the Tripartite National Technical Committee during different stages of the dam project.</p> <p>- The three countries should cooperate to use the final findings in the studies recommended by the Tripartite National Technical Committee and international technical experts in order to reach:</p> <p>a. An agreement on the guidelines for different scenarios of the first filling of the Grand Ethiopian Renaissance Dam reservoir in parallel with the construction of the dam.</p> <p>b. An agreement on the guidelines and annual operation policies of the</p>	

	<p>Renaissance Dam, which the owners can adjust from time to time.</p> <p>c. To inform downstream countries, Egypt and Sudan, on any urgent circumstances that would call for a change in the operations of the dam, in order to ensure coordination with downstream countries' water reservoirs.</p> <p>- Accordingly the three countries are to establish a proper mechanism through their ministries of water and irrigation.</p> <p>- The timeframe for such points mentioned above is 15 months from the start of preparing two studies about the dam by the international technical committee.</p>	
6. The principle of building trust	Downstream countries will be given priority to purchase energy generated by the Grand Ethiopian Renaissance Dam.	
7. The principle of exchange of information and data	Egypt, Ethiopia and Sudan will provide the information and data required to conduct the studies of the national experts committees from the three countries in the proper time.	<p>Article 10. Exchange of data and information:</p> <p>The principle of the regular and reciprocal exchange among States of the Nile River Basin of readily available and relevant data and information on existing measures and on the condition of water resources of the Basin, where possible in a form that facilitates its utilization by the States to which it is communicated.</p>
8. The principle of dam security	<p>- The three countries appreciate all efforts made by Ethiopia up until now to implement the recommendations of the international experts committee regarding the safety of the dam.</p> <p>- Ethiopia will continue in good will to implement all recommendations related to the dam's security in the reports of the international technical experts.</p>	
9. The principle of the sovereignty, unity and territorial integrity of the State	The three countries cooperate on the basis of equal sovereignty, unity and territorial integrity of the state, mutual benefit and good will, in order to reach the better use and protection of the River Nile.	<p>Article 6. The right of Nile Basin States to use water within their territories</p> <p>The principle that each Nile Basin State has the right to use, within its territory, the waters of the Nile River System in a manner that is consistent with the other basic principles referred to herein.</p>
10. The principle of the peaceful settlement of disputes	The three countries commit to settle any dispute resulting from the interpretation or application of the declaration of principles through talks or negotiations based on the good will principle. If the parties involved do not	<p>Article 12. Peaceful resolution of disputes</p>

	succeed in solving the dispute through talks or negotiations, they can ask for mediation or refer the matter to their heads of states or prime ministers.	
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Appendix 7. Select List of Interviewees

	Name	Description of Role	Month and Year of Interview
International Experts	Blackmore, Don	International expert on transboundary river basin management. Conducted Eastern Nile basin report (2008). Observed many of the CFA negotiations as part of World Bank team (2005 – 2010).	March 2015
	Cascão, Ana	Scholar of Nile hydrogeopolitics/independent researcher.	
	Grey, David	Team leader of the World Bank's support to Nile Basin cooperation (1997 – 2006), with continued engagement as the Bank's Senior Water Adviser (2007-2009).	April 2016; May 2016; July 2016; June 2018
	McCaffrey, Steven	Special Rapporteur for 1997 UNWC and Legal Consultant guiding Nile Basin countries during the CFA drafting and negotiation process.	Feb. 2015
Egypt	Abu Zeid, Khaled	Director of Water Resources Program at the Center for Environment and Development for the Arab Region and Europe (CEDARE).	March 2015
	Abu Zeid, Mahmoud	Former Minister of Water Resources of Egypt; President of Arab Water Council; Former President of International Water Resources Association. Involved in NBI process (2000 – 2010) and participated in CFA negotiations (2005 - 2009).	March 2015
	Al-Bashwary, Aly	Prof. Faculty of Engineering, Ains Shams University.	July 2018
	Allam, Mohamed Naser Eldin	Former Minister of Water Resources of Egypt. Participated in CFA negotiations (2009 – 2010).	April 2015
	Al Taweel, Amany	Researcher at Al Ahram Center for Strategic and Political Studies (national Egyptian think tank).	July 2018
	Amer, Amb. Magdy	Former Assistant Foreign Minister for Nile Waters and Nile Basin Affairs (Sep. 2011 – 2013) and Egypt's National Coordinator for Nile Waters Issues within Ministry of Foreign Affairs.	July 2018
	El Hatow, Lama	Cofounder of the Water Institute of the Nile (civil society organization).	March 2015
	El Mongy, Mohamed	Founder of Nile Forum (civil society organization).	July 2018
	Egyptian journalists	Interviews with four Egyptian journalists covering Nile affairs within three different news agencies.	July 2018
	Girgis, Mina	Co-founder of the Nile Project, an organization focused on connecting Nile Basin residents through music.	June 2018
	Mahmoud, Mohamed	Deputy Chairperson, Egyptian Nile Basin Discourse (transboundary network of civil society organizations).	Nov. 2017
Metawie, Abdel Fattah	Former Chairman of the Nile Water Sector within the Ministry of Water Resources. Wrote papers for the Nile	March 2015	

		2002 Conferences. In 1997, he was the Director of the Technical Office of the Ministry of Water. Before that, he was the director of the Technical Office of the National Water Resources Research Center. W/regards to direct involvement in NBI, he was the Deputy Chairman of the Nile Water Sector in 1999 and the Chairman of the Nile Sector in 2003 until April 2011.	
	Ministry of Foreign Affairs, Nile Sector	Interviews with mid- and senior- officials involved in GERD negotiations.	June and July 2018
	Moghazy, Hossam	Former Minister of Water Resources (June 2014 – April 2016). Led Egyptian delegation on meetings of the TNC on the GERD.	July 2018
	Mohieddin, Mohamed	Professor of Sociology, Menoufia University, Egypt and former NBI Social Development Officer.	July 2018
	Tawfik, Rawia	Political Scientist and Nile hydropolitics scholar, Cairo University.	July 2018
Sudan	Abdalla, Seifeldin Hamad	Current Executive Director of the Nile Basin Initiative (as of 2019). Former Chair of the Water Resources Technical Organ, Ministry of Water Resources, Irrigation and Electricity (Republic of Sudan). Chief Followed the Transitional Committee negotiations (2000-2001). Part of the TAC negotiations (2003-2005 and onwards). Since 2011, has been part of all negotiations related to transboundary water management along the Blue Nile.	July 2018
	Abuelbishr, Hassan	Director of Irrigation Agency (Sudanese Ministry of Water, Irrigation, and Electricity).	July 2018
	Abdel-Halim, Amb. Abdel-Mahmoud	Sudanese Ambassador to Egypt during time of field research in 2018.	July 2018
	Adam, Ahmed Mohamed	Adviser of the Water Resources Technical Organ (WRTO), Ministry of Water Resources, Irrigation and Electricity (Republic of Sudan)	July 2018
	El-Battahani, Atta	Professor of Political Science, University of Khartoum	July 2018
	El Moghraby, Asim	Emeritus Professor of Ecology, University of Khartoum. Former chair of the Sudanese National Discourse Forum of the Nile Basin Discourse.	July 2018
	El Mufti, Ahmed	Sudanese lawyer. Part of the Panel of Experts that drafted the CFA (1997 - 2000) and head of Sudanese delegation negotiating the CFA (2000 - 2010).	July 2018

	Mohamed Omer		
	El Shazli, Saleh el Dain	Former director of confidence building and stakeholder involvement in NBI (ENTRO).	July 2018
	El-Tayeb, Ahmed	Member of the International Panel of Experts and the Tripartite National Committee during the GERD negotiations. Years of participation in negotiations: 2011 – 2019 (current).	July 2018
	Gamselseed, Min. Khider Mohamed	State Minister and General Manager of Dams Implementation Unit, Sudan. Involved in GERD negotiations.	July 2018
	Onsa, Eltayeb Hassan	Director General, UNESCO Chair in Water Resources, Omdurman Islamic University	July 2018
	Salih, Abdeen	Professor within Water Research Center, Faculty of Engineering, University of Khartoum. Formerly worked with UNESCO on Nile- FRIEND development program.	July 2018
	Salih, Faisal Mohamed	Journalist. Discussed role of media with relation to the Nile.	April 2018
	Salman, Salman	Legal scholar of Nile hydropolitics.	Feb 2015; June 2017
	Yousif, Eng. Hayder	Former Head of the Nile Waters Department of the Ministry of Irrigation and Water Resources (Sudan). Formerly involved in Sudan National Discourse Forum.	July 2018
Ethiopia	Abseno, Musa Muhammed	Former Director of Boundary and Transboundary Waters in the Ministry of Water, Irrigation, and Energy of Ethiopia. Participated in CFA and GERD negotiations.	March 2015
	Ahmed Roble, Amb. Shemsudin	Director General, Boundary and Transboundary Resources Affairs Directorate General, Ministry of Foreign Affairs (at time of interview). Was involved in the GERD negotiations starting from 2015 when the countries selected consultants to conduct studies on the dam.	Aug 2018
	Arsano, Yacob	Professor of Political Science, Addis Ababa University.	Aug 2018
	Asfaw, Gedion	Involved in NBI since it was first initiated (1999) and has been a part of the GERD negotiations since 2011 as a member of the IPoE and then as (Chair of the Tripartite National Committee (until 2018).	March 2015; Aug 2018
	Asfaw, Teferra Beyene	Advisor to the Minister on Transboundary Waters; Former Head of Dams within MoW (2006); Former Director of Boundary and Transboundary Waters (2007-2012); Former Executive Director of NBI Secretariat (2012-2014). Involved in both CFA and GERD negotiations since 2000-1.	March 2015; April 2018; Aug. 2018

Fekade, Wubalem	Head of Social Development and Communication Unit, Eastern Nile Technical Regional Office (ENTRO).	July 2018
Goshu, Solomon	Journalist covering Nile issues.	August 2018
Negash, Fekahmed	Current Executive Director of ENTRO. Former Director of Boundary and Transboundary River Affairs in the Ministry of Water, Irrigation, and Energy of Ethiopia. Participated in CFA and GERD negotiations.	March 2015; April 2018; July 2018
Tafesse, Tesfaye	Scholar of Nile hydropolitics.	March 2015
Tamrat, Imeru	Consultant (lawyer) to the Ministry of Water Resources, Ethiopia. Drafted the D3 project of TECCONILE. Part of the POE for the CFA in 1997.	Aug. 2018

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