

**FACTORS INFLUENCING A BASIN-WIDE AGREEMENT  
GOVERNING THE NILE RIVER**

by

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## **ABSTRACT**

This study analyzes the challenges facing the Nile River Basin riparian countries in terms of how best to achieve collaborative solutions within a transboundary river basin. Lessons learned from other transboundary river basins are incorporated into an analysis of factors promoting and impeding cooperation. Collective action theory is applied to determine the prospects for a basin-wide agreement in the Nile. While the results of this imply that the prospects for such an agreement are low, further analysis demonstrates that this theory does not adequately capture the complexity of issues and diversity of stakeholders within the Nile River Basin. The results of this study will help to inform River Basin Organizations (RBOs) and policy makers of external drivers impacting cooperating, as well as opportunities to emphasize benefit sharing and a sense of community and common identify amongst basin stakeholders as mechanisms for cooperative river basin management.

**Keywords:** Nile; river basins; collective action; transboundary

**Subject Terms:** Nile River Watershed; international cooperation; commons; water resources development

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# CHAPTER 1:INTRODUCTION

## Background

Over 160 million people in ten countries share the landscape and resources of the Nile River Basin. The basin is home to some of the African continent's richest natural endowments ranging from Lake Victoria, the world's second largest lake, to the vast wetlands of the Sudd, and the 'Mountains of the Moon' in Rwanda (Nile Basin Initiative [NBI], 2007). Despite the extraordinary natural assets and cultural history of the region, it is under considerable pressure and stress from population pressure, poverty, and environmental threats.

The historical and political landscape of the Nile Basin has dictated the current use and rights of the river. Colonial agreements, Cold War politics, regional conflicts and donor intervention have all played a role in shaping relations between the riparian states. The Nile regime is considered a classic example of the 'no harm principle', whereby Egypt as the downstream state has enacted the principle of no harm to veto all upstream development (Louka, 2006). To date, the only binding agreement governing the use of the Nile is that signed in 1959 between Egypt and Great Britain, on behalf of Sudan. The agreement gave no recognition or rights to any of the other ten countries that share the Nile River Basin, most notably Ethiopia which contributes 60% to the overall flow of the River and provides for 86% of the water that flows into Egypt (Lowi, 1993; Louka, 2006). This agreement turned the use of the Nile into a zero-

sum game, setting into place an allocation formula based on absolute amounts of water, meaning that any subsequent claims to the river would mean an automatic loss downstream. To date, altering this allocation formula has proven unacceptable to Egypt and Sudan.

The present-day dependency and need for the Nile River varies greatly between the riparians sharing the Nile River Basin. Rwanda, Burundi and the Democratic Republic of the Congo (DRC) have little interest in utilizing the river. Kenya, Tanzania and Uganda are more concerned with the development of the Equatorial lakes than the Nile. As the upstream country, Ethiopia occupies the most geographically superior position of all the riparians and continues to use the Nile as a “geopolitical bargaining chip” (Waterbury, 1987). For Sudan and Egypt the situation is much different. Sudan is heavily dependent on the Nile, while Egypt’s dependency on the Nile as its lifeblood is absolute.

The Nile River Basin, like other transboundary river basins, presents a collective action problem: the pursuit of the individual agendas of the nations sharing the basin will not lead to the most optimum outcomes for everyone (Waterbury, 2002). The tendency to maximize benefits for individual states provides a powerful incentive to exploit resources unilaterally (Lowi, 1993). The challenge facing the Nile River Basin is how best to achieve collaborative solutions to a common property resource<sup>1</sup> and avoid the tragedy of the commons.

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<sup>1</sup> Common property resources have the same characteristics as public goods – jointness of supply and non-excludability- except the use of the resource by one unit does detract from the benefits enjoyed by others (Lowi, 1993).

## **Methodology**

This paper is divided into six chapters, as described in the following paragraphs.

The first chapter is comprised of the introduction, which introduces the basic objectives and methodology undertaken in this paper. The second chapter draws upon lessons learned from international river basins in terms of identifying factors influencing cooperation within a transboundary basin. The third chapter discusses the collective action problem and presents theoretical approaches to addressing these problems within the Nile River Basin. The fourth chapter investigates the political and historical events that have led the riparians to hold their current positions vis-à-vis basin-wide cooperation. The fifth chapter analyses the preferences and positions of the major players in the basin in regards to a potential basin-wide agreement. The sixth and final chapter evaluates the prospects for reaching a basin-wide agreement governing the Nile River Basin by drawing upon theoretical considerations, as well as factors identified in the literature review of international river basins.

## **CHAPTER 2:INTERNATIONAL RIVER BASINS**

### **Transboundary Water Management**

Water-related issues are increasingly becoming a matter of life and death for many in the world, with over 3.5 billion people projected to be living in conditions of water stress by 2025 (World Resources Institute, 2003). Today, over 1.1 billion people do not have access to safe drinking water and in developing countries over 90% of wastewater goes untreated into local streams (Organisation for Economic Co-operation and Development, 2003). Water scarcity, increasing water demand and conflicting water uses are pressing global issues. Adding to these challenges is the shared nature of water. Water is a resource that is not confined by human-defined or geopolitical borders making the management of a transboundary resource particularly challenging. The risk of water-related conflict is viewed as high when river basins are shared by multiple countries, especially in dry and drought prone areas.

A large proportion of the world's freshwater resources are shared between one or more nation. There are over 263 transboundary river basins in the world, a third of which are shared by more than two countries (Giordano & Wolf, 2003). The catchment area of the international basins globally represents 47% of the earth's land and 40% of the world's population (Wolf, Natharius, Danielson, Ward, and Pender, 1999). Over 145 countries share these basins; the territories

of many countries lie exclusively within hydrological boundaries. On the African continent alone there are 63 international river basins.

The hydrology and geography of a river basin supports viewing a river basin as a holistic unit. The water within a basin is a shared resource, flowing downward towards an outlet as a common property resource and separated from adjacent basins by a geographic barrier (Lowi, 1995). The nature of a common property resource means that one user can negatively impact the quality or quantity of the resource for other users. Any interference with the water along its journey to the outlet has repercussions throughout the basin. Water flowing over ground and along rivers accumulates nutrients, sediment and pollutants and impacts ecological processes along the way. Because drainage basins are unified entities in a hydrological sense, individual basins have been promoted as the most appropriate means to manage water resources under some form of supranational authority. This supports the approach of Integrated Water Resource Management (IWRM), which has been proposed under international water law. IWRM views a river basin as a single hydrological unit and considers all potential uses and users within a river basin. IWRM promotes a river basin organization at the core with the mandate of building consensus and harmonizing local, regional and national water policies.

Transboundary river organizations provide a framework for managing water resources across national boundaries. The presence of an effective river basin organization can result in the institutionalization of water management across the riparian states (Louka, 2006). All transboundary agreements provide

for some form of an institution, such as a river basin commission, to collect data, conduct technical studies, build consensus and provide a dispute resolution mechanism. The designation of a river basin organization as a commission implies regulatory and enforcement powers. The World Bank provides three typologies of river basin organizations: commissions that deal with regulatory issues; organizations that are limited to technical studies and information gathering; and entities that focus on consensus building (Radosevich & Olson, 1999). Common among river basin organizations is the participation of member states in a permanent secretariat. Many river basin organizations are also mandated with ensuring stakeholder participation in the decision making process of the organization.

The dynamics of riparian relations is often characterized by upstream-downstream relations and the presence of a hegemonic power, usually the upstream state. Upstream states hold the position of power as they retain the ability to restrict the quantity and negatively impact the quality of water flowing to downstream states.

Despite the risk of conflict between nations managing a transboundary river basin, an empirical study conducted by Oregon State University found that there is a tendency towards cooperation, rather than conflict over transboundary river basins. In the last 50 years, over 150 treaties have been signed and the majority of the interactions between riparian states during this time period have been cooperative rather than conflictive (Giordano & Wolf, 2003). Although many

of these treaties do not address water allocation issues, which are the source of greatest conflict between riparians, they are signs of progress.

## **Experiences from International River Basins**

The starting point for identifying lessons learned from international river basins is that cooperation within an international river basin is seen as desirable and it is understood that a number of benefits will result from cooperation (Sadoff & Grey, 2002; Waterbury, 2002). These are described as benefits *to the river* (e.g., improved water quality, environmental protection, etc.), benefits *from the river* (e.g. hydropower, irrigation, etc.), benefits *because of the river* (e.g., reduced risk of conflict, increased food and security, etc.), and benefits *beyond the river* (e.g., integration of markets, benefits of regional trade, etc.) (Sadoff & Grey, 2002).

Historical analysis shows that international water can be a source of conflict, but at times can also be a unifying force leading contentious neighbours to resolve issues. Multinational agreements have been reached in several transboundary river basins under a supranational authority, including the Mekong, Rio Grande, and the Senegal (Lowi, 1995). It is important to define the factors that influence the prospects for cooperation to understand both the obstacles and the incentives to cooperate. Conditions that favour agreements include empathy and shared perceptions of the issues. As well, when all riparians have something to gain or lose by a potential agreement, then there is a motivation to reach a consensus in the form of an agreement (LeMarquand,



1977). Political will at the highest level cannot be overlooked in increasing the chance of an agreement being reached.

Conca, Wu and Mei (2006) found in their analysis of 65 agreements in 36 river basins signed between 1980-2000 that a history of prior cooperation in a basin is a significant determinant of whether a basin level agreement can be reached. In addition, prior agreements can form the basis for subsequent agreements, such as the historic 1995 Mekong Agreement, which built upon the 1975 agreement.

The presence of a strong institution that is resilient over time, even during times of conflict, is also seen as a one of the most important factors leading to cooperation. Giordano and Wolf (2003) site the example of the Mekong Committee, established in 1957, which continued to operate and exchange information throughout the Viet Nam War. Other examples of river basin cooperation in the face of extreme political conflict include the 1953-1955 negotiations between Israel and Jordan which occurred during a state of war, and the Indus River Commission, which has survived two wars between India and Pakistan (Giordano & Wolf, 2003). Within the Nile Basin, the Nile Joint Technical Committee survived the tense period following the attempted assassination of Egyptian President Hosni Mubarak. Egypt accused Sudan of being behind the attempt, and although the organization missed some of its quarterly meetings, it withstood the test of time (Waterbury, 2002).

In cases where a strong river basin organization does not exist, conflict and tension often characterize relations. Conflict can arise when one nation,

often a hegemonic power, unilaterally implements a project that impacts other riparians. The most recent case of this is Uruguay's unilateral decision to approve a pulp mill on the Uruguay River, which Argentina argued did not follow the necessary notification or consultation process stipulated in a bilateral treaty. This resulted in legal and diplomatic escalation between the two nations (International Court of Justice, 2007).

As previously mentioned, riparian relations are often characterized by an upstream hegemonic power. Examples of powerful upstream states include India in the Indus Basin, Turkey on the Euphrates, Syria in the Yarmouk, and Israel in the Jordan Basin (Lowi, 1995). There is often little incentive for cooperative management of a river basin from the perspective of upstream states. However, there are examples of downstream countries acting as a united front against hegemony. The lower Mekong states have successfully stood up against China under the Mekong River Commission. Similarly, the member states of the Zambezi River Commission presented a unified front against apartheid South Africa (Louka, 2006).

Although upstream states hold the geographic position of power within a basin, there are powerful downstream states that effectively control basin affairs. This can occur as a result of the inaction of upper riparian states coupled with downstream states' taking advantage of their position at the end of the waterway to utilize the resource. One method of doing this is for downstream states to utilize the water resources to develop their agricultural sectors, leading to a claim to prior rights to the watercourse due to their *de facto* agricultural

development; this results in veto power of upstream development (Louka, 2006). In the Nile Basin, Egypt has successfully argued prior rights to the watercourse and retains veto power on all upstream development.

The presence of a strong river basin organization and agreement offers the potential to focus on the needs of the riparian states, rather than the rights of each riparian. Louka (2006) points to the water agreement between Jordan and Israel, which acknowledges the rights of Jordan over certain wells, while simultaneously recognizing the needs of Israel to them, resulting in their leasing by Israel. In the context of the Nile Basin, the 1959 Agreement between Sudan and Egypt allowed for Egypt's water needs to be realized through Sudan's loaning Egypt part of its unused water allocation.

Some successful examples of river basin agreements link water allocation to other benefits, including the production of energy with the Mahakali Treaty between Nepal and India, or development assistance, as was the case with the Indus Treaty. River basin agreements can also be used to gain concessions for other bilateral issues, such as favourable trade arrangements or support on certain issues within the international community, something LeMarquand (1977) refers to as a "reservoir of good will".

LeMarquand (1977) argues that the number of riparians in international river basins is generally small; hence, the incentive to cooperate is great. He also acknowledges the benefits of integrated development opportunities in terms of economies of scale, compensation possibilities, etc. Public image and the desire to be perceived as a good neighbour can also provide incentive to cooperate and

reach an agreement. For example, the US agreed to build a desalting plant to treat irrigation drainage waters flowing to Mexico in 1971 despite the lack of obvious incentive to do so (LeMarquand, 1977). This was attributed to its desire to project a good public image to Latin America and the developing world. Generally, countries also want to be seen as following the rule of international law, though they will disregard it when it does not suit their objectives.

LeMarquand's analysis of the factors contributing to the agreement between the US and Mexico in the Colorado River Basin presents another example of a powerful upstream country making concessions to a less powerful downstream nation, despite any obvious economic incentives to do so. The Roosevelt government saw the agreement as a chance to showcase the "Good Neighbour Policy" (LeMarquand, 1977) and agreed to both forfeit some of its water allocation and pay extensive remedial costs. LeMarquand attributes this decision to the tenuous US legal position, the desire to link the agreement with other larger issues, and the US desire to be seen by developing countries as a responsible neighbour.

A history of mistrust, a lack of confidence and human conflicts negatively impact the chances for an agreement to be signed. LeMarquand (1977) concludes from his case study research that economic optimization is not a critical factor in determining the final outcome. In fact, LeMarquand found that international river basin agreements are often at odds with economic efficiency. This implies that one must look outside the traditional cost/benefit analysis when assessing these agreements. The need for relevant, accurate and current

information to inform decision makers regarding the pros and cons of potential agreements is paramount. Understanding alone is not enough to overcome these problems, however, as there has to be a fundamental interest on the part of the riparians to cooperate and work toward an agreement. If this is missing, then all other efforts to improve communication, enhance knowledge bases, and understand issues will be in vain.

The role of international development organizations should not be overlooked. The World Bank's commitment to fund the development of the Indus Basin provided incentives for India and Pakistan to reach an agreement (Lowi, 1995). The World Bank and the Canadian International Development Agency (CIDA) have been the most active donors within the Nile Basin and have played a positive role in encouraging cooperation between the riparian states.

A critical factor in evaluating the success of river basin organizations is whether the organizations have decision making and enforcement powers, rather than just advisory roles. The following factors were identified by Giordano and Wolf (2003) as supporting cooperative management:

- Adaptable management structures that are flexible to public concerns, changing basin priorities, and new information and monitoring technologies.
- Clear and flexible criteria for water allocations and water quality management: this is supported by water quality standards, enhanced information and understanding of basin dynamics.

- Equitable distribution of the benefits derived from water in terms of hydropower, agriculture, economic development or environmental protection.
- Concrete mechanisms for conflict resolution.

## **Legal Framework for International Waters**

Recognizing the benefit of cooperative water management through institution building, the international community has promoted a legal framework for managing international waters. This has occurred at both the international and basin levels. The 1911 Madrid Declaration on the International Regulation regarding the Use of International Watercourses for Purposes other than Navigation outlined general principles for cooperative water management, such as establishing joint technical committees and avoiding unilateral developments. In 1966, the Helsinki Rules on the Uses of Waters of International Rivers further elaborated these guiding principles. The importance of transboundary water management was subsequently recognized in the 1992 Earth Summit in Rio de Janeiro in Chapter 18 of Agenda 21, a non-binding action plan adopted by United Nations Conference on Environment and Development (UNCED) participants (Giordano & Wolf, 2003).

It took over a decade for the *United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses* (Watercourses Convention) to pass in the UN General Assembly in 1997. The Watercourses Convention stresses principles of universal participation, cooperative governance, equity, peaceful dispute resolution, communication and environmental protection

(Conca et al., 2006). The Watercourses Convention provides a framework and principles to guide basin level agreements; however, it is only legally binding in countries that have ratified it. Despite that fact that seven of the Nile Basin countries were present during the adoption of the Convention at the UN General Assembly, only two (Kenya and Sudan) voted in favour of it. Most notably, Egypt and Ethiopia abstained from voting.

All legal discussions of water rights have to address what is known as the Master Principle of appropriation, whereby whoever uses the water first establishes a claim to it. The second user cannot diminish the right of the first user. The World Bank has entrenched the principle of acquired rights in its Operational Directive (World Bank, 1995). For projects on transboundary rivers, the World Bank will only fund them once the principle has been fully explained to other riparians and they have agreed to respect this principle.

The principle of acquired rights is closely linked to the principle of avoiding appreciable harm, which presents an additional challenge in international water law. Reconciling the sometimes contradictory principles of avoiding appreciable harm and recognizing equitable use has been a source of significant tension in developing global legal principles governing shared waterways. This reflects the tension and conflict between the interests of upstream and downstream states. The principle of avoiding appreciable harm is generally seen to favour downstream states, as upstream developments impact the quality and quantity of water flowing to downstream states, allowing downstream states to claim appreciable harm and prevent such developments. Equitable use tends to favour

upstream states, as it gives them a claim to an equitable share of water regardless of the needs of downstream states (Wolf, 1999). The Watercourses Convention attempted to strike a balance between the seemingly contradictory principles of absolute territorial sovereignty<sup>2</sup> and absolute territorial integrity<sup>3</sup>. Article 5, *equitable and reasonable utilization*, is considered to offer a compromise between the two contradictory principles (Dinar, 2006). Article 7, *obligation not to cause significant harm*, enshrines the principle that states must take all necessary precautions to ensure that their actions do not harm other riparian states. Despite the fact that both articles have equal weighting in the Convention, some international scholars argue that Article 5 takes precedent over Article 7 (McCaffrey, 2001). Albert Utton (1996) also argues for the primacy of Article 5, but suggests that it be applied for issues around quantity and the allocation of formulas, while Article 7 should deal with issues of quality and harm to ecosystems.

It is important to note that the Watercourses Convention is designed to provide general guidelines as an umbrella accord, to allow countries to form basin-specific agreements. At the basin level, riparians have been working to form agreements to govern the development and use of shared waterways. From 1980-2000, over 62 agreements were signed concerning 36 different basins (Conca et al., 2006). Most historical agreements do not resolve water allocations issues, and those that do resort to absolute amounts, making water sharing

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<sup>2</sup> Absolute territorial sovereignty implies that an upstream state can do what it likes with the river, regardless of the impacts to a downstream state.

<sup>3</sup> Absolute territorial integrity implies that the downstream state has the priority to not be harmed by the actions of the upstream state.



a zero-sum game. However, more recent developments in international agreements have established a precedent of determining formulas that allocate the benefits of water, rather than the water itself. An example of this is the 1961 Columbia River Treaty between the US and Canada, whereby Canada received payment for certain benefits derived from the river (Giordano & Wolf, 2003). Wolf et al. (1999) also point to the 1975 Mekong River Commission agreement, which defined equal rights to the shared water based on each riparian's economic and social needs.

## **CHAPTER 3: COOPERATION THEORIES**

### **Introduction**

The collective action problem facing the Nile Basin riparians is that of how to get a diverse group of countries with a long history of mistrust to coordinate their interests and take action to reach an agreement governing the Nile River. Communities of individuals have relied on institutions resembling neither the state nor the market to govern some resource systems with reasonable degrees of success over long periods of time. Theories on collective action, however, are not very optimistic in predicting cooperation. In fact, often these theories are better at demonstrating why cooperation fails, rather than why it succeeds (Waterbury, 2002).

The following section presents the key points of collective action theory and discusses three variations of this theory; namely, the Tragedy of the Commons, the Prisoner's Dilemma, and the Logic of Collective Action. Examples of voluntary compliance in the international arena are then presented, followed by a discussion of hegemonic stability.

### **Collective Action Theory**

Three somewhat different models are often used to demonstrate how communities of individuals attempt to achieve collective benefits. These models of collective action are: 1) the Tragedy of the Commons; 2) the Prisoner's

Dilemma; and 3) the Logic of Collective Action (Ostrom, 1990). All of them are focused around the 'free-rider' problem, which arises when one person cannot be excluded from the benefits that the others provide; consequently, they are motivated to not contribute to the joint effort and instead benefit from a 'free ride' on the efforts of others. If all individuals 'free-ride' the collective benefits will not be realized (Ostrom, 1990). All three models assume that resource users will not cooperate to achieve collective benefits.

Ostrom (1990) argues that solutions to common pool resources can prevail if certain problems of supply, credibility, and monitoring are solved. She presents the fundamental characteristics of successful common pool resources management schemes. She argues that "getting the institution right is a difficult, time-consuming, conflict-invoking process" (Ostrom, 1990). She emphasizes that all collective action efforts must address the issue of free-riding, solve commitment problems, establish new institutions, and monitor individual compliance with sets of rules.

Ostrom (1990) identifies some of the internal characteristics of unsuccessful attempts at resolving collective action problems. Internal issues that are obstacles to cooperation include lack of capacity to communicate, mistrust and a lack of common vision for the future. In addition, powerful entities that stand to gain from the status *quo* will often prevent efforts by those less powerful to change the rules of the game.

Ostrom (1990) identifies principles of long enduring common pool resources institutions based on her case study research. The principles are as follows:

1. Clearly defined boundaries of jurisdiction over the resource.
2. Clearly defined user group or community responsible for managing the resource.
3. Locally appropriate rules.
4. Clearly identified rights to resources and rules about them.
5. Those individuals impacted by the operational rules can participate in modifying the operational rules.
6. Accountable monitoring and effective authoritative structures.
7. Graduated sanctions for appropriators<sup>4</sup> who violate operational rules.
8. Clear, accessible and rapid conflict resolution mechanisms.
9. Recognition of rights to organize that are not challenged by external government authorities
10. Appropriation, provision, monitoring, enforcement, conflict resolution, and governance activities organized into multiple layers of nested enterprises.

Ostrom's research (1990) focuses on diverse case studies that share some fundamental components: they are all small-scale common pool resources within a single country and they all consist of appropriators that are heavily dependent on a single resource flow for their livelihood. She places emphasis on

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<sup>4</sup> The process of withdrawing resource units from a resource system is appropriation, and those that withdraw are called appropriators.

monitoring, which is important once an agreement has been reached, but does not fully address the process of getting to the agreement.

### **Tragedy of the Commons**

Hardin's solution to the Tragedy of the Commons was the market, or what he called the 'private enterprise solution', or socialism (Hardin, 1968). Hardin believed that without a coercive power, individuals would not be motivated to conserve precious common pool resources. This has fuelled the argument that central governments should control and manage natural resource systems (Heilbroner, 1974).

Hardin's Tragedy of the Commons illustrates how individual sheep herders acting in their own self-interest can destroy a shared resource, even though it is not in anyone's interest to allow this to happen. Hardin describes sheep herders using common grazing land. In situations with large numbers of sheep herders, the marginal cost (in terms of destruction of the resource) attributable to each sheep herder who increases his/her flock and over-grazes the commons is not charged to him/her, and thus incentive to agree on regulation is minimal (Hardin, 1971).

Robert Smith (1981) has led the call for developing a system of private property rights in common property resources. In theory, this is possible in situations where the common pool resources are land-based, but for water-based resources, such as a shared river basin, the situation becomes more complicated. A potential solution to this, as outlined by Clark (1980), gives users

certain rights to the resource based on time, or quantity of the resource to be extracted, or type of equipment to be used. In fact, the 1959 Nile Waters Agreement sets absolute amounts of water that Sudan and Egypt can each withdraw from the river; in a way, they have implemented a variation of private property rights (Waterbury, 2002).

### **Prisoner's Dilemma**

A different variation of Hardin's Tragedy of the Commons argument is presented as the Prisoner's Dilemma. The Prisoner's Dilemma is known as a non-cooperative game in which all players possess complete information in terms of understanding the payoffs attached to possible outcomes. The players do not communicate with each other, or if they do they enter into non-binding agreements, and they are not aware of what the other players are choosing to do. Under this theory, each player is always better off by choosing to defect, regardless of the decisions of the other players. Put simply by Ostrom (1990), the Prisoner's Dilemma presents the "paradox that individually rational strategies lead to collectively irrational outcomes seems to challenge a fundamental faith that rational human beings can achieve rational results". Richmond Campbell's (1985) assessment of the Prisoner's Dilemma concludes that it is impossible for rational creatures to cooperate.

### **Logic of Collective Action**

Mancur Olson (1965) developed the theory called the Logic of Collective Action to challenge the optimism inherent in 'group theory', which implies that

individuals with common interest will voluntarily act to achieve a common goal. Olson's argument is that rational self-interested individuals will not act to achieve their common or group interests, unless they are either coerced, there is a separate incentive distinct from the group interest, or if there are only a small number of actors. Olson (1965) bases his argument on the idea that if there is no way to exclude an actor from realizing the benefits of a collective good once the good has been produced, there is also no incentive to contribute voluntarily to the provision of that good.

According to Olson, when appropriators act independently within a common pool resource, the total net benefit they obtain will usually be less than could have been achieved if they had developed collaborative strategies (Olson, 1965). At the very least, they will receive lower returns acting independently, and at worst, they can destroy the common pool resource itself (Olson, 1965). The costs involved in transforming a situation, from one in which individuals act independently, to one in which they act collectively, can be high. The benefits can be shared by all, whether or not all contributed to transforming the situation.

## **Voluntary Compliance**

Despite the inherent pessimism in collective action theory, there are many examples of voluntary compliance in the international arena (Waterbury, 2002). Abram Chayes and Antonia Chayes (1993) investigated states' adherence to voluntary international conventions and treaties and found that most states do honour their commitments and that defection is the exception. They identify the negotiating process itself as creating constituencies for maintenance and

compliance, as well as the shared norms and friendships that develop through the treaty building process. Chayes and Chayes (1993) point to the “appearance of compliance” even in situations where states do not intend to honour their commitments. They identify some of the activities that sustain regimes, such as: data gathering and regular reporting; disclosure and notification of regime activities that will impact other states; dissemination of information on the regime to multiple stakeholders; training personnel in various aspects of the regime; and verification of compliance and monitoring of required actions under the regime (Waterbury, 2002).

Studying states' adherence to international conventions and treaties is useful as these treaties present collective action problems by dealing with a public good amongst a large number of countries, where benefits and costs are unevenly distributed. These conventions and treaties, however, deal with 'lowest common denominator' requirements and are therefore not generally stringent, nor are they easily monitored. They also don't involve absolute dependence on a common property resource, as is the situation with the negotiation of the Nile River Agreement.

## **Hegemonic Stability**

The geographic position, or order, of countries in an international river basin plays a critical role in determining the dynamics of their relationships. An upstream country is considered to be in the geographically superior position, because the upstream country can pollute, remove or restrict the flow of water flowing downstream. The importance of the order of countries on international



waterways has led to the 'hegemonic stability theory', which states that the presence of a dominant state, or hegemon, in an international river basin leads to collectively positive outcomes for all states (Snidal, 1985).

The notion of hegemonic stability has been used to analyze the likelihood of cooperation within a transboundary river basin. Lowi (1993) presents a hydro-political variant of hegemonic stability, arguing that the interest of the hegemonic state along a river is a pre-requisite to cooperation. According to Lowi's variation of the hegemonic stability theory, cooperation is more likely if the hegemonic power holds the geographically inferior position downstream (Lowi, 1993). The chances of cooperation are further increased if the hegemonic state is extremely dependent on the water resources. Conversely, if the hegemonic power is upstream, the chances of cooperation are reduced as the hegemonic power holds the economic, military, and geographic position by being upstream; therefore, it has little incentive to cooperate and can act unilaterally with few consequences.

A variation on this theory was developed by Zeitoun and Warner (2006) under a framework of hydro-hegemony. Under this theory, the key factor determining the outcome of competition for water is the power wielded by individual riparians. According to Zeitoun and Warner (2006), the hegemonic state determines if interactions are cooperative or competitive in nature. Other important factors determining the outcome of competition for water include upstream/downstream position and potential to exploit water through infrastructure projects or technical capacity.

According to the hegemonic stability theory, the chances of cooperation within the Nile Basin are high, as the hegemonic state, Egypt, is downstream and is completely dependent on the water resources of the Nile for its economic and social well-being. The other aspect to Lowi's hydro-political variant of hegemonic stability theory is the notion that a hegemonic power can enforce or ignore arrangements as it sees fit (Lowi, 1993). However, this theory does not take into account the complexity of the number of riparians within the Nile Basin, nor does it account for other Egyptian incentives, such as linking sharing of the Nile with other issues (e.g., power, etc.) and the political good will that has been built through a number of cooperative efforts.

## **CHAPTER 4: INSTITUTIONAL SETTING**

### **Introduction**

In order to understand the behaviour of the Nile Basin riparians, it is critical to understand the context in which they are operating. The geographic, historical and institutional context within the Nile River Basin has shaped the current state of affairs amongst the riparian countries. Lowi (1993) underscores the importance of the physical, human, and psychological environments as providing possibilities and imposing constraints upon state behaviour in riparian systems.

The purpose of this section is to understand the different cooperative efforts and institutional arrangements within the Nile Basin leading to the present day Nile Basin Initiative (NBI). For each institutional effort, it is important to assess the historical and political context at the time, as well as to note the entities who played a role in the effort and their implicit or explicit agendas. Finally, it is important to analyze if these institutional efforts are evidence of real cooperation that could create enough momentum for formal cooperation within the Nile Basin. Although there were a total of 15 transboundary water agreements signed between 1925 and 2003 (Lautze & Giordano, 2005), two main agreements are discussed in more detail: the 1929 Nile Waters Agreement and the 1959 Agreement on the Full Utilization of the Nile Waters.

The quest for a regime within the Nile Basin can be divided into three eras. The first era is the time period of the nineteenth century when the colonial

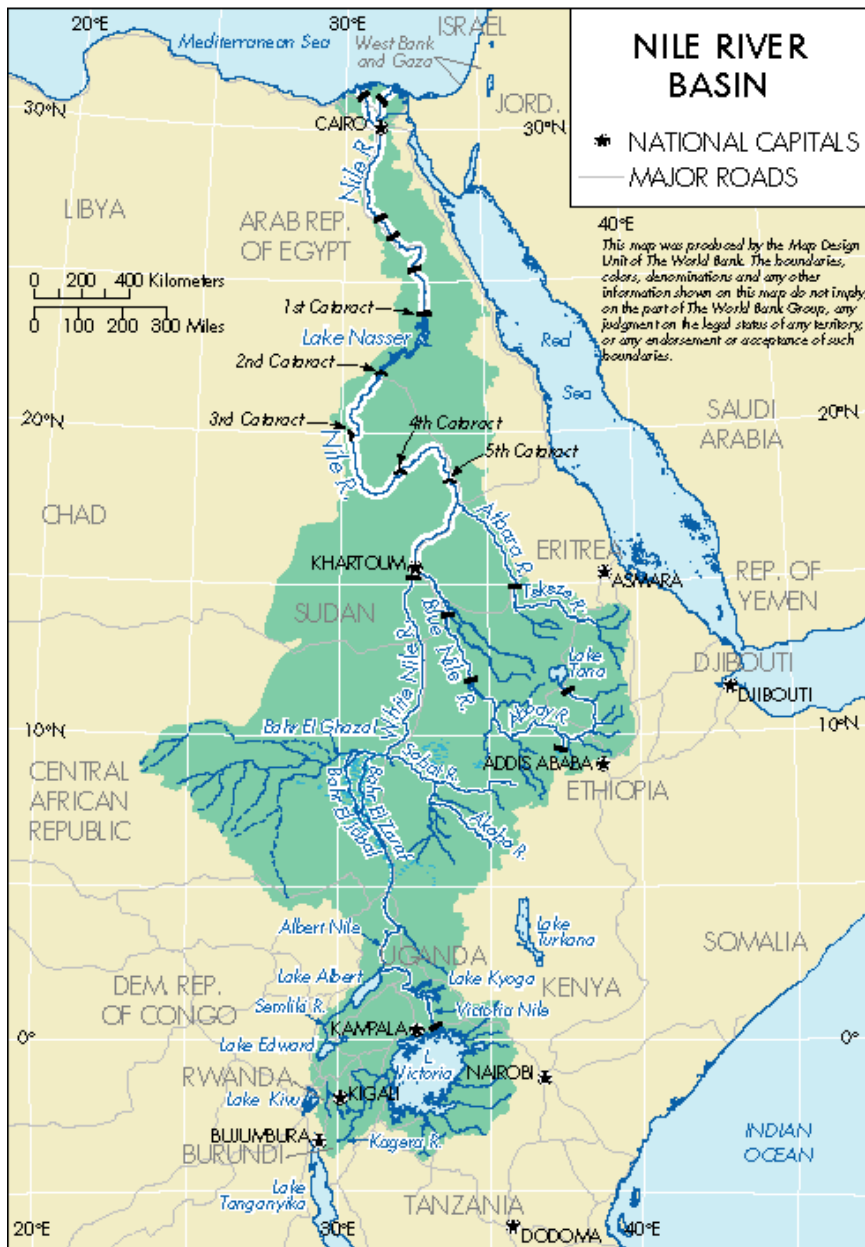
powers of Great Britain, Italy and France jockeyed for power and control within the region. This was replaced during the first half of the twentieth century by the hegemonic regime of Great Britain. The third regime emerged out of the Cold War (covering the time period from 1945 to 1989) and can be characterized by the shifting position of various riparian states; mainly Egypt, Ethiopia and Sudan; relative to the US and the Soviet Union (Waterbury, 2002). The political climate in the upper basin riparians from 1960 to present has been tumultuous and marred with war and conflict. This has prevented the upper riparians from laying any claim to water rights of the Nile.

## **Geographic Context**

Termed the 'birthplace of hydrology', the Nile is arguably the most studied river in the world, with records dating to 3000 BC (Evans, 1995). The Kingdom of Kush; centred at the confluences of the Blue Nile, White Nile and Atbara River; the Egypt of the pharaohs, as well as the Greeks, and others were completely reliant on the Nile for their survival (Collins, 2002). Historians and geographers have long been fascinated by the source of the Nile waters and the dynamics of annual floods.

In present day Africa, the Nile River Basin supports a population of over 160 million people in ten countries. The countries that share the Nile drainage are Burundi, Democratic Republic of Congo (DRC), Egypt, Eritrea, Ethiopia, Kenya, Rwanda, Sudan, Tanzania, and Uganda (Figure 1). Half of the Nile Basin's countries are among the world's very poorest nations, which places considerable stress on their natural resources (CIDA, 2007a).

**Figure 1 Map of the Nile River Basin.**



Source: Nile Basin Initiative, 2001.

The Nile River is the longest river in the world, traversing 6,700 kilometres: from the headwaters of the Kagera River in Rwanda, to the Egyptian delta on the Mediterranean coast. The Nile River Basin covers 3 million km<sup>2</sup>, an area equivalent to one tenth of Africa's total land mass (Howell & Allan, 1995). There

are two main sources of the Nile – the Blue Nile originating in the highlands of Ethiopia and the White Nile formed from tributaries emerging out of the mountains of Burundi and Rwanda. The river flows through diverse landscapes, ranging from mountains to tropical forests, woodlands, savannas, wetlands, deserts and the delta. The variety of landscapes, climate, development, and land use practices means that environmental issues also vary dramatically across the basin.

In the Ethiopian highlands, a stream called the Little Abbai flows into Lake Tana and emerges as the Blue Nile at about 6,000 feet (Collins, 2002). The rivers originating in this highland region consist of the Blue Nile, Atbara River, and Sobat River. Together, these rivers contribute approximately 85% of annual flow to the River Nile (Field, 1973), as shown in Table 1. Heavy seasonal rainfall in the Ethiopian highlands swells these rivers and leads to the annual Nile flood, but during the dry season the flows in these rivers decrease significantly.

**Table 1 Contribution of the Main Nile Sources.**

<b>Source</b>	<b>Tributary</b>	<b>12-month water year</b>	<b>Flood period</b>
Ethiopian	Blue Nile	59%	68%
	Sobat	14%	5%
	Atbara	13%	22%
Equatorial Lakes	Bahr el Jebel	14%	5%

Source: Field (1973).

The White Nile Basin extends from the mountains of Burundi and Rwanda to the convergence of the White and Blue Nile at Khartoum, and includes the Equatorial Lakes Plateau and the basins that drain to the plateau lakes, the

extensive wetlands of the Sudd and the Bahr el Ghazal sub-basin, and the Sobat River sub-basin. A number of tributaries from Burundi and Rwanda eventually flow into the Kagera River, over Rusumu Falls and into Lake Victoria (Collins, 2002). The Victoria Nile flows out of the Northern end of Lake Victoria over the Owen Falls Dam and then into Lake Kyoga. From there the river drops from the Rift Valley at its peak to Lake Albert where it is reinforced by water from Lake George and Lake Edward and flows out of the Lake Plateau as the Albert Nile. At the border of Uganda at Nimule it becomes the Bahr el Jebel or the Upper Nile. Tributaries flowing into the upper White Nile (Bahr el Jebel) in southern Sudan also contribute water to the White Nile, although approximately half of the water flowing into the Sudd downstream is lost to evaporation and overflow into the extensive wetlands of this region (Hatfield Consultants Ltd. [Hatfield], 2006a). The White Nile and Blue Nile converge at Khartoum, Sudan, to form the main River Nile. The Atbara River is the last major tributary of the River Nile, and converges with it about 320 km downstream of Khartoum. A map showing the tributaries of the Nile is contained in Figure 2.

The Nile River experiences massive fluctuations throughout the year, with 80% of the annual discharge occurring between August and October (Lowi, 1993). Prior to construction of the Aswan High Dam, the flow was not reliable throughout the year, and was not abundant during the long, hot and dry summer months, when it is especially critical to Egyptian agriculture. This inhibited the development of the river in many ways.





Department stated the need to reduce water lost in the vast swamps (Beshir, 1987). This notion of reducing water loss in the Sudd has subsequently dominated much of the discussion of Nile hydrology between Sudan and Egypt. This idea eventually changed from reducing water loss in the Sudd to diverting the water completely through a canal and storing the water in an over-year storage reservoir (Beshir, 1987).<sup>5</sup>

Construction of the Jonglei Canal, initiated in 1978 but discontinued in 1983 due to civil conflict, could lead to additional change in the Sudd ecosystem if completed; to date, 240 km of the planned 360 km canal length has been completed. Diversion of water around the Sudd could reduce the area of seasonally flooded grasslands, impact the distribution of other vegetation types, eliminate critical habitat, and displace thousands of Nubians from their homeland.

It is important to note the critical role played by the situation in South Sudan in any future regime and agreement governing the Nile. Geographically, it is critical because both the control of the Sudd and the discharge of the White Nile is at stake. However, a detailed political assessment of the complex issues at play within South Sudan is not within the scope of this project.

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<sup>5</sup> Over-year storage is designed to take into account storing the water from as much as two consecutive floods.

## **Nile Waters Agreement (1929)**

*“For thousands of years the people of Egypt owed their very existence to a river that flowed mysteriously and inexplicably out of the greatest and most forbidding desert in the world.” (Hillel, 1994)*

Egypt presents a strong claim to acquired rights of the Nile River. For over 7,000 years, the Nile River has sustained the people and land of Egypt. For several millennia, the annual flood has brought fertile soil and water to sustain agricultural practices, but also meant that people lived at the mercy of the flood: a good flood meant a good harvest, while an unusual flood brought devastation and famine. The desire to control the flow of the Nile was also fuelled by the development of Egypt's agricultural sector.

In the early nineteenth century Egypt's agricultural sector was modernized and the cultivation of cotton necessitated perennial irrigation that required constant and reliable water sources. The Nile barrages provided water for the perennial irrigation of Egypt's fields, and allowed two or more harvests per year. The increased agricultural productivity of Egypt due to perennial irrigation has contributed to the dramatic growth of Egypt's population over the past century (Collins, 2002). The British also implemented perennial irrigation in Sudan in the nineteenth century to support cotton production for the textile industries in England, and built the first dam in Sudan in 1925 (Hillel, 1994). Growing populations and agricultural pressures, coupled with development plans by both Egypt and Sudan, led to the necessity for a formal agreement on the allocation of water.

The first agreement governing the use of the Nile River, the Nile Waters Agreement, was signed in 1929 between Egypt and Great Britain, on behalf of Sudan. This agreement is considered a classic case of established or historic rights (Louka, 2006). This bilateral agreement was designed to recognize Egypt's acquired rights over the Nile and to avoid appreciable harm to Egypt's agricultural sector (Waterbury, 2002). Under the agreement, Egypt recognized Sudan's right to water for its own development, as long as Egypt's "natural and historic rights are protected" (Waterbury, 1987). The agreement stipulated that Egypt was entitled to 92.3 percent of the annual utilizable flow of the Nile. Although Sudan had not utilized the Nile in any considerable way, it was nonetheless entitled to the remaining 7.7 percent under the agreement (Louka, 2006). The allocations for each country consisted of water that could be stored in each country or used for flood irrigation in the course of one year (Waterbury, 1987). Ethiopia neither recognized Egypt's historic rights to the river, nor the essence of this agreement. Uganda recognized Egypt's acquired rights claim through the Owen Falls Agreement (Waterbury, 2002).<sup>6</sup>

Egypt's relationship with the West was tumultuous. In 1955, the US and the World Bank committed to fund US \$256 million for the building of the Aswan High Dam (Waterbury, 2002). However, later that year Egypt surprised the world by purchasing arms from Czechoslovakia, and in so doing, placed itself firmly in the Soviet Union camp of the Cold War. Western financial backers of the Aswan

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<sup>6</sup> By signing the Owen Falls Agreement in 1949 prior to the construction of the Owen Falls Dam, the United Kingdom, on behalf of Uganda, accepted Egypt's claim of acquired rights to the Nile through allowing Egyptian engineers to monitor discharges from the dam.

High Dam pulled out, causing Egypt to search for alternative funding sources, which eventually led Egypt to nationalize the Suez Canal (Waterbury, 2002). Cold War alliances in place in 1956 lasted until the early 1970s: Egypt was aligned with the Soviet Union and Ethiopia was aligned with the United States.

### **Agreement on the Full Utilization of the Nile Waters (1959)**

The Agreement on the 'Full Utilization of the Nile Waters', signed in 1959, was designed to account for the possibility of over-year storage due to the development plans of the Aswan High Dam (Waterbury, 1997). Sudan was in a more favourable bargaining position during negotiation of the 1959 Agreement, and demanded the allocation be re-adjusted to give Sudan access to one third of the utilizable flow of the Nile to account for a growing population. Sudan also demanded compensation for the relocation of tens of thousands of indigenous Nubians due to the construction of the Aswan High Dam (Hillel, 1994). Thus, Egypt's allocation went from 12:1 to 3:1, representing a considerable enhancement in Sudan's rights over the use of the Nile (Lowi, 1993).<sup>7</sup> Egypt suffered a loss of some of its acquired rights under the agreement to the benefit of Sudan's equitable and future use rights (Waterbury, 1997). The agreement was controversial and negotiators for both countries were accused of selling out (Waterbury, 2002). An unstable political situation in Sudan has undermined all national development plans; consequently, Sudan has never contested this agreement (Louka, 2006).

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<sup>7</sup> The 1959 Agreement was based on an estimated mean annual inflow at Aswan of 84 billion cubic meters (BCM). Sudan was entitled to 18.5, while Egypt could extract 55.5 BCM per year (Lowi, 1993).

The 1959 Agreement established the Permanent Joint Technical Commission (PJTC) as the institution to monitor implementation of the accord, conduct feasibility studies for joint initiatives and negotiate financing and subsequent claims to the river. It is important to note that despite the lack of power granted to the PJTC, it has for the most part maintained technical research, quarterly meetings and ongoing monitoring activities in the years since the 1959 Agreement, even during times of strained diplomatic relations (Waterbury, 1987).

For the purposes of this paper, there are two critical components of the 1959 Agreement that have defined riparian relations since the agreement was signed, and which are consequently relevant to the discussion. First, the 1959 Agreement made use of the Nile River a zero-sum game and established an allocation formula based on absolute amounts of water (Waterbury, 2002). Second, the agreement gave no recognition or rights to any of the other ten countries that share the Nile River Basin, most notably Ethiopia, which contributes 60% to the overall flow (Lowi, 1993). The agreement only stated that “once other upper riparian states claim a share of the Nile waters, both countries will together study these claims and adopt a unified view thereon”. To date, this is the only legal agreement governing the use of the Nile, though it is not recognized as such by all of the riparians.

## **Post 1959 Institutions**

The geographic, political and strategic role of post-colonial Africa has played a large role in shaping dynamics amongst the Nile Basin riparians. Many

developing countries emerged from colonial dependence only to find themselves in the middle of the Cold War, where large amounts of foreign aid were available to countries, depending on their political ideologies (Allan, 1999). Bordering Israel and containing the Suez Canal, Egypt's geostrategic position was strong within the region and it exploited that position in international agencies and regional institutional efforts within the Nile River Basin.

There were ongoing attempts to establish institutions to manage certain aspects of the Nile following the 1959 Agreement, including HydroMet, Undugu, and TECCONILE. All of these attempts had one thing in common: the notable absence of Ethiopia as an active member and participant, and the presence of Egypt driving the agendas and direction of these organizations. It is relevant to review these institutional efforts to understand the dynamics and politics of the current institutional arrangement in the Nile.

### **HydroMet**

Following a dramatic rise in Lake Victoria in the early 1960s that led to severe flooding and damage along the shores of Lake Victoria, the World Meteorological Organization (WMO), in collaboration with the United Nations Development Program and supported by Egypt, established an initiative to study the potential causes of the rise. The initiative, known as HydroMet, was conducted in two phases (1967-1974 and 1974-1981) and consisted of data-gathering, modelling, analysis, and training of staff to understand rainfall and runoff in the upper basin. As a result of this project, hydro-meteorological data has been collected over a 25-year period and staff from all member countries have

been trained. Equally important, the HydroMet project created a forum to allow member countries to discuss various technical issues related to the development of the Nile (United Nations Economic Commission for Africa [UNECA], 2000).

The HydroMet initiative was important because it was the first collaborative effort between all of the riparians except Ethiopia and the DRC (Zaire at the time). The institutional arrangement of this initiative was characteristic of future relationships: Egypt had considerable influence, despite the fact that it was outside of the HydroMet study area, while Ethiopia refused to participate as an active member.<sup>8</sup> Some of the riparians claimed that Egypt and Sudan's ultimate goal was to secure data that could be used for future planning (Waterbury, 1987), illustrating the lack of trust and confidence within the basin. The final recommendation of the HydroMet project, put forth by Egypt, was the establishment of a regional organization to study the entire Nile Basin.

## **Undugu**

Following HydroMet, the next attempt at promoting basin-wide cooperation was led by Boutros Boutros-Ghali through the establishment of the Undugu group of Nile riparians<sup>9</sup> in 1983. Boutros-Ghali, then Minister of State for Foreign Affairs, established Undugu with the intent of taking the focus away from purely water-related issues and instead emphasizing potential collaborative initiatives in transportation, tourism, public health, inter riparian investment and regional security. This approach to resolving collective action problems focuses on

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<sup>8</sup> Ethiopia joined HydroMet in 1971 as an observer (Waterbury, 2002).

<sup>9</sup> Undugu translates to Fraternity in Swahili (UNECA, 2000).

emphasizing common interests and similarities rather than differences. As with other institutional efforts, Undugu was deemed a failure due to Ethiopia's reluctance to participate, based upon a mistrust of Egypt (Waterbury, 2002).

## **TECCONILE**

In 1992, the Technical Cooperation Committee for the Promotion of Development and Environmental Protection of the Nile Basin (TECCONILE) was launched to continue the institutional momentum developed through HydroMet. TECCONILE was promoted by a number of bilateral and multilateral organizations, most notably CIDA and the World Bank. Initially six countries were members; namely, Egypt, Sudan, Rwanda, Tanzania, Uganda, and Zaire, while Ethiopia, Burundi, Eritrea, and Kenya had observer status.

The launching of TECCONILE occurred at the same time Meles Zenawi led a new regime to power in Ethiopia, opening Ethiopia up to the Western world. Following the end of the Cold War and the removal of Russian resources, Ethiopia was eager to attract foreign investment and looked to the World Bank for support. As a result, this was Ethiopia's first real attempt at participating in a regional initiative, even though it only maintained observer status. Despite this sign of progress, many of the member countries argued that it was more of the same, with Egypt pushing forward initiatives focused on water conservation and improved efficiency of water resources in upstream countries (Allan, 1999). This position has characterized Egypt's stance, which is to maintain the 1959 allocation rights by ensuring that any future claims to the water would come from new, rather than existing, sources of water.



The timing of TECCONILE was important because it coincided with the *Nile 2002 Conference Series*, initiated by CIDA in 1992, that brought senior government representatives and the scientific community together to discuss future Nile collaboration through a series of conferences. This built the political will for cooperation at the same time that the technical representatives were working together under TECCONILE to develop the 1996 Nile River Basin Action Plan, which recommended investment projects totalling US \$100 million (Allan, 1999).

### **Nile Basin Initiative**

In 1999, the World Bank, the Canadian International Development Agency (CIDA) and the United Nations Development Program (UNDP) supported the establishment of the Nile Basin Initiative (NBI). The overall mission of the NBI is:

*“To achieve sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile Basin water resources.”* (NBI, 2007)

The NBI is the first real basin-wide cooperative effort within the Nile Basin. All of the riparians are members, with the exception of Eritrea which has observer status. There is an organization structure, which includes all of the member countries, and there has been an attempt to distribute the programs and projects equally throughout the basin.

The NBI has promoted a policy of hiring officials from member countries, rather than staffing the organization with foreign experts. NBI staff are also generally placed in countries other than their home countries (Wondimu, 2008),

in an effort to promote understanding and awareness of the various issues being faced in each country.

The highest level of decision making within the NBI is the Nile Council of Ministers, which consists of the Ministers of Water from each of the nine member countries. The Nile Technical Advisory Committee consists of two senior government representatives from within the Ministry of Water in each country. The Nile Secretariat is based in Uganda and is chaired by an Executive Director with a two-year term; it is staffed by a team of technical experts, as well as representatives from donor agencies. Projects within the NBI are divided into two categories: 1) Basin-wide Shared Vision Programs (SVPs), intended to create a basin-wide enabling environment for sustainable development; and 2) Subsidiary Action Projects (SAPs), for joint investment projects.

The Shared Vision Programs are focused on four cross-cutting themes, including the environment, power and trade, efficient water use for agriculture, and water resources planning and management, as well as four facilitative topics consisting of confidence building and stakeholder involvement, applied training, socioeconomic development, benefit-sharing and coordination (NBI, 2007). These programs are considered basin-wide programs with activities and program representatives in all nine riparian countries. They are designed to build trust and confidence between the member countries.

The Strategic Action Projects are divided into two core programs: the Nile Equatorial Lakes region (NEL-SAP), comprised of the six Equatorial Lakes countries plus Egypt and Sudan; and the Eastern Nile (EN-SAP), consisting of

Egypt, Ethiopia and Sudan (NBI, 2007). The approach of promoting sub-regional projects is to reduce the transaction costs and to reduce the complexity of negotiations between nine separate riparian states (Louka, 2006). This approach goes against the approach of viewing the entire basin as a single unit, as is proposed within Integrated Water Resources Management (IWRM). However, it is a pragmatic solution to a complex negotiating environment.

## **Results of Institutional Efforts**

Many of the post-1959 institutional efforts within the basin have been driven by the agenda of Egypt, while Ethiopia has refused to participate. This pattern was altered, and perhaps history as well, with the establishment of the Nile Basin Initiative and the active and equal participation of all member states. Although the NBI has been criticized for lack of results and the donor community has grown impatient with the slow release of funds, the organization has made substantial steps toward a common understanding and agreement on the Nile. It is developing a knowledge base, a team of regional experts who possess an in-depth understanding of the issues, and trust and understanding between the member countries.

The technical studies, information and data gathering, training and capacity building activities, public engagement activities, and exchanges of technical experts are all small steps toward building trust amongst the Nile riparian countries. Waterbury (2002) attributes these types of activities to sustaining regimes over time. Lack of knowledge regarding the resource system was cited by Ostrom (1990) as one of the barriers to collective action. The NBI's

effort to create a knowledge base is therefore evidence of progress toward potential cooperation. Similarly, the time and resources invested by member countries in the negotiation process has created basin-wide groups of experts who have a common understanding of the issues and have even developed personal relationships, which can help support cooperation. Waterbury (2002) refers to this as the creation of “new institutional interests”, which can sometimes lead to “tipping” moments for formal cooperation.

Within the Nile Basin, however, there is still a long way to go towards formal cooperation that could lead to a Nile Agreement. Many basic facts about the river are not agreed to by all riparians, despite the overwhelming scientific evidence (Hatfield, 2006b). Hatfield Consultants Ltd. conducted an environmental education project that produced over 75 maps covering various aspects of the environment and resources of the basin. It was requested that country borders on all 75 maps be removed, because many of the riparians do not agree on their borders, illustrating the distance that they still have to come. Examples of unilateral initiatives, including a number of proposed micro-dams in Ethiopia, and the New Valley Project in Egypt, are cause for concern. In 2002, Egypt accused Sudan, Ethiopia and Uganda of illegally tapping the Nile waters and threatened recourse. In 2004, Tanzania initiated a pipeline project to withdraw water from Lake Victoria without consulting Sudan and Egypt (Vasagar, 2004). More recently, however, Ethiopia secured approval and World Bank funding for an irrigation project using water from the Nile (Sisay, 2007) demonstrating the benefits of cooperating under the auspices of the Nile Basin Initiative.

## **CHAPTER 5:KEY PLAYERS WITHIN THE NILE BASIN**

There are two main groups of actors within the Nile Basin that are critical to discuss when considering the prospects for a basin-wide agreement, as well as the factors influencing a potential agreement. The first group of actors are the Nile riparian countries themselves and the second group is the donor community. The positions and interests of each of these groups are reviewed in the following section.

### **Nile Basin Riparian Countries**

The present-day dependency and need for the Nile River varies greatly between the riparians who share the Nile. Rwanda, Burundi and the Democratic Republic of the Congo (DRC) have little interest in utilizing the river. Kenya, Tanzania and Uganda are more concerned with development of the Equatorial lakes than the Nile. Ethiopia, as the upstream state, has the ability to restrict or impact the quantity and quality of water flowing downstream. As such, it occupies the most geographically commanding position of all the riparians and is actively lobbying for a change in the status *quo*. Sudan and Egypt are almost entirely dependent on the Nile for domestic and agricultural water. Sudan and Egypt would like to see the allocation limits established in the 1959 Agreement formally recognized by all of the basin countries (Waterbury, 2002). Any future claim to the waters of the Nile would have to come out of new water sources, or more efficient water use, in which Egypt invests heavily.

Egypt and Uganda both support the maintenance of the status *quo*, but for radically different reasons. Uganda's interest is driven by the desire to develop hydroelectric power sites within the White Nile Basin (Waterbury, 2002). Uganda's plans and interest depend on high levels of water in Lake Victoria and the release of large quantities of water through turbines to generate power. This is where Egypt's interest overlaps with that of Uganda's. As a result of Uganda's hydroelectric power interests, it will likely try to prevent any projects in Kenya, Tanzania, Rwanda or Burundi that reduce the water level in Lake Victoria. Sudan and Ethiopia have never explored their potential shared interests, due to Sudan's unwillingness to antagonize Egypt. It is clear, however, that Sudan would prefer to invest in water development projects on the Blue Nile rather than the White Nile; that is, if it were free to choose without severe repercussions.

To summarize the position of the riparians: Egypt would like maintenance of the status *quo* with all of the riparians formally recognizing the water allocation rights established in the 1959 Agreement. Ethiopia would like to replace the 1959 Agreement with an entirely new agreement that recognizes the rights of the upper riparians. Sudan is interested in altering the status *quo* as well, as it would prefer to invest in water development projects on the Blue Nile, but to date has been unwilling to antagonize Egypt in order to explore this potential. The remaining countries are generally indifferent to change.

## **International Organizations and Donor Agencies**

The second level of actors within the Nile Basin is that of the international organizations and the donor community, consisting of the World Bank, the bilateral development agencies, and the specialized UN agencies. The donor community has the ability and influence to encourage a potential agreement by acting as a middle group and performing a facilitation role. Donor agencies can provide technical expertise, resources and financial support to cover start-up costs, collaborative projects, and promote confidence-building activities. However, the donor community is not neutral and comes with biases and agendas that can influence the outcomes of their program support.

In 2002, the World Bank, CIDA and the UNDP established the Nile Basin Initiative (World Bank, n.d.). To date, the total projects within the region exceed US \$2 billion (Louka, 2006). These donor agencies have continued to play a critical role within the Nile Basin Initiative (NBI) and are actively promoting a Nile Basin Agreement. The World Bank is the most prominent of all the agencies, chairing the International Consortium for Cooperation on the Nile (ICCON) and administering the Nile Basin Trust Fund (NBTF), which channels donor funding to the NBI. CIDA has also played a critical role through sponsoring the 'Nile 2002 Conference Series' in 1992, which ultimately led to the establishment of the NBI. CIDA has continued to play a major role in the Nile Basin Initiative and is currently providing approximately \$35 million (CAD) in funding for a number of NBI programs, making it the most prominent bilateral agency within the basin (CIDA, 2007b).

The Egyptians are positioned well within multilateral and bilateral agencies and have developed strong institutional support for the Egyptian position (Waterbury, 2002; Allan, 1999). The World Bank has entrenched the principle of acquired rights in its Operational Directive; this policy supports the Egyptian claim to acquired rights first and foremost (World Bank, 1995). The international community's support for the Egyptian position over the years has led to Egypt codifying its historical water allocations, as well as receiving significant foreign aid for dam projects that will allow the country to further develop its agricultural potential (Lautze et al., 2005).



## **CHAPTER 6: PROSPECTS FOR A BASIN-WIDE AGREEMENT**

### **Introduction**

The following section evaluates the prospects for reaching a basin-wide agreement governing the Nile River Basin by drawing upon the theories presented in Chapter 3: Cooperation Theories. Applying Ostrom's (2001) principles of long enduring common pool resources institutions to the Nile River Basin would indicate that the prospects for an agreement are low. However, there are inherent weaknesses in applying collective action theory within this context. These weaknesses are considered in the subsequent sections. The theory of hegemonic stability is also analyzed within the context of the Nile riparians. Finally, we draw on the factors promoting cooperation, as identified in the literature review of Chapter 2: International River Basins, to assess the likelihood of cooperation within the Nile River Basin.

### **Analysis of Collective Action Theory within the Nile Basin**

Collective action theory implies that solutions to common pool resources can exist once problems of supply, credibility, and monitoring are solved. The starting point for this argument is that resource boundaries need to be clearly defined and it also needs to be clear who is authorized to use the resource. The geographic extent of the Nile River Basin is clearly defined, well documented and verified. The institutional structures, however, are much more complex as there

are a variety of agencies and institutions at various levels and scales. Within each riparian country there are different line agencies involved in or impacted by water use and management issues, such as the Water, Land, Agriculture, and Forestry Ministries. These agencies exist at the local, provincial and national levels with overlapping roles and responsibilities that are at times in conflict with each other. Next, there are regional initiatives, such as regional economic organizations (e.g., the African Economic Community, the Economic Community of the Great Lakes, etc.), and river and lake commissions (e.g., Lake Victoria Environmental Management Program, Kagera River Basin, Nile River Basin, etc.), all of which have overlapping jurisdiction and responsibility. This makes it extremely challenging and contentious to define who is responsible for what within the Nile River Basin.

Within collective action theory, transaction costs are identified as a barrier to long-enduring institutions. Collective action can only occur when the perceived benefits of cooperation are high relative to the costs of implementing it and when the levels of trust amongst individuals are also high (Ostrom, 2001). Experience from international river basins around the world has illustrated that the financial, technological, administrative and organizational costs of setting up a river basin organization are very high (Nicol et al., 2000). This is especially true in the Nile River Basin, due to the large catchment area and number of countries involved. The larger the number of stakeholders, the higher the transaction costs.

Collective action theory also stresses the importance of formal dispute resolution mechanisms and graduated sanctions for violators of rules. The Nile

Basin Initiative does not have a formal dispute resolution mechanism; however, the organization does provide a forum for discussion where concerns can be voiced, which helps to prevent conflict and facilitate cooperation.

According to Ostrom (2003), if the larger regime recognizes the legitimacy of local resource management associations and systems, and facilitates self organization, then the probability of adapting rules over time is higher than if decisions are made by a central authority. Within the current Nile Basin Initiative institutional structure, decisions are centralized at NBI headquarters in Entebbe, Uganda. There is no interaction or recognition of local resource management groups, such as water management associations.

### **Challenges of Applying Collective Action Theory to the Nile Basin**

The preconditions for collaboration outlined in collective action theory do not appear to exist within the Nile River Basin. The government representatives from each riparian country (e.g., Technical Advisory Committee members and their advisors) and the institutions that they represent (e.g., Water Ministries) lack the technical skills and experience to coordinate actions on this scale. There are only a handful of global experts who have successfully negotiated transboundary water agreements. The Nile Basin Initiative's policy of hiring staff from member countries, however, results in a talent group of regional experts who unfortunately lack the experience required to coordinate the diverse multitude of actors within the basin to work toward a common objective or to reach a basin-wide agreement. In addition, the incentives for basin-wide collaboration to enhance

regulatory, monitoring and enforcement capabilities for riparian government representatives are not clear.

Finally, the diverse and multiple stakeholders within the Nile River Basin do not see themselves as stakeholders of the Nile River Basin; rather, they associate themselves with their particular locality, region and country. The critical importance of *collective identity*, or the recognition that a set of individuals belong to a group that is capable of acting collectively, is put forward by work conducted by Melucci (1989). This important concept is not accounted for within collective action theory, but it provides a critical opportunity for future cooperation within the Nile Basin.

The act of mobilizing various programs and projects within the Nile Basin Initiative is slowly creating a sense of community and common identity amongst NBI staff and senior government officials. There are also a number of programs within the NBI, including the Transboundary Environmental Action Project and the Confidence Building and Stakeholder Involvement Program, which are building a collective identity outside of the senior officials, through outreach activities at the local level. One of the key aspects of creating a sense of identity is how an organization frames problems. It is critical to frame problems in a way that focuses on the river basin as a relevant territorial space (Abers, 2007). This is something that the NBI is doing very well through presenting and disseminating environmental education material that focuses on the basin as a whole. Progress is still needed before there is a sense of a 'Nile Basin community'.

This, therefore, should become a specific objective of the Nile Basin Initiative and a cross-cutting theme through all of their programming.

One of the challenges in applying Ostrom's theory to the Nile River Basin is that the complexity and scale of issues within the Nile Basin are far greater than those outlined in Ostrom's research, which are small-scale common pool resources within a single country. As well, collective action theory does not consider external forces and drivers. Within the Nile River Basin, the external influence of the donor and international community cannot be overlooked. The geo-strategic importance of Egypt, that garnered substantial support and solidified her position in the donor and international community post-Cold War, has declined (Lautze et al., 2005) and is being replaced by a fear (perceived or real) of 'water-wars'. The Nile Basin has been rated as having a high potential for conflict (Goulden, Conway, & Persechino, 2008), so that the donor and international communities are exerting pressure on the riparians to reach an agreement.

### **Analysis of Lessons Learned from International River Basins**

An analysis of the factors promoting cooperation gleaned from the literature review of international river basins presents a more optimistic view of cooperation within the Nile River Basin. In fact, there are real prospects for cooperation within the Nile River Basin that could result in a basin-wide agreement. Issue-linking presents an important strategy to explore to promote a basin-wide agreement. Linking a basin-wide agreement to other benefits, including power, trade, and agriculture presents an opportunity to move past the

focus on water allocation and towards real benefits for each country. In addition, the potential for side-payments can help to balance an otherwise asymmetric relationship between upstream and downstream states: put simply, downstream states provide side-payments for upstream benefits. Within the Nile, Egypt has the greatest ability of any riparian countries to afford side-payments, while Ethiopia, as one of the poorest countries in the world, could benefit from this revenue stream.

LeMarquand's research (1977) has focused on the economic benefits from a potential agreement by dividing them into the net services and externalities from a potential agreement. Services are referred to as the benefits and costs for achieving various objectives, such as a certain water quality standard or water efficiency use. In the Nile Basin, this could provide a real incentive for Egypt as the downstream country to give up some of its allocation in exchange for adherence to these standards. The distribution of externalities is an important component of a riparian's decision to enter into an agreement. It will be important to consider whether or not a potential agreement would result in net cost or benefit externalities compared to the status *quo*. There will also be different expectations in terms of financial cooperation: some riparians will expect to receive while others will expect to pay a portion of the costs stemming from externalities. In the Nile Basin, it would be necessary for Egypt to pay a portion of the costs of producing positive effects.

Emphasis on benefit sharing as a mechanism for cooperative river basin management can include issues such as trade, immigration, environmental

protection, and hydropower. Through NBI programs, projects have been established that focus on hydropower, agriculture, flood protection and irrigation (NBI, 2007). One thing is certain: without incentives to cooperate, an agreement will not be reached. The donor community within the Nile Basin can also provide incentives in the form of funding for projects and investment opportunities.

## **Concluding Remarks**

No one theory or single variable can exclusively explain or forecast chances for cooperation within the Nile River Basin; however, many of the elements which support cooperation are in place within the basin. The institutional framework for basin-wide management of the Nile has been created through the Nile Basin Initiative. There is a knowledge base about the river system, a team of regional experts with in-depth understanding of the issues, and political will at the highest level. The institutional momentum created by the organization can help to ensure that all of the countries feel that their reputation is at stake and, consequently, that they have a vested interest in a potential agreement. The joint projects within the Nile Basin Initiative are helping to build the initial foundation of trust and confidence.

The possibility of a basin-wide agreement is dependent on the ability of the riparians to move from a rights-based doctrine to a needs-based doctrine. It is also reliant on a conflict resolution mechanism being implemented, and the Nile Basin Initiative being given enforcement power, rather than its current consensus-building mandate. The final component, which no amount of planning can address, is the variable of 'tipping moments'. The geographic and historical

assessment of the events and institutions leading up to the Nile Basin Initiative illustrate that the key pivotal points for cooperation within the basin all occurred during unique moments in history, when an external event created the right environment. Time will tell if history will provide another 'tipping moment' within the basin.



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