

**TRANSFORMATION FOR COOPERATION:  
RIVER BASIN ORGANIZATIONS, NEGOTIATIONS, AND  
THE CASE OF THE NILE BASIN INITIATIVE**

by

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## **ABSTRACT**

Basin-wide River Basin Organizations are widely promoted by reputable international bodies as the best way to achieve cooperation in negotiations over shared basins. As more shared basins around the world face growing water scarcity, the need for international cooperation is becoming more intense. It is not clear whether RBOs should be promoted as a best practice in international basins with numerous riparian states.

Using the case study of the Nile Basin Initiative basin-wide River Basin Organization in Africa, a content analysis of official claims by Nile basin riparian states was performed. This content analysis examined whether or not progress towards achieving transformation in negotiations has occurred under the guidance of the Nile Basin Initiative.

Data collected revealed little or no progress towards transformation in Nile riparian state claims to the Nile waters. The common practice of promoting such organizations in all international basins must be re-examined.

**Key Words:** International Waters; River Basin Organizations; Negotiations; International Cooperation; Nile Basin

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## **LIST OF ABBREVIATIONS**

<b>GDP</b>	<b>Gross Domestic Product</b>
<b>IRI</b>	<b>Inter-Riparian Institution</b>
<b>IWRM</b>	<b>Integrated Water Resources Management</b>
<b>MDG</b>	<b>Millennium Development Goal</b>
<b>NBI</b>	<b>Nile Basin Initiative</b>
<b>NBTF</b>	<b>Nile Basin Trust Fund</b>
<b>RBM</b>	<b>River Basin Management</b>
<b>RBO</b>	<b>River Basin Organization</b>
<b>UN</b>	<b>United Nations</b>
<b>UNESCO</b>	<b>United Nations Educational, Scientific and Cultural Organization</b>
<b>UNFPA</b>	<b>United Nations Population Fund</b>
<b>WB</b>	<b>World Bank</b>



# **1 INTRODUCTION**

## **1.1 The Problem**

In their 2006 report, *Coping with Water Scarcity*, UN-Water projects that “by 2025, 1,800 million people will be living in countries or regions with absolute water scarcity, and two thirds of the world population could be under stress conditions.” If this and other similar forecasts prove accurate, many international basins are likely to face increasingly dire and challenging situations characterized by deeper scarcity in the future. While cooperation is more common than conflict in international water basins around the world, deepening scarcity is likely to intensify the need for and difficulty of achieving swift and effective coordination.

To prevent potential conflicts from arising in increasingly stressed international basins, international bodies such as the World Bank, the World Water Council and Global Water Partnership promote the formation of basin-wide River Basin Organizations (RBOs). RBOs facilitate the joint management of water by all of the riparian states, by which I mean all of the states that have land situated within the boundaries of a natural watercourse or basin. In basins with numerous riparian states, by which I mean three or more riparian states, efforts to achieve cooperation through RBO negotiations are particularly complicated, and may remain fruitless for extended periods or indefinitely. While negotiations drag on, scarcity deepens, environmental

devastation ensues, and water quantity and quality declines, harming the human and ecological systems whose welfare and existence depend on the basin.

There is a need for more research examining the unique situations of international basins with three or more riparian states to determine whether the same general principles that guide bilateral water negotiations should apply in these vastly more complex situations. It is widely recognized in the literature that cooperation is less likely and more difficult to achieve in basins with numerous riparian states. Furthermore, there is a greater likelihood of defection when more parties are involved in negotiations. Intensifying global water scarcity calls for a better understanding of whether or not to maintain the current system: whether negotiations under basin-wide RBOs should continue to be the recommended practice in basins with three or more riparian states.

## **1.2 Research Questions**

This paper seeks to contribute to the growing literature around the broad question: How can transboundary cooperation be achieved most effectively in water-scarce international basins with three or more riparian states? More specifically, I will examine the performance of widely promoted basin-wide River Basin Organizations in water-scarce international basins with three or more riparian states. Through this examination, I hope to explore whether - and how effectively - these institutions transform the negotiation claims of riparian states to move towards achieving cooperation.

My specific research question is: How effectively do basin-wide River Basin Organizations in water-scarce international basins with three or more riparian states promote cooperation by affecting riparian state negotiation claims, and with what prospects for future cooperation? In answering this question, this research will also touch on other secondary questions: How is cooperation best achieved in international water negotiations? How might different types of RBOs (bilateral, for instance) work in these multi-riparian basins? Should basin-wide RBOs be the standard promoted by international organizations and funded by donors like the Canadian government?

This research will explore these questions through a case study of the Nile Basin Initiative (NBI), a basin-wide RBO established in 1999 in the Nile basin of Africa. I will perform a content analysis of official statements by governments of Nile riparian states expressing claims to the Nile waters both before and since the establishment of the NBI. This allows for an examination of whether and how the NBI has transformed claims to the Nile basin waters to promote cooperation in negotiations in the international basin.

### **1.3 Research Importance**

This research is important not only for existing and potential stakeholders in comparable international water basins (riparian states, international aid agencies, donor countries, neighbouring states, etc), but also for other, intra-national transboundary basins because the need for water is consistently “overwhelming, constant and immediate.”<sup>1</sup>

This research will be increasingly pertinent as deepening water scarcity complicates efforts towards cooperation in shared basins and makes conflict more probable. Of the 2.5% of the Earth's water that is fresh water, only 0.3 -0.6% is easily accessible for human use.<sup>2</sup> This represents only approximately 0.007% of the total quantity of water available.<sup>3</sup> While water covers much of the Earth, easily accessible water of the high quality typically provided by rivers is increasingly rare. Water is used by humans domestically for drinking water and sanitation (cleaning, bathing, laundry, gardening, cooking, and recreation), for agricultural development and food production (irrigation and fisheries), for industrial processes (manufacturing cleaning and cooling), for energy production (hydropower and nuclear cooling), for transportation, to discharge wastewater, and as a sink for industrial and household waste. It provides a habitat for fish and other water ecosystems that maintain water flows and support human health, nutrition and recreation. While some uses are consumptive and affect water availability for other users, some are not. The increased population growth, industrialization, urbanization, technological progress, and improved standards of living that contribute to growing water demands and dependencies affect the water available for these countless, diverse purposes and advance scarcity.

Environmental and climate changes may also alter the location, timing, quantity and quality of flows of water. Although the Earth houses lots of water, access is uneven, providing different quantities in different places and at different times. Similarly, the qualities and quantities of water demanded by humans are different in different places and at different times. For instance, agricultural requirements call for vast quantities of

water in hot seasons, whereas hydropower calls for higher levels in cold seasons. These disparities can intensify seasonal scarcities.

Researchers measure the extent of water scarcity by examining water availability per capita over a period, rainfall- and runoff-to-evaporation ratios, and withdrawal-to-availability ratios. These measures are controversial and imprecise, but provide a general idea of the discrepancies between wants, needs, and availability to reveal a trend toward intensifying scarcity. As wants and needs continue to exceed the capacities of water sources, efforts to cooperate over shared waters are likely to become increasingly complicated, and research concerning how best to achieve cooperation will grow increasingly important.

Cooperation may remain elusive in many shared basins because water shares many of the characteristics of widely researched common pool resources. Common pool resources are shared resources that are non-excludable and rivalrous. This means that one cannot exclude people who have not paid for the resource from using or accessing it and consumption is zero-sum: one party's consumption prevents or directly subtracts from opportunities for, or availability of, consumption for another party.<sup>4</sup> Unlike most common pool resources, water's constant fluctuation, unpredictable flow, direction, and variation over time and space create asymmetries in needs and incentives between riparian states. Water is also difficult to store, and one of the few scarce resources for which there is no substitute. These characteristics complicate efforts to achieve cooperation in shared basins, and when cooperation remains elusive, human and environmental stress and damage often expand and may become irreparable.

Deepening water scarcity is not only a concern of the riparian stakeholders of a basin. Numerous international organizations promote the establishment of basin-wide RBOs in all international basins, and fund these efforts with the help of donor countries. However, whether the set up of an RBO is worthwhile and sufficiently helpful in achieving cooperation in diverse types of transboundary basins is not clear. While it is tempting to promote and advance best practices, our understandings about the practical utility and efficacy of existing practices are limited. Supra-national organizations and country-specific development agencies fund many existing RBOs (Canada contributes to the Nile Basin Initiative, for example). This research may help direct these funds more efficiently and ensure that such donations are not wasted.

Gaining a better understanding of cooperation in international basins is also valuable because the number of international basins has increased. This trend results, in part, from political changes that have caused the number of countries in the world to increase from 57 in 1900 to 192 in 2000. Technological improvements in identifying and mapping existing basins have also contributed to an increase in the number of recognized international basins.

Despite this increase, research concerning basins with three or more riparian states is insufficient to provide effective guidance. While case studies have examined many of the basins of the world with more than two riparian states, most of the best practices and established understandings concerning cooperation in shared water basins are based on bilateral basins. Of the 145 treaties in existence, 124 are bilateral.<sup>5</sup> As a result, research concerning negotiations over treaties and agreements between

only two riparian states is more comprehensive. Out of the 263 international basins of the world, 176 have only two riparian states,<sup>6</sup> and only 19 basins are shared by five or more riparian countries.<sup>7</sup> This also contributes to the discrepancy in the amount of research and the level of understanding of multi-riparian basins.

Finally, although this research focuses on the examination of RBOs in basins that traverse the borders of sovereign states, this research is important for intra-national, transboundary basins as well. Transboundary basins are basins that may cross sub-national economic, legal, political or cultural boundaries that demarcate states, provinces, reserves, or “any jurisdictional or sectoral boundaries, including those within a nation” (italics in original).<sup>8</sup> While this research may not directly address such basins, the findings may help explicate situations in transboundary basins involving three or more groups.

## **1.4 Definitions**

Given the specific focus of this research on basin-wide RBOs in multi-riparian international basins, several key definitions may help to clarify the specific focus of this research.

A river basin (sometimes referred to simply as a ‘basin’) can also be called a rivershed, a watershed, a watercourse or a catchment area, and refers to all waters (including both surface- and groundwater) that contribute to a flow which eventually ends in a common terminus.<sup>9</sup> Accordingly, when this work refers to riparian or basin

countries, it is referring to all countries whose ground- or surface- waters contribute to a common flow or river.

International river basins are basins in which any tiny part of the basin's tributaries or catchment area "crosses the political boundaries of two or more nations."<sup>10</sup> However, this research may inform the experiences of various types of joint-management institutions (or other institutions seeking to promote cooperation) in sub-national transboundary basins, as well.

The term organization refers to actors bound together by common goals under certain rules and norms, or, "the formal bodies that implement institutional arrangements."<sup>11</sup> The term institution typically refers to any set of explicitly or implicitly recognized rules and patterns of behaviour that influence interactions (including agreements and treaties), and shape expectations. River Basin Organizations are one form of institution used to manage basin waters. RBOs typically coordinate and manage the cooperative sharing and development of basin waters. The geographic boundaries of a basin define its membership although not all RBOs are basin-wide and include all riparian states.

## **1.5 Organization of Paper**

This introductory chapter has introduced the key research problem, and the key questions driving this research. It has also outlined the importance of this research and clarified definitions of some of the key research terms. Chapter Two will offer a detailed examination of the theoretical background essential to properly understanding the



issue, methodology and conclusions of this research. This theoretical primer and literature review traces a theoretical path through scarcity, cooperation and conflict theories, theory around shared waters and international law, theory around river basin organizations, and negotiation theory.

Next, Chapter Three will briefly outline the methodological approach I took in executing this research. Further details and an examination of the limitations and justifications for the methodology, data sources, data collection and data analysis are included in the Appendix.

Chapter Four introduces the case study: the Nile Basin Initiative. This section will provide essential contextual background information and explain the rationale behind the selection of this particular case.

Finally, in Chapter Five I present my research findings. I discuss the significance of the findings and the broader implications of this research for theory and practice before suggesting areas for further research and recapitulating the general conclusions of the research.

## **2 THEORETICAL BACKGROUND**

### **2.1 International Water Theory**

There are many schools of thought concerning how best to promote cooperation in shared basins despite intensifying water scarcity. Concerns about incidents of conflict and daunting forecasts about the future of the world's water resources have driven a dramatic expansion in research examining transboundary water resources since the early 1990s. This theoretical overview will outline existing theory around the causes and impacts of growing water scarcity, and the characteristics of transboundary water basins that influence the likelihood that growing scarcity will result in cooperation or conflict. Next, because disputes are prevalent and unavoidable in some situations, I will review existing research that has examined how best to achieve cooperation in transboundary basins. This research has examined the role of principles and norms of international law as well as institutions like RBOs. I will then trace research that has more closely examined the characteristics of RBOs that make them more or less successful in promoting cooperation, because international law has proven to be a weak means through which to achieve cooperation in transboundary basins. Some of this research has focused specifically on the strengths and weaknesses of various forms of RBOs, and the RBO features that are most effective in diverse situations. Within these institutions, negotiations seek to achieve cooperation. This theoretical overview will then examine

the research from the field of negotiation theory that has been used to develop theory around how to (or not to) reach consensus in transboundary basins.

## **2.2 Water Scarcity, Cooperation and Conflict**

Theoretical perspectives influence approaches to research about the current and future state of the world's water. Those who subscribe to the Cornucopian school of thought argue that water resources are abundant and technological advancements will protect populations from overwhelming scarcity. In contrast, neo-Malthusians believe that scarcity is growing and that as "use within jurisdictions can no longer be insulated from having an impact on neighbouring jurisdictions,"<sup>12</sup> the potential for violent conflict is increasingly common and intense.

The weight of the evidence available suggests that the truth lies somewhere in between these extremes. Where scarcity is intensifying in transboundary waters, state water consumption impacts other states – especially downstream states – and can create conflicts as scarcity deepens. In the early 1990s, literature focused widely on the potential for conflict in transboundary basins. Later, research suggests that, in transboundary basins, instances of cooperation might be more probable than conflict. Accordingly, the focus of much research has shifted to an examination of the factors that influence cooperative or non-cooperative outcomes in transboundary basins faced with intensifying scarcity. Newer research has tested the potential of many different factors to influence cooperation or conflict. Some studies examine the likelihood of conflict in basins with different types of river configurations. These suggest that there

are more incentives in some configurations than others to protect water quality and quantity. Other studies have tested the impacts of different types of upstream-downstream relations. These studies have established that, typically, downstream states are more enthusiastic about cooperation, but upstream states are “not always averse to cooperation, despite [their] geographical upper hand[s].”<sup>13</sup> These studies have also found that the location of a hegemon in a given basin can influence relations. Cooperation is more likely, for example, if a hegemon is situated downstream. Regardless of how effectively researchers can identify factors that influence cooperation or conflict in basins, many of these features are fixed within a basin and cannot be altered to avoid conflict. Countless factors influence outcomes (and incentives and disincentives to cooperate), from geography to history to economy to military to aggregate state power. As a result, research is increasingly concerned with how to anticipate and actively avoid conflict, and how best to resolve disputes.

### **2.3 International Law and Cooperation**

Often, when seeking to resolve disputes between two or more countries, parties look to international law to guide their decisions. The development of international law informing the use, allocation and management of shared waters started with the 1966 Helsinki Rules. It was then shaped through the 1986 Seoul rules, the 1989 Bellagio draft treaty on Transboundary Groundwater, the 1997 UN Convention on the Law of the Non-Navigational Uses of International Watercourses and the 2004 Berlin Rules. The 37 article 1997 UN Convention was never officially ratified, due to an insufficiency of timely signatures, “but its text has come to serve as a general agreement framework that is

rich in material developed for use by states in resolving their water disputes.”<sup>14</sup> Through this framework, certain norms and principles have emerged. These include the principles of absolute territorial sovereignty, absolute territorial integrity, and more recently, the principles of equitable and reasonable use, avoidance of (or obligation not to cause) significant harm, and prior notification of works which may affect other riparian states. To a lesser degree, international law has also promoted the general obligation to cooperate, and the regular exchange of information and data.

These principles aim to provide broad guidelines - and not detailed, clear rules - to guide the sharing of transboundary waters. An unfortunate consequence of this lack of clarity is that the ambiguous recommendations of international law may be interpreted in different, and sometimes contradictory, ways. They do not “pave a clear path along which disputing states can travel,”<sup>15</sup> and can be difficult and ineffective to employ in negotiations. Because it does not offer insight into which principles should prevail when in conflict, what constitutes ‘significant harm’, or what should be done in cases of non-compliance, international water law is considered to be poorly developed by some. Furthermore, principles of international law are non-binding. For these reasons, institutions like RBOs play an important role in establishing consistent and appropriate interpretations for basins and riparian states.

This research stems from a fundamentally liberalist or neoliberal institutionalist perspective, which assumes that “mutually desirable cooperative outcomes”<sup>16</sup> are possible, even in an anarchic state system without an overarching authoritative body like a government to enforce rules and practices. Neoliberal institutionalists assume that

institutions that “provide information, lower transaction costs, increase transparency, and reduce uncertainty”<sup>17</sup> can facilitate cooperation. In contrast, state actors, researchers and theorists working from realist or neorealist perspectives generally doubt the utility of institutions such as RBOs in producing sustainable cooperative arrangements in situations of water scarcity. The focus, within these schools, on zero-sum gains means that “states often fail to cooperate even when they have common interests,”<sup>18</sup> and may act unilaterally or avoid cooperation.

## **2.4 River Basin Organizations and Cooperation**

In international basins, conflicts can be exceedingly difficult to manage, not only because of the lack of effective international water law, but also because of the lack of a “central authority to solve [problems].”<sup>19</sup> Authors such as Nishat and Faisal (2000), and Kibaroglu and Unver (2000) have stressed that institutional arrangements are important means through which to facilitate and achieve cooperation in international basins. Giordano and Wolf (2003) argue “institutions seem to ameliorate water’s conflict-inducing characteristics”<sup>20</sup> and promote cooperation by preventing riparian states from executing unilateral actions that could negatively impact neighbouring states. Indeed, this promotion of RBOs is even cemented in the 2004 World Bank Water Resources Sector Strategy, as well as at international water and environment conferences dating

back to 1992.<sup>a</sup> Reputable international organizations including the World Bank, the World Water Council and Global Water Partnership also promote RBOs.

Despite the broad support for these institutions, the existence of RBOs in only 60% of international basins with completed agreements demonstrates that such institutions are not necessarily essential for cooperation. In some basins, the operational and transaction costs that accompany the formation and functioning of RBOs may mean that RBOs make efforts less efficient, especially if negotiations drag on over much time. Hensel, Mitchell and Sowers II (2006) argue that high levels of scarcity make it more difficult to establish and achieve cooperation through institutions, but also reassert that cooperation is more likely if a basin-wide institution is in place. Nevertheless, the idea that RBOs should be established to coordinate integrated management and development in every river basin is widely promoted as a good practice and, sometimes, as an ideal.

Research then examined what makes these organizations effective. The struggle to build effective institutions “has produced a variety of organizations that have had varying success in fostering collaboration and in allocating water but are rich with lessons for both the water and negotiations fields.”<sup>21</sup> Factors such as levels of authority or enforcement power, reach, and issue jurisdiction have been carefully considered in the field.

<sup>a</sup> This approach has been promoted (as listed in Dombrowsky, 2007) at international conferences on water and the environment including Dublin (1992); Rio de Janeiro (1992); Paris (1998); The Hague (2000); Bonn (2001); Johannesburg (2002); and Kyoto (2003).

Some researchers assert the importance of the authority or enforcement power of such organizations. In organizations where decisions are binding on member states, negotiations are much more challenging. RBO authority can reduce fears that other parties might cheat or fail to follow through with commitments. However, the risks they entail and accompanying strain on negotiations means that there might not be any agreements to enforce, therefore rendering the organizations ineffective. Where organizations only have the authority to advance recommendations, more flexible solutions are possible, but there is no guarantee that member states will follow through. Of the international RBOs that do exist, very few have extensive authority and enforcement powers, creating a noteworthy mismatch between recommendations and practice. As there is no overarching authority to make and enforce decisions, negotiations around international water management are voluntary, and nations tend to be extremely reluctant to “relinquish any degree of sovereignty to outside authority.”<sup>22</sup> Priscoli (2009), for example, asserts that “even friendly states often have difficulty relinquishing sovereignty to a supra-legal authority and the obstacles only increase along with the level of suspicion and rancor.”<sup>23</sup> This is especially true in the developing world.

Recently, Integrated Water Resource Management (IWRM) and River Basin Management (RBM) have been gaining popularity in research as paradigms for sustainable water management and conflict avoidance in international basins. These systems call for increased integration in the development and management of water resources. They suggest that management of water quantity, quality, diverse demands



and multiple uses across a basin should be integrated “to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.”<sup>24</sup> A movement towards basin-wide management, and the growing promotion of basin-wide RBOs has accompanied this trend. These basin-wide RBOs are “assumed to play an important role to bring cooperation about.”<sup>25</sup> Academics such as Duda and LaRoche (1997) argue that basin-wide approaches are more conducive to environmentally sustainable outcomes. This is a noteworthy break from the historic experience, where most river basins with more than two riparian states have had only bilateral agreements, and institutions managed only single water uses.

Even today, Dombrowsky (2007) points out that most RBOs are single-purpose institutions and have jurisdiction over only particular sections of a basin. Almost 85% of the treaties that exist today are bilateral, even in basins with more than three riparian states. Some historical experiences support the argument for basin-wide institutions. For example, failing to include all affected co-riparians has occasionally resulted in conflicts. Other research argues that it is wrong to promote basin-wide RBOs as ideal for all basins. Marty (2001) argues that water management and development problems should be managed “on a case by case basis without an overarching framework in place.”<sup>26</sup> Other proponents of this view argue that bilateral and sub-basin institutions might work better in certain cases. Bernauer (1997) expands on this idea by explaining that shared resource problems are “most difficult to solve - and [institutions] most difficult to establish - when many riparians and heterogeneous preferences are

involved.”<sup>27</sup> He goes on to specify that in most transboundary basins with numerous riparian states, only smaller subsets of actors are typically able to achieve cooperation. Furthermore, Pike’s Law suggests that “the likelihood of attaining an agreement on water utilization decreases by the cube of the number of riparian states involved.”<sup>28</sup> This means that cooperation is usually more difficult to achieve with greater numbers of actors involved. International Watercourse Law recommends the “establishment of joint mechanisms or commissions, as deemed necessary [...], to facilitate cooperation on relevant measures and procedures.”<sup>29</sup> However, notably, this document does not offer any suggestion that such organizations are more effective on a basin-wide level.

The overwhelming focus of much transboundary basin literature on basins with only two states complicates understandings. Supporters of RBOs often insist that although integrated institutions are more difficult to establish and implement, they may ultimately perform better. The lengths of delay, and accompanying costs, however, may be extensive. For example, the bilateral Indus Waters Treaty between India and Pakistan took 10 years to negotiate. Similarly, the Ganges Treaty between India and Bangladesh spanned 30 years, and in the Jordan River basin, negotiations lasted 40 years. These basins faced many of the challenges present in the Nile basin, including existing political tensions. This precedent is problematic because while negotiations drag on, “water quantity and quality degrades to where the health of dependent populations and ecosystems [may be] damaged or destroyed.”<sup>30</sup>

Research has widely examined the risks that further complicate and delay water negotiations. Dombrowsky observed that negotiations over water “are usually

characterized by uncertainty with regards to exact interests, needs and requirements of the states involved,<sup>31</sup> which complicates cooperation. Furthermore, because negotiations usually defend prior uses, agreements can have serious consequences for future negotiations. Additional risk accompanies negotiations around basin infrastructure development, because the time between plan consensus and project completion may extend decades. As there is no way to predict social, political, economic and environmental conditions several decades into the future, such decisions are extremely uncertain and risky.

## **2.5 Negotiations and Cooperation**

The field of negotiation theory and literature has acted as an effective starting point for examining how best to achieve or promote cooperation in negotiations. At a very basic level, negotiation literature suggests that how parties make their statements and approach negotiations deeply influences cooperation. In their well known text, *Getting to Yes*, Fisher, Ury and Patton (1991) explain that arguing over positions is inefficient, dangerous and ineffective. They, and countless researchers after them, suggest that parties should attempt to have principled negotiations focussed on interests instead of positions. Brett (2001) expanded on this concept and identified different types of claims employed in negotiations. The identification of rights-based, interest-based, and power-based claims has facilitated the analysis of negotiations and actor transformations.

In recent years, this negotiation theory has emerged as central to the analysis of negotiations concerning transboundary waters. Rothman (1995), Wolf (1999), Dombrowsky (2007), and Priscoli (2009), among others, have helped to demonstrate how this theory is relevant for water negotiations.

Recent research has suggested that cooperation is most likely in negotiations when parties achieve transformation. Transformation occurs when parties move from “thinking of themselves as representing countries to perceiving more broadly the needs of all stakeholders within a basin.”<sup>32</sup> Rothman (1995) suggests that the movement of parties from ‘adversarial framings’ of issues towards ‘reflexive reframings’ and eventually sometimes ‘integrative framings’ and ‘cooperative agenda setting’ marks this transformation.<sup>33</sup> Others express these shifts as “movements from ‘rights-based’ to ‘needs-based’ to ‘interest-based’ to ‘equity-based’ negotiations.”<sup>34</sup> This reflects the shift promoted by Fisher, Ury and Patton from approaching negotiations from particular positions to focusing on interests. The most important shift identified by water negotiation literature is the shift from the first, adversarial, rights-based stage to the second, reflexive, needs-based stage.

In the adversarial stage, “disputants see ‘the other’ as the main problem,”<sup>35</sup> political boundaries are very prevalent, and claims often focus on rights. Interactions between parties focused on positions that reflect what they feel they deserve characterize initial negotiations. These rights-based claims are commonly hydrographic or historical. Examples of historic or chronological claims would include declarations of historic rights or rights from ‘prior allocations’. Hydrographic claims may take the form

of an upstream state employing the Harmon Doctrine to claim that they are entitled to particular rights because “water rights originate where the water falls.”<sup>36</sup> Conversely, downstream states might use hydrography and employ the principle of absolute river integrity to claim rights to an “undisturbed system.”<sup>37</sup>

Despite the prevalence of such claims, in “almost all of the disputes which have been resolved, [...] paradigms used for negotiations [...] have [been] ‘needs based’.”<sup>38</sup> Needs-based ‘reflexive reframings’ refocus attention away from others and towards the underlying needs and concerns of the basin as a whole.<sup>39</sup> Need is usually determined by quantifiable factors such as population and irrigable land area.

In the integrative stage, focus shifts towards how to enhance benefits and realize interests into the future. Finally, efforts to ensure that benefits are distributed equitably and perceived to be just characterize the equity-based negotiations of the cooperative stage.

These claims can exist simultaneously, progression through these phases is not always linear, and any stage may produce cooperation. This means that negotiations might move through adversarial phases to needs-based phases only to return to adversarial rights-based claims. General patterns have emerged in water negotiations, however, and reveal success in the movement from “zero-sum intractable disputes to positive-sum, creative solutions.”<sup>40</sup> Another reason that movement towards needs-based claims may bring about cooperation more effectively than positional or rights-based negotiations is because it is representative of a greater shift in negotiations towards mutual empathy and understanding of the concerns of other parties in

negotiations. The importance of this shift is captured by Priscoli (2009) who explains that it “can be both profoundly difficult to accomplish and absolutely vital to achieve for any movement at all toward sustainable basin management.”<sup>41</sup>

Once needs-based, interest-based or equity-based claims are being employed, the relative success of efforts to achieve cooperation drives recommendations for the establishment of RBOs to facilitate this shift. The role of basin-wide RBOs is not entirely clear, however. In fact, basin-wide RBOs can complicate transformation in negotiations by locking negotiations in the adversarial stage. This may occur if even one party to negotiations continues employing rights-based claims. While this process of value transformation is often identified as an ideal means to achieve lasting cooperation, the transformation can take decades, “during which time political tensions are exacerbated, ecosystems go unprotected, and water is generally managed, at best, inefficiently.”<sup>42</sup> Evidently, more research into how this transformation takes place under different institutions in different shared water settings could help advance cooperation and improve the management of shared basins in the face of growing water scarcity.

## **3 METHODOLOGY**

### **3.1 Methods Overview**

In order to examine the question of how effectively basin-wide RBOs in water-scarce international basins with numerous riparian states promote cooperation by affecting riparian state negotiation claims, I carried out a content analysis of a case study. I carefully considered each decisions concerning how best to answer this question given the time, resource and capacity limitations of this project.

This section will offer a very brief overview of the methodological approach undertaken in this research. A more detailed explanation and justification of each of these methodological choices, as well as an explication of the limitations of such research decisions is included in the Appendix.

### **3.2 Case Study and Content Analysis**

This research examines the case of the basin-wide RBO of the Nile river basin in Africa: the Nile Basin Initiative. While the case study is a qualitative approach, research is also quantitative, as I have collected, interpreted and coded qualitative data to render it quantifiable for the content analysis. I examine the content of official statements representing the views or sentiments of government officials from the various riparian states of the Nile basin.

### 3.3 Data Sources

Originally, this research sought to locate speech transcripts, meeting minutes, negotiation transcripts, newsletters, official documents, and any other publications that could trace official claims to Nile waters over time. Due to many factors, including the location of the basin and research resource constraints, none of this was available. Careful searching, however, revealed that it was possible to track official statements through media broadcasts and reports. I therefore included all relevant samples from between 1979 and June 2009 from LexisNexis, World News Connection and the Foreign Broadcast Information Service.

These samples were then divided into official statements from 'upstream' and 'downstream' riparian states in an effort to cope with the uneven representation of different states resulting from the biases of reporters, computer selection for translation, and search engine inclusion.

According to these groupings, 'upstream' states include Burundi, the Democratic Republic of the Congo, Ethiopia, Eritrea, Kenya, Rwanda, Tanzania, and Uganda, and the 'downstream' states are Egypt and the Sudan. This is a natural grouping for many reasons. Egypt and the Sudan are the two countries that are situated furthest downstream in the Nile basin. Much literature has examined upstream-downstream relations and downstream states are typically more cooperative in water negotiations. This grouping is also significant in that Egypt and the Sudan are the only countries with historical agreements concerning the Nile river, they are the most dependent on exogenous water resources of all the Nile basin countries , and they represent a higher



class of Gross Domestic Product (and in the case of Egypt, development), than their co-riparians.

With few other ways to track official sentiments over time, this method was ideal. Another factor to take into consideration is that in some countries, officials have less legitimacy and concerns for the future of the state, its resources, or the well being of the country are negligible.

### **3.4 Data Collection**

Sampling in this case study occurred at the level of utterances. If a single article quoted three separate utterances (occurring on different occasions) of a state official, these were each recorded as separate samples. If an article reported one, long quote from a single speech or comment, I only counted it as a single sample, no matter how long and extensive.

Within these samples, multiple different types of claims could be identified. Because I track concepts in this research, instead of identifying words, or exact phrases, I tracked clusters of words of indeterminate length that communicated a particular meaning.

Due to the limited number of relevant samples available for this case, random sampling was not possible in this research. Instead, this research employed non-random sampling in the form of purposive, judgement or relevance sampling that “aims at selecting all textual units that contribute to answering given research questions.”<sup>43</sup>

From the available sources, samples were collected through searches for articles containing both of the terms 'Nile' and 'water' anywhere in the title, keywords, abstract or text. In total, I examined over 4,000 articles to determine their relevance. An article or excerpt was deemed relevant if it included any excerpts directly or indirectly quoting state officials. For example, a direct quote might read, "Mubarak explained, 'Egypt needs this water to...'" An indirect quote might read, "Mubarak said that his country needed the water to...". Despite careful searching, I may have missed the occasional relevant article, or a relevant article may not have been included in search engine results. There is a chance that a relevant article may not have contained both of the words 'water' and 'Nile' and thus would not have been included. In the interests of time, resources and the locating relevant samples, I acknowledged and accepted this risk as minimal.

Only official quotations, reports of statements or utterances were included. No editorial opinion statements by journalists or news articles without official quotations were included. Relevant passages were recorded word for word on a spreadsheet along with a record of the search engine that located them (to help in identifying repetitions and to keep track of sources), the date the article was written, any accompanying suggestion as to the date of the utterance (for example, "last week at a press conference..."), and the original source of the article.

### 3.5 Data Analysis

After collecting the data, I sorted the samples into manageable chunks, and coded according to the different stages of negotiation or types of claims they suggested. Occasionally, they fit into more than one category. While applying some sort of objective coding scheme to these quotation and statement samples would be preferable in some research, in order to best classify the types of claims, an in-depth analysis of each statement was preferable to automatic word coding.

The criteria of selection for coding different types of claims to the Nile waters was informed by literature on negotiation both within and outside of the field of water conflict. Claims could be labelled “power-based,” “rights-based,” “needs-based,” “interest-based,” or “equity-based.” Power-based claims staked claim to the Nile waters based on state power. The key message of these claims is that ‘the Nile waters are ours because we are stronger than you and can take them’. Power based claims often involve threats, sometimes dares or allusions to military action. Rights-based claims are typically based on geography (or hydrography) or history. Historical rights-based claims are marked by assertions that it is the right of a particular riparian to have, use or access the Nile waters because these rights were guaranteed to them in past agreements, or because they have used the waters for longer. Often, upstream states employ hydrographical rights-based claims. For example, upstream riparian states might use the Harmon Doctrine to claim waters because “water rights originate where the water falls.”<sup>44</sup> Similarly, hydrographic rights-based claims may argue that downstream states have the right to an “undisturbed system.”<sup>45</sup> Needs-based claims use more quantifiable

measures, such as statistics on population, annual rainfall and area of irrigable land to lay claim to Nile waters. A sense of urgency often accompanies these claims to highlight how imperative such needs are. Interest-based claims focus on wants, desires, and potential benefits. Finally, equity-based claims to Nile waters focus on perceptions of equitable distributions of benefits throughout the basin. These claims are typically justified on the basis that such allocations or access would be fair.

This qualitative analysis took into account the literal wording and presentation of the statements. Direct quotes were preferred and considered more reliable than indirect explanations of what an official said. I examined data broadly to determine whether it would be coded according to categories derived from existing literature or categories derived from the data itself. The various categories of claims are not only suggested in transboundary basin negotiation literature, but in much other negotiation literature, too. Because the samples were easy to classify as representing one or several of the established different types of claims, I employed a combination of existing categories from negotiation and water negotiation literature.

I then sorted quotes and statements chronologically and by country to identify and prevent sample duplications that might skew the data. Once sorted, I analysed the statements and their claim types to identify meaningful patterns or irregularities over time. I also analysed the data by country, and in groupings of upstream and downstream states. Finally, I juxtaposed patterns that emerged with existing theories and research to develop general conclusions about the data.

### **3.6 Verification**

This research seeks to examine the performance of widely promoted basin-wide RBOs in water-scarce international basins with three or more riparian states to explore whether, and how effectively, these institutions influence riparian state negotiation claims to move towards achieving cooperation. It is difficult, however, to isolate the influence of institutions from other variables that influence state behaviours. These research findings are exploratory and should be used as a start from which to guide further research.

## **4 CASE STUDY: THE NILE BASIN INITIATIVE**

### **4.1 The Nile River basin: General Background**

The Nile River spans 6671 km from its most distant branch to its terminus at the Mediterranean Sea. It has two branches: the slow, meandering White Nile that flows north from Lake Victoria, and the torrential Blue Nile that travels northwest from Lake Tana in Ethiopia and provides up to 80% of the water that reaches Egypt.<sup>46</sup> These branches converge in Khartoum, Sudan and continue northward through Egypt as a single river. The Nile River passes through nine countries: Burundi, the Democratic Republic of the Congo, Egypt, Ethiopia, Kenya, Rwanda, the Sudan, Tanzania and Uganda. While no rivers or tributaries actually flow through Eritrea, some of its territory makes up part of the basin.

The Nile basin's southern frontier extends past Lake Victoria to its southernmost sources in Burundi and Tanzania. The basin's western boundary follows the Kagera River north from Burundi through Rwanda. It then borders the easternmost territory of the Democratic Republic of the Congo before cutting through the Sudan and Egypt to reach the Mediterranean Sea. The eastern boundary of the Nile basin encloses the westernmost rivers of Kenya, the many rivers cutting through the highlands of Northwest Ethiopia, and a slice of the southern territory of Eritrea from which it cuts north through the Sudan and Egypt parallel to the Red Sea. The total area of the basin is 3,031,700km,<sup>47</sup> and it covers 10% of Africa's land mass.<sup>48</sup>

## 4.2 Key Issues in the Nile basin

The countries of the Nile basin face many concerns linked to water scarcity in the region including economic, health, social and political concerns. Foremost among these is the ever-increasing number of basin and regional inhabitants which promises to continue to intensify the basin's water scarcity. The ten co-riparians of the basin represent approximately 300 million people. Of these, approximately 160 million live within the boundaries of the basin, itself.<sup>49</sup> Intensifying water scarcity in the region results from population growth, industrialization, urbanization, technological advancement and improved standards of living throughout the basin. This intensifying scarcity threatens human health, sanitation, agriculture, food security, industry and overall development with negative impacts on regional poverty rates.

The UNFPA indicates that the Nile basin countries are far from satisfactory in the measure of "Access to Improved Drinking Water Sources." This indicates that the "percentage of the population with access to an improved source of drinking water providing an adequate amount of safe water located within a convenient distance from the user's dwelling"<sup>50</sup> is poor. While 98% of Egyptians have access, much lower percentages of Egypt's co-riparians have access. Their access ranges from 79%, 74% and 70% in Burundi, Rwanda and the Sudan, respectively, all the way down to 46% in the Democratic Republic of the Congo and a mere 22% in Ethiopia.<sup>51</sup>

This scarcity contributes to political tensions in the basin that are deep rooted and persistent. This is significant because 97% of Egypt's surface waters come from water sources that originate outside of its borders, making it "the most reliant on

exogenous water resources of any country in the world.”<sup>52</sup> This interdependence demands good inter-riparian relations.

Upstream states including Ethiopia, Tanzania and other riparian states (with the exception of the downstream states, Egypt and the Sudan), have historically had extremely limited access to the Nile River waters. They now want to develop and implement new uses that will likely adversely impact their downstream neighbours. Countless proposals to develop the Nile waters, or transfer waters out of the basin have emerged in recent years. While many feel that within-basin needs should take precedence over out-of-basin uses, economies such as Egypt depend economically and politically on such transfers.

### **4.3 History of Water Relations in the Nile River basin**

There have been several historical agreements dating all the way back to 1891 that have shaped the history of water sharing within the Nile basin. Most of these treaties were concerned with specific tributaries or lakes within the basin, and many of them were negotiated with colonial rulers before the riparian states gained their independence.

A 1920 conflict between Egypt and the Sudan over the construction of the cotton industry-focused Sennar Dam led to the first major treaty on the Nile river, the 1929 Nile Waters Treaty. This treaty was officially negotiated between Egypt and Great Britain (the colonial caretaker of Sudan) and guaranteed Egypt a twelve-to-one allotment of water to its upstream neighbour. Furthermore, the Sudan was required, under the



treaty, to gain approval from Egypt before developing any projects along the Nile. Upon gaining independence in 1956, Sudan rejected this agreement.

Next, Egypt's unveiling, in 1952, of plans for the Aswan High Dam in the Sudan drew protests from some of the Sudanese. This conflict eventually led to the 1959 Nile Waters Agreement between Egypt and the Sudan which guaranteed Egypt the dam, lake Nasser, and a revised three-to-one ratio of water justified based on 'established rights'. Neither of these treaties involved consultation or consideration of any of the other riparian states of the Nile basin. As a result, many of these states considered the treaties unfair and, upon achieving independence, many of the Nile Basin states who were not included in the negotiations declared these treaties non-binding upon them.

Nevertheless, the legacy of these treaties persists and promises to continue to cause problems and complicate negotiations and cooperation in the region. When Ethiopia diverted some of its waters in the late 1970s, Egyptian president Mohammed Anwar El-Sadat responded with threats that Egypt might use its superior military force against Ethiopia. Later, in the 1980s, when Ethiopia protested some of Egypt's water development plans, Sadat again threatened Egypt's upstream neighbour with war. Again, in the 1990s, Mohamed Hosni Mubarak threatened to bomb Ethiopia if its plans to build a dam persisted.

To date, there have not been any wars over water in the Nile basin. However, there have not been any basin-wide agreements, either. At present, there is no permanent basin-wide institution for the joint management of the basin. There is, however, a transitional institution in place.

#### 4.4 The Nile Basin Initiative

The Nile Basin Initiative is a basin-wide transitional RBO founded in 1999 with aim to establish the Nile River Basin Cooperative Framework Agreement. The finalization of this agreement will create a permanent RBO in the Nile basin. All of the Nile basin riparian states are partners in the NBI with the exception of Eritrea, which has only observer status.

The NBI seeks “to develop the river in a cooperative manner, share substantial socio-economic benefits, and promote regional peace and security.”<sup>53</sup> It also aims “to achieve sustainable socioeconomic development through the equitable utilization of, and benefit from, the common Nile Basin water resources.”<sup>54</sup>

The NBI website lists the RBO’s objectives as: “To develop the Nile Basin water resources in a sustainable and equitable way to ensure prosperity, security, and peace for all its peoples; To ensure efficient water management and the optimal use of the resources; To ensure cooperation and joint action between the riparian countries, seeking win-win gains; To target poverty eradication and promote economic integration; [and] To ensure that the program results in a move from planning to action.”<sup>55</sup>

Unfortunately, in the ten years since its inception, action towards finalizing the Cooperative Framework Agreement has been slow. Since late 2006, the NBI website and various officials of the basin countries have been consistently reporting the approaching signing of the agreement. Impatience and frustration with the slow and delayed process of negotiation within the NBI has resulted in unilateral actions to initiate projects

without basin-wide approval by some riparian states, despite the recognized implications of such actions for other riparian states.

The Nile Basin Initiative is funded by the riparian states of the Nile basin, themselves, and by donors through the Nile Basin Trust Fund (NBTF). The World Bank administers the NBTF, and donor countries including Canada, Denmark, the Netherlands, Norway, Sweden and the United Kingdom help fund it.<sup>56</sup>

#### **4.5 Case Selection Rationale**

This is an ideal case study for the purposes of this research. The NBI has been seen as an important development toward cooperation in the Nile basin since its inception in 1999. Recently, however, the already-delayed ten-year deadline for the Nile Cooperative Framework Agreement lapsed and the draft agreement failed, yet again, to achieve the signatures of both Egypt and Sudan.

The level of water scarcity and need present in the case of the Nile may represent the situations of many transboundary basin regions in the future if daunting predictions by UN System and other reputable organizations about the uncertain future of the world's water are at all accurate. Multilateral riparian negotiations in situations with such uncertainty are considerably more difficult. Accordingly, research examining the possibilities and weaknesses of inter-riparian institutions - and more specifically RBOs like the NBI - in such challenging circumstances is indispensable.

Although few basins in the world have as many riparian states as the Nile, there are a growing number of basins with several riparian states. At present, nineteen basins

around the world house five or more riparian states and many more are multilateral with three or four riparian states. It is understood that negotiations become considerably more challenging with each additional party involved, making the Nile basin a good test case.

The Nile River is also challenged by many of the complications that other international basins face. These include historical political tensions, extensive agricultural dependence and the presence of a hegemonic riparian state. In the 2002 World Water Development Report published by UNESCO, eight of the ten Nile riparian states ranked in the bottom 35% of all countries for water availability per person per year, and four of the ten ranked in the bottom sixth of all countries. Four of the Nile riparian states are in the bottom ten rankings of UNESCO's list of the poorest countries of the world. A large percentage of the world's shared basins are located in developing countries, and achieving cooperation in these particularly challenging circumstances can be a pivotal step towards poverty reduction and development. In Africa, for instance, 88% of water withdrawals go toward agriculture because average regional levels of development and irrigation consume the majority of most state water allocations.<sup>57</sup>

Finally, the Nile Basin Initiative is an excellent case study because it has received support, guidance and funding from international institutions and select country donors. Whether or not it achieves cooperation under these circumstances will likely inform the RBO experiences and decisions of riparian states of multilateral basins well into the future.

## **5 CONCLUSIONS AND IMPLICATIONS**

### **5.1 Research Conclusions**

The content analysis performed on official statements by government representatives from Nile basin states revealed that there has not been any distinct shift in reported claims to the Nile waters from rights-based, adversarial framings to needs-based, interest-based, or equity-based claims. While available data from all Nile basin countries revealed a variety of different types of claims since the foundation of the Nile Basin Initiative, the data did not demonstrate any recognizable progression from rights-based to other framings. As discussed in the theoretical background presented earlier in this paper, negotiation research has suggested that cooperation is most likely when parties achieve transformation in negotiations. The absence of a distinct shift towards claims that show empathy and concern for the well-being and equal development of other basin riparian states shows that the NBI has not been successful in promoting transformation in negotiation claims across the basin. The data supported this further by revealing a persistence of rights-based claims to the Nile waters through even some of the most recent statements of Nile riparian states. The persistence of such rights-based, adversarial claims demonstrates that some Nile basin riparian states continue to focus inward on what they feel their countries rightly deserve instead of on the underlying needs and concerns, or long term benefits that might be possible for the basin as a whole.

When analysed as two distinct groups of cooperative upstream (all but Egypt and the Sudan) and uncooperative downstream (Egypt and the Sudan) riparian states, the data collected revealed that while rights-based claims to the Nile waters were initially advanced by both groups, since the foundation of the NBI, rights-based claims have overwhelmingly come from the uncooperative downstream group. In contrast, since the formation of the NBI, the upstream riparian states have, generally stated their claims to the Nile waters in terms of needs, interests and concerns for equity. This demonstrates that the NBI basin-wide RBO has not been successful in achieving its most challenging task: to influence and promote transformation and cooperation in those groups most threatened by cooperation in the situation of growing scarcity in the Nile basin.

## **5.2 Implications for theory, current practices**

Recent statements by all Nile Basin riparian states demonstrate that water sharing issues and concerns in the basin have not yet been resolved, and attempts by the NBI to focus the discourse on needs and interests have not been very successful. Findings do not inspire a lot of hope for the future of cooperation among Nile riparian states. A new approach is necessary, especially as conditions and relations deteriorate as this approach fruitlessly drags on.

By examining the unimpressive performance of the NBI in achieving transformation in riparian state negotiation claims, this research has confirmed the popularly acknowledged difficulties of achieving cooperation and avoiding or dissolving conflict in basins shared by more than two riparian states. More broadly, these findings

suggest that basin-wide RBOs in water-scarce international basins with numerous riparian states may not be the most effective approach through which to promote cooperation.

These difficulties suggest that approaching efforts toward cooperation bilaterally, or at least in smaller groupings, “may be the only way to make sustained progress.”<sup>58</sup> This is especially important in challenging basins with intensifying scarcity, complex and sometimes hostile historical relations, agricultural dependence and low levels of development. Promoting the basin-wide RBO approach as the standard best practice for bilateral negotiations could be preventing other more effective forms of cooperation from emerging. After all, the only agreements that have ever been successfully negotiated in the Nile basin have involved only a few riparian states. Quickly achieving several bilateral or smaller multilateral agreements might allow the Nile basin states to sidestep extensive ecological and human suffering. Another approach might address the Blue and White Nile tributaries separately.

By rejecting the idea that basin-wide RBOs are the best option in all basin situations, this research suggests that more flexibility is needed in multi-riparian state basins. The Nile Basin Initiative is a well-funded RBO and still has not been successful. It might be in the best interests of international agencies and donors to approach funding with more flexibility and encourage basin-appropriate approaches over generalized best practices. This change in perspective may help maximize the efficiency of funding from international institutions and countries. It may also help to minimize the number of disputes in international basins that turn into bigger conflicts.

To avoid future conflict as water scarcity intensifies, riparian states in water-scarce regions should continue to explore the development of alternative water sources such as fossilized groundwater, renewable ground water, desalination, brackish water, and seawater sources. Seeking to improve the efficiency of water use can also help. For instance, removing water subsidies may encourage people in riparian countries to alter and improve inefficient irrigation practices.

Perhaps RBOs are ultimately not the answer to achieving cooperation in situations of intense scarcity and laws concerning the use of international water sources need to be developed further. In other situations, uncooperative riparian states may not cooperate without the enforcement power of a higher authority. Clearly, there is a need for more research examining this daunting issue.

### **5.3 Recommend areas and possibilities for further research**

Although this initial exploratory research tested standard approaches, there is a need for more research examining the unique situations of international basins with three or more riparian states. This data may offer insight into other multi-riparian basins in developing countries, those with downstream hegemony, those with historical agreements, those with a certain level of scarcity, those within a certain climate, or those with particular levels of GDP. Research into all of these possibilities would be useful to continue to improve understandings of what is most likely to promote cooperation in different basins faced by scarcity.



## 5.4 Conclusions

Many consider water-related issues to be “the greatest imminent crisis faced by humans on a global scale.”<sup>59</sup> Around the world, water is an essential, non-substitutable resource that traverses boundaries and varies widely over time and space. However, International legal principles fail to offer effective guidance as to how international basins should be managed. Although many reputable bodies promote basin-wide, multi-issue integrated RBOs as essential to promoting sustainable basin management and cooperation, in basins with many riparian states, cooperation and agreement may remain elusive for decades. Meanwhile, as mismanagement persists, political affairs, economic relations, and ecology suffer.

The supply of freshwater will dearly impact the likelihood that some Millenium Development Goals will be achieved by their targets in 2015. In particular, the third target - the goal to ensure environmental sustainability and to “halve [...] the proportion of the population without sustainable access to safe drinking water and basic sanitation”<sup>60</sup> - may be compromised. Water scarcity is especially problematic in agriculture-dependent areas with limited economic diversification and high rates of population growth. On the African continent, 61% of the total land area, 77% of the population, and 93% of the total water available is located in shared river basins.<sup>61</sup> Deepening scarcity could have dire consequences for poverty, peace and development in Africa and other places challenged with sharing increasingly scarce waters around the world.

Cooperation over shared waters may also bring other benefits. Just as political tensions can negatively impact the success of efforts towards cooperation in international basins, spill over from cooperation over international waters can positively influence other political relations.<sup>62</sup> Improved international water management can result in improved food production and the improvement of other human rights. Because many of the water resources in the developing world are international, effectively achieving cooperation may have far-reaching impacts on the scale of global poverty.

Conversely, expanding water scarcity may have extensive negative impacts in developing countries with consequences that influence development far into the future. This research has revealed that widely promoted basin-wide RBOs may not be the best means through which to achieve transformation in water negotiations in international basins with numerous riparian states. Improving the possibilities that international basins may achieve cooperation may not only sidestep potential negative consequences of a lack of cooperation, but may also positively influence the potential and quality of poverty reduction, development and possibly even peace.

## APPENDIX

### Case Study and Content Analysis

Such in-depth studies are particularly helpful in analyses of transboundary basins because the necessary limitations of time, resources and capacity in much research make detailed analysis of more than one of these very complex cases unlikely. Furthermore, while quantitative studies can be helpful, the number of transboundary river basins with three or more riparian states is limited, and each case is unique. Nevertheless, this case study should “generally provide understanding about similar individuals, groups and events,”<sup>63</sup> and should help inform the experiences and actions of other multilateral riparian basins - or at least offer insight into the potential limitations of existing practices. The findings of this case study may also offer insight into similar basins (for instance, those with five or more agriculture-dependent, developing riparian states). The numerous similar characteristics many basins share are often “sufficient to make comparison of their outcomes possible.”<sup>64</sup> Even if this case study is not “generalizable, representative, typical, replicable, [and] repeatable”<sup>65</sup> in other basins, it is valuable in that it tests existing theories and may suggest areas for further research in a situation (widespread water scarcity in an international basin) where standard rules do not exist.

The content analysis of this case study was ideal because it was unobtrusive (officials in these countries were not reacting to the researcher), it was of a realistic scope considering the resource limitations of this project, and it allowed for the study of long periods of time. There were, however some limitations associated with this method. Data relevant to the specific research question was not easy to locate. Furthermore, despite efforts to be transparent and consistent, because I decided what was relevant and should or should not be included, - like all content analyses – my findings are subjective.

The study of official statements is ideal because while there are many different populations vying for water rights and access within states, the proliferation of the nation state as the predominant form of political organization in the twentieth century has resulted in the “responsibility for water resource management [being] transferred from the local or regional level to the national level.”<sup>66</sup> Official statements are also a valuable measure because “buy-in at the highest possible levels is one of the prerequisites for success in developing institutions across boundaries.”<sup>67</sup> Practical factors also influenced this decision. Official statements are more accessible, easier to trace, and particularly pertinent in the case of the Nile basin because negotiations within the NBI play out exclusively among state actors. The NBI’s highest authoritative body, the Council of Ministers of Water Affairs of the Nile Basin Countries, or Nile-COM,

is comprised of the ministers of water affairs<sup>b</sup> from each of the Nile basin riparian countries, and “provides policy guidance and makes decisions.”<sup>68</sup>

## **Data Sources**

The range of the sample involved in this research was determined based on initial impressions of the number of samples available. Because in depth, detailed speeches or transcripts were not available, this research performed a systematic analysis of as many samples as possible. Accordingly, I sought out reliable databases with good newspaper coverage. These included LexisNexis, a database of over 6,000 news, business and legal sources dating back to the 1970s. While this is an excellent database, it contains heavily American and Canadian content in English only. Not only are many of the relevant sources for this research located in Africa, but many of these sources are printed in other languages. To counter this limitation, I also sought reliable news translation databases. The most reliable and reputable databases accessible for this research were the World News Connection and the Foreign Broadcast Information Service. The World News Connection provides translations of newspaper articles, television and radio broadcasts, reports and conference proceedings from select sources in Egypt (6), Kenya (3), and Uganda (2). The Foreign Broadcast Information Service is an agency of the US Central Intelligence Agency that translates select news stories, broadcasts and government statements from around the world into English each day.

<sup>b</sup> Jurisdiction over water affairs differs between the countries of the Nile basin. Ministers of water affairs represent a variety of ministries ranging from Ministries of Water Resources and Irrigation to the Democratic Republic of the Congo’s Ministry of Environment, Nature Conservation & Tourism and Burundi’s Ministry of Water, Energy and Mines.

The Foreign Broadcast Information Service database contains searchable daily reports from 1974 through 1996 and includes coverage of Nile Basin regions. Only LexisNexis, the Foreign Broadcast Information Service and World News Connection were available. While these are reputable news search engines, more Africa-focused sources (for instance, if AllAfrica.com had a better archive) would likely result in better samples.

This research sought samples published between 1979 and June 2009. The cut-off year of 1979 was selected to include a decent representation of relevant samples reflecting official stances before the formation of the NBI in 1999. The number of articles, and therefore the number of statements from the Nile basin region available, is lower in the 1990s than in the 2000s and dramatically lower in the 1980s. This data is also skewed because more articles are available from recent years due to search engine development.

Despite their reputability and range, the sources available were very limited in their representation of the different states of the Nile basin. Egyptian news sources were represented quite disproportionately, as were statements of Egyptian 'officials' in other regional news sources. While having equitable representation of each of the Nile riparian states would be more reliable, because Egypt and Sudan have consistently been the less cooperative parties in the NBI negotiations, examining the official statements of these states as a single group and juxtaposing these with the limited data from the other 'upstream' states still offers valuable insight into prospects for the NBI negotiations.

Although data sources were located, the limited range of sources produced additional limitations for the validity and reliability of this research. Internet access over the past decades in these overwhelmingly developing countries, as well as political interest from those selecting which articles and broadcasts to transcribe influenced which sources were made available. The quantity and characteristics of available data have been influenced by the biases of the reporters who choose which statements to include in their articles, the computer selection process that identifies articles to be translated, the translators who choose exactly how to translate each statement, and the search engines that choose which sources to include and what countries to represent. Intended audiences and official agendas might have influenced the contents of official statements as recorded by reporters. Further, the purpose of the inclusion of a statement by a reporter may have been to rally support for or against a particular actor, policy or event, and for all of these reasons, statements collected may not reflect actual sentiments or beliefs of the riparian state officials. This does not entirely compromise the insight that can be offered by this research.

## **Data Analysis**

An in-depth analysis of each statement, as opposed to automatic word coding was preferred. This may present more room for subjectivity, but each statement was also juxtaposed against a criteria of selection developed with the help of existing literature to maintain utmost objectivity.

My analysis is necessarily subjective. My background knowledge surely influenced which categories I considered and how I categorized different quotations. This is not a problematic issue, because texts can only have meanings when understood or interpreted by a reader.

Because I cannot present all of the data collected within this paper, and because each of my understandings of a document or a statement is an interpretation the reliability of this research is weaker than if I could present all of the data and categorizations for debate. It is likely that, despite my careful efforts, others would dispute some of the categorizations I have made. Accordingly, I have provided my criteria of selection as well as examples in order to communicate my method of categorization as effectively as possible within the limited space of this paper.



## NOTES

- <sup>1</sup> Jerome Delli Priscoli and Aaron T. Wolf, *Managing and Transforming Water Conflicts* (New York, NY: Cambridge University Press, 2009), 1.
- <sup>2</sup> Ariel Dinar et al, *Bridges Over Water: Understanding Transboundary Water Conflict, Negotiation and Cooperation* (Hackensack, NJ: World Scientific Publishing Co. Pte. Ltd., 2007), 7.
- <sup>3</sup> Priscoli and Wolf, xxi.
- <sup>4</sup> Samuel J. Barkin and George E. Shambaugh, *Anarchy and the Environment: The International Relations of Common Pool Resources* (SUNY Press, 1999), 4.
- <sup>5</sup> Jesse H. Hamner and Aaron T. Wolf, "Patterns in International Water Resource Treaties: The Transboundary Freshwater Dispute Database," *Colorado Journal of International Environmental Law and Policy 1997 Yearbook* (1998); available from <http://www.transboundarywaters.orst.edu/publications/patterns>; Internet; accessed June 2009.
- <sup>6</sup> Aaron T. Wolf, et al. "International River Basins of the World," *Water Resources Development* 15, no.4 (1999): 424.
- <sup>7</sup> Meredith A. Giordano and Aaron T. Wolf, "Sharing Waters: Post-Rio International Water Management," *Natural Resources Forum* 27 (2003): 164.
- <sup>8</sup> Priscoli and Wolf, xxiii.
- <sup>9</sup> *Ibid.*, xxiii.
- <sup>10</sup> Wolf, et al. (1999), 389.
- <sup>11</sup> Priscoli and Wolf, xxiii.
- <sup>12</sup> *Ibid.*, 1.
- <sup>13</sup> Shlomi Dinar, *International Water Treaties: Negotiation and Cooperation Along Transboundary Rivers* (New York, NY: Routledge, 2008), 108.
- <sup>14</sup> *Ibid.*, 8.
- <sup>15</sup> *Ibid.*, 104.
- <sup>16</sup> *Ibid.*, 13.
- <sup>17</sup> *Ibid.*, 13.
- <sup>18</sup> *Ibid.*, 12.
- <sup>19</sup> Thomas Bernauer, "Managing International Rivers" in *Global Governance*, ed. Oran R. Young (Cambridge, MA: MIT Press, 1997), 157.
- <sup>20</sup> Giordano and Wolf, 166.
- <sup>21</sup> Priscoli and Wolf, 90.
- <sup>22</sup> *Ibid.*, 87.
- <sup>23</sup> *Ibid.*, 87.
- <sup>24</sup> Ines Dombrowsky, *Conflict, Cooperation and Institutions in International Water Management: An Economic Analysis* (Northampton, MA: Edward Elgar Publishing Inc., 2007), 9.
- <sup>25</sup> *Ibid.*, 1.
- <sup>26</sup> Frank Marty, *Managing International Rivers: Problems, Politics and Institutions* (New York, NY: Peter Lang, 2001), 27.
- <sup>27</sup> Bernauer, 171.
- <sup>28</sup> David Phillips, et al., *Transboundary Water Cooperation as a Tool for Conflict Prevention and Broader Benefit Sharing*. (Swedish Ministry for Foreign Affairs Expert Group on Development Issues (EGDI), 2006), 157.

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- <sup>29</sup> United Nations, "UN Convention on the Law of the Non-Navigational Uses of International Watercourses, 1997"; available from [http://untreaty.un.org/ilc/texts/instruments/english/conventions/8\\_3\\_1997.pdf](http://untreaty.un.org/ilc/texts/instruments/english/conventions/8_3_1997.pdf); Internet; accessed June 2009, Article 8.2.
- <sup>30</sup> Priscoli and Wolf, 15.
- <sup>31</sup> Dombrowsky, 221.
- <sup>32</sup> Priscoli and Wolf, 69.
- <sup>33</sup> J. Rothman, "Pre-Negotiation in Water Disputes: Where Culture is Core," *Cultural Survival Quarterly* 19, no. 3 (Fall 1995): 21.
- <sup>34</sup> Priscoli and Wolf, 69.
- <sup>35</sup> Rothman, 20.
- <sup>36</sup> Aaron T. Wolf, "From Rights to Needs" in *Management of Shared Groundwater Resources*, ed. Eran Feitelson and Marwan Haddad (Ottawa, ON: Development Research Centre, 2000), 137.
- <sup>37</sup> Wolf (2000), 137.
- <sup>38</sup> Aaron T. Wolf, "Criteria for equitable allocations: The heart of international water conflict," *Natural Resources Forum* 23, no.1 (February 1999): 3-30. Available from <http://www.transboundarywaters.orst.edu/publications/allocations>; Internet; accessed June 2009.
- <sup>39</sup> Rothman, 20.
- <sup>40</sup> Priscoli and Wolf, 97.
- <sup>41</sup> Ibid., 101.
- <sup>42</sup> Ibid., 69.
- <sup>43</sup> Klaus Krippendorff, *Content Analysis: An Introduction to its Methodology*, 2nd Edition (Thousand Oaks, CA: Sage Publications Inc., 2004), 119.
- <sup>44</sup> Wolf (2000), 137.
- <sup>45</sup> Ibid., 137.
- <sup>46</sup> Dinar et al., 72.
- <sup>47</sup> Transboundary Freshwater Dispute Database, "Africa: International River Basin Register"; available from [http://www.transboundarywaters.orst.edu/publications/register/tables/IRB\\_africa.html](http://www.transboundarywaters.orst.edu/publications/register/tables/IRB_africa.html); Internet; accessed June 2009.
- <sup>48</sup> Phillips et al., 64.
- <sup>49</sup> Ibid., 64.
- <sup>50</sup> UN Population Fund, "State of the World Population 2008"; available from <http://www.unfpa.org/about/report/2008/en/index.html>; Internet; accessed June 2009, 99.
- <sup>51</sup> Ibid., 90.
- <sup>52</sup> Phillips et al., 65.
- <sup>53</sup> Nile Basin Initiative, "Background"; available from <http://www.nilebasin.org>; Internet; accessed May-June 2009.
- <sup>54</sup> Phillips et al., 153.
- <sup>55</sup> NBI, "Background"; <http://www.nilebasin.org>
- <sup>56</sup> University of Bergen Nile Basin Research Programme, "Nile Basin Research Programme"; available from <http://www.nile.uib.no>; Internet; accessed June 2009.
- <sup>57</sup> Dinar, et al., 5.
- <sup>58</sup> Phillips et al., 157.
- <sup>59</sup> Ibid., 5.
- <sup>60</sup> United Nations, "Millenium Development Goals"; available from <http://www.un.org/millenniumgoals/environ.shtml>; accessed June 2009.
- <sup>61</sup> Phillips et al., 8.
- <sup>62</sup> Ibid., xx.
- <sup>63</sup> Bruce L. Berg, *Qualitative Research Methods for the Social Sciences* 5th Edition (Boston, MA: Pearson Education Inc., 2004), 259.
- <sup>64</sup> Dinar, 1.

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<sup>65</sup> Jerry Wellington and Marcin Szczerbinski. *Research Methods for the Social Sciences* (New York, NY: Continuum International Publishing Group, 2007), 94.

<sup>66</sup> Peter Beaumont, "Water Institutions in the Middle East," in *Water Institutions: Policies, Performance and Prospects*, eds. Asit K. Biswas, Cecilia Tortajada and Chennat Gopalakrishnan, 131-153 (New York, NY: Springer, 2005), 135.

<sup>67</sup> Priscoli and Wolf, 87.

<sup>68</sup> Nile Basin Initiative, "Organizational Structure"; available from <http://www.nilebasin.org>; Internet; accessed May-June 2009.

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