

# Water as a Source of Cooperation or Conflict?

A Case Study of The Grand Ethiopian Renaissance Dam



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# Abstract

In this study the probable outcome of the construction of the Grand Ethiopian Renaissance Dam is investigated. At the same time an attempt is made to derive general factors that can determine whether a common source of water leads to conflict or cooperation between states. This is done by contrasting two different theories regarding conflict and cooperation over water in a heuristic case study. The result shows that the theories in question were applicable, but have some flaws. My thesis therefore makes an effort to develop these authors' works, leading to an recognition of a coexistence between conflict and cooperation.

In addition, the result shows that, at present, the probable outcome of the dam project points in the direction of cooperation. This is supported by water's intrinsic ability to be shared between one another, which can be seen as a deciding factor for cooperation instead of conflict.

*Keywords:* The Grand Ethiopian Renaissance Dam, Nile River Basin, Cooperation, Conflict, Egypt, Ethiopia,

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# 1 Introduction

Around the world there are various examples of areas in which rivers are shared by several states. In some cases cooperation between the riparian states arises, while in other cases conflict is the more likely outcome. What determines whether a cooperation or conflict takes place is not obvious, which has led to the formation of a number of different theories in this area. In this thesis, I will attempt to contrast two theories on the phenomenon of conflict and cooperation regarding water issues. By examining a specific case and contrasting it against two theories, I aim to find an answer as to which scenario is most likely to happen in my examined case. In addition, I hope to be able to say something about what it is that determines whether conflict or cooperation is the result of water issues.

In early 2011, Ethiopia announced that in the near future it would begin construction of The Grand Ethiopian Renaissance Dam on the Blue Nile in the Benishangul-Gumuz Region. The very same year construction began. For Egypt, the building of the dam will likely have major implications. 99% of its population lives along the Nile and almost all the fresh water in the country is pumped from its waters. Since 1959, Egypt along with the Sudan has had an oligopoly on the Nile water, although the two nations are located downstream. This is something that the upstream nations have perceived as extremely unfair and tried to change. One part of this change is the Ethiopian construction of The Grand Ethiopian Renaissance Dam. Since both Egypt and Ethiopia are regional great powers, and are currently undergoing major changes (e.g., the implications of The Arab Spring and the current Ethiopian Economic growth rate) I find it interesting to investigate whether the dam construction is a source of cooperation or conflict between the countries. In other cases around the world nemeses have managed to cooperate over common water resources (for example Pakistan and India regarding the Indus). To me this is, at least at first, somewhat of a puzzle and a profoundly interesting phenomenon that I want to investigate further.

## 1.1 Issue

Based on the issues described above, the main purpose of this thesis is to contrast the two theories on conflict and cooperation in water issues with regard to my selected case. By contrasting the two theories with my specific case I hope to find an answer to the question of which scenario that is the most likely outcome in this case. My hope is that I will also be able to find and present general factors that determine whether conflict or cooperation is the result of water issues.

## 1.2 Formulation of Research Question

- What is, at present, the probable outcome of the construction of The Grand Ethiopian Renaissance Dam, with regard to Egyptian-Ethiopian relations?
- What are the deciding factors that determine whether a common source of water leads to conflict or cooperation between states?

### 1.2.1 Definition of Concepts

In this thesis I wish for my definition of *conflict* to be understood as ranging from a direct military confrontation to a diplomatic controversy. My definition of *Cooperation* is a situation of working or acting together for a common purpose or benefit. A *common source of water* is by my definition a river, lake or a stream which is shared by two or several states. Throughout the thesis, for the convenience of the reader, I chose to call Wolf's model *the four-stage model*.

## 1.3 Method and Theoretical Framework

The thesis will be designed as a heuristic case study, which means that I am using existing theories. At the same time I have further development of the theories in mind. I want to test which one of the theories that best applies to my specific case, and also to detect some of the weaknesses the theories may contain. Hopefully my result will enable me to identify some factors that can explain why and when cooperation and conflict occur regarding common water resources.

I have chosen to use two theories in this thesis. The first one is the four-step model that derives from the research of Aaron T. Wolf. The second theory is the ABC-model that originates from the Norwegian researcher Jon Martin Trondalen.

## 1.4 Limitations

In many areas and regions around the world states cooperate and argue over common water resources. This gives a need of limitations in my thesis. In this thesis my focus is on the Nile and specifically the relations between Egypt and Ethiopia. This is mainly because this instance is a very recent case affecting many people. The Sudan could obviously also have been one of the analytical units in this study. But since the major players are Egypt and Ethiopia, I find it more relevant to focus on these states. Besides this, Egypt and the Sudan have decided to act together in all issues regarding the Nile (Jägerskog, 2012), (Waterbury, 2002, p. 80). Thus, the Egyptian standpoint can be said to represent the Sudanese

as well. Confining myself to this specific case also gives me the opportunity to go deeper into the events, and thus hopefully find variables in order to draw general conclusions on the issue.

## 1.5 Material

The material in this thesis consists of both primary- and secondary sources. The material for the theory section is mostly derived from the book *Conflict Prevention and Resolution in Water Systems*. I make use of the chapters written by Aaron T. Wolf and Jon Martin Trondalen, both prominent researchers in the area of cooperation and conflict regarding common water resources. The section regarding the method also consists of theoretical literature by renowned authors in the field. The background is mostly derived from John Waterbury's book *The Nile Basin*. Waterbury is a well-known scholar who has great knowledge of the region and the politics in the Nile Basin. This book together with peer-reviewed articles gives the background section a good foundation.

The analysis consists mostly of primary sources in form of interviews with people who are familiar with the issue. This is supplemented by relevant articles. The case I have chosen to investigate is a very recent one. As a result of this, there is no theoretical literature available. This has been compensated by the interviews and articles. Since I wanted to have a broad range of interviewees I have chosen to interview people from both the Egyptian (Second Secretary & Consul Marwa Ahmed Lasheen) and the Ethiopian embassies (Consul General Mebrat Beyene Abay) in Sweden as well as people from SIWI (Stockholm International Water Institute, Dr. Anders Jägerskog) and the Swedish Foreign Ministry (Former Ambassador and Special Envoy for the Horn of Africa, Marika Fahlén). The interviews are conversational in nature meaning that I ask open-ended questions, and then let the interviewees speak freely. I am aware of the risk of interviewer effect (Esaiasson et al, 2007, p. 300) and that the interviewees may not necessarily be experts on the specific problem. I am also aware of the fact that the Egyptian and Ethiopian diplomatic missions are part of the dispute. Nevertheless, I find that the interviews give me a deeper understanding for my case, and a perspective that is missing in the literature.

## 1.6 Outline

The following chapter will be a deeper discussion of the theories that I have chosen to use in my thesis. Following this, a chapter regarding my method will be presented in which I motivate and discuss my choice of case study. The fourth chapter will cover the empirical background of Egypt and Ethiopia's relationship to each other, and their respective relationships with the Nile. In addition to this

background information on the dam construction and existing agreements will be presented. An analysis part will then follow, in which I connect the theoretical part with the background and then analyze the situation. In chapter six, my conclusions will be presented as well as an answer to my research questions. This is followed by a list of references and an appendix with maps showing the countries and the Nile Basin.



## 2 Theoretical Framework

In this section the theories of the thesis will be presented. At first, we will look into the four-stage model to better understand why it is likely that the construction of The Grand Ethiopian Renaissance Dam will not lead to a conflict between Egypt and Ethiopia. The ABC-model follows the four-stage model, and presents the parameters that tell us why conflict may be a more likely outcome of the dam construction.

### 2.1 The Four-Stage Model

The first of the two theories that I employ in this thesis is the four-stage model. It derives from Aaron T. Wolf's research, who is a prominent scholar in the field of cooperation and conflict over common water resources. I will explain Wolf's four arguments against the plausibility of future conflicts over water. The arguments are as follows: (1) an historic argument, (2) a strategic interests argument, (3), a shared interests argument and (4) an institutional resiliency argument (Wolf, 2002, p. 187).

By looking at history, Wolf presents evidence against the likelihood of conflict over water. He states that in recent times there is a growing literature which describes water as a future case of interstate warfare. Some authors even claim that "a number of conflicts linked to freshwater are already apparent", and that "history is replete with examples of violent conflict over water" (Wolf, 2002 [1998], p. 187). The only problem with this literature and these statements is, according to the author, the complete lack of evidence. Wolf, in cooperation with other researchers, has put together a dataset which identifies 412 water-related crises for the period of 1918-1994. The dataset only contains disputes which were considered to be international disputes by renowned scholars (Wolf, 2002 [1998], pp. 188-189). The dataset gives results that are very clear: only seven incidents have occurred, and in three of these not a single shot was fired. As far as Wolf can determine, there has never been a single war fought over water (Wolf, 2002 [1998], p. 189). However, this is not saying that water-related violence is absent from history, but that these events instead tend to be on a subnational level. On a national level, one should instead look upon water as a source of cooperation instead of conflict. Historically over 3600 water-related treaties have been signed which makes Wolf ask the question "why has so little international violence (with regard to water issues) taken place?" (Wolf, 2002 [1998], p. 192).

The strategic interests argument has its main focus on the goal of the potential conflict. To launch an attack, the aggressor must be both downstream and the

regional hegemon, since a weaker state would have to be reckless to launch an attack against a stronger opponent. By launching an attack, the aggressor must also take into consideration the outcome of the attack. The outcome of an attack on a dam or on a similar project could very well lead to a worse outcome for the aggressor than for the attacked. Furthermore, the both states fighting against each other cannot be democracies since democracies do not wage war against one another. Finally the international community would have to refuse to get involved in the conflict (Wolf, 2002 [1998], p. 193). According to Wolf, this is highly unlikely.

Instead of seeing water as a potential catalyst for conflict, it should be seen as a peacefully shared resource among states. It is in the interest of all parties that this vital resource is used for the common good. Otherwise hostile riparian states also tend to act more modest against one another regarding water issues. A dam could be of benefit to both the upstream as well as the downstream countries, which states are usually aware of. These shared interests are best clarified by the great number of treaties which have been signed over the years (Wolf, 2002 [1998], pp. 193-194).

The treaties, when they are finally established, also tend to be very resilient over a long time period. There are many examples of water-related treaties that have survived despite the fact that the signatory states have been at war with each other. For instance the Indus River Commission has survived two wars between India and Pakistan, and the Mekong Committee has been operating since 1957. A full-scale war is enormously costly, and the general conclusion is that, in the end, a war over water would not be worth the cost (Wolf, 2002 [1998], pp. 194-195).

## 2.2 The ABC-Model

In the study of conflict and cooperation regarding common water resources, there is a fairly large literature which focuses on water as a potential conflict creator. One of the authors who argue for this plausibility is Jon Martin Trondalen, who is the creator of the ABC-model. I will present Trondalen's three parameters which represent his argument for the likelihood of future conflicts over water. The parameters are as follows: (A) incompatible goals related to, control over, and unsustainable use of international river systems, (B) externalities created by utilizing the international river systems and (C) conflicts arising as a result of externalities from other activities affecting the river systems (Trondalen, 2002 [1992], p. 116).

Turning the focus towards geography, the tensions that shared water might cause between states become more apparent. The access to water is more or less determined by the location of a country, since a downstream country is solely dependent on their upstream neighboring countries for their own water consumption. The water can in turn be divided into consumptive and non-consumptive uses. Examples of non-consumptive use are for instance navigation and commercial fishing. These two variables might be underlying cause of

conflict between states (Trondalen, 2002 [1992], p. 117). According to Trondalen it is equally likely that a consumptive use leads to conflict between states. The consumptive use consists of variables such as domestic and municipal use (e.g., the larger the population, the less water per capita), irrigation (in developing countries development of agriculture has the highest priority, because of its importance to the state economy), industrial purposes (almost all production requires water) and hydroelectric power generation (energy is equally important in developing a well functioning industry) (Trondalen, 2002 [1992], pp. 118-121). These variables might very well spark conflicts between states. However, Trondalen considers the variable *water diversion, dams and reservoirs* to be the most important conflict source. This is partially because it makes states increase their access and control over water in order to satisfy their needs, but also because all water projects inevitably affect the countries located downstream (Trondalen, 2002 [1992], p. 122-23). Large-scale dams usually have several main purposes. They might be constructed in order to increase a state's hydroelectric power generation, or to regulate the water flow so that water is available when it is needed. This, in turn, affects the downstream countries. Trondalen states that conflicts over water can be directly related to dam construction since these kinds of projects lower the flow of water to the downstream countries and negatively affect them (Trondalen, 2002 [1992], p. 124).

The second parameter, externalities from utilizing river systems as causes of conflicts, also consists of different variables. Here to the author presents variables which might cause conflict over water. The featured variables are: *irrigation* (salinity as a result of irrigation, negatively affects the water quality in the downstream country), *industrial sector* (which might cause water pollution downstream), *erosion and siltation* (erosion upstream leads to land slips which might impair storage), *resettlement* (water projects inevitably force people to move) and *health* (dam-construction in warm climates might increase the risk for the proliferation of water-related diseases). In this section Trondalen highlights a parameter called *water diversion and dam and reservoir projects* which, in the author's opinion, might be a source of water-related conflict. Even if the intentions of a dam construction are good-natured, the environmental effects of such a project are invariably huge. A dam construction normally affects a very large area and might drain or flood a country's water supply (Trondalen, 2002 [1992], pp.125-127).

Trondalen's third parameter focuses on externalities from other activities affecting river systems as causes of conflict. Here the author presents factors that might increase the danger of conflicts as water quality decreases resulting from different activities within a state. *Pesticides* (ecological problems that exists in many developing countries because of the usage of persistent pesticides), *soil erosion and siltation of water sources*, *wildlife* (different national views on how to protect wildlife from water projects might cause conflicts and problems) and *social implications and economic aspects* (negative effects that might arise as a result of dam construction and need to be minimized) (Trondalen, 2002 [1992], pp. 128-129). According to Trondalen, conflict management faces tough challenges in order to prevent conflicts from occurring, since the riparian states'

respective water policies must be correlated to a high degree in order to function. Often a state's policy is a reflection of that particular state's location in the river system (Trondalen, 2002 [1992], p. 130), making conflict a more likely outcome than cooperation.

# 3 Methodology

The method I have chosen to use is a heuristic case study, with both a theory consuming and a theory testing approach. I have chosen one unit of analysis – the Nile and the Egyptian-Ethiopian relationship – in order to answer my research questions.

## 3.1 Heuristic Case Study

### 3.1.1 Research Design

In choosing a case study as the method of use in this thesis, one receives a palette with different types of case studies. In my thesis I will use a mix of the different types. First I will conduct a theory consuming case study. Second, I will test which one of my theories that best applies to my case, which hopefully will lead to a development of the theories. Often the theory consuming and theory developing approaches are mixed together in the same study, thus they are seldom distinguished from one another (Svensson & Teorell, 2007, p. 52). In my opinion, the heuristic case study is a mix between the theory consuming and the theory developing approaches. I will not make a distinction between these two approaches in this thesis either. The more dominant theory in my study will probably not reveal itself until the research is completed.

To conduct my case study I will use process tracking, which means that I will conduct a meticulous review of my case. One of the ambitions with the thesis is an attempt to find mechanisms and determine what decides whether or not states cooperate over common water resources. To be able to conduct a process tracking it is of great importance that one has strong theories. The theories should be able to point out the crucial explanatory factor, and also allow the identification of the mechanism making x cause y. The more implications that are obtained from the theory and then tested, the higher the likelihood that the explanation I find in the end will be the correct one (Svensson & Teorell, 2007, p. 247). In my opinion, I have found useful theories with distinct explanatory factors, which enables the process tracking. The chosen theories contain a number of identifiable parameters which can be operationalized in a simple way. Of course, the ambition is that my method should give the thesis intersubjectivity which means that an outsider can understand, reconstruct and criticize my work (Badersten, 2006, p. 12)

### 3.1.2 Case Selection

When selecting cases for a case study, one uses different strategies. The strategies could be to find cases which are generalizable, cases that are crucial/deviant, cases that contain variations or cases that supplement an extensive result (Svensson & Teorell, 2007, p. 222). In my thesis I have discovered a case which I find both important and crucial. In the area of cooperation and conflict regarding water issues, the Nile is a very relevant and essential case since it greatly affects the people and the states within the region. The Nile itself is the world's longest river and 400 million people live along its shores (The Economist, 2010). My case is also relevant in another aspect. Egypt, the regional hegemon (Casção, 2008, p. 15, 18-19) is located downstream which is another reason to investigate this case. In similar cases, the strongest state very often tends to be located upstream (e.g. India and Bangladesh). However, in this case, Ethiopia has begun construction of the dam upstream, which may very well affect Egypt. The fact that the tables are turned in this case makes it interesting and crucial to investigate the issue further.

### 3.1.3 Limitations to Methodology

There are, of course, problems with all methodologies in the social sciences. But, what are biggest advantages and disadvantages with using a case study? The way I see it, the biggest disadvantage that the case study contains is that it can be hard to generalize results from it (Yin, 2007, p. 17). It is also hard to protect the case study from possible measurement errors. The small number of units can be a disadvantage, which I am aware of. Because of this, it is important to prepare oneself for the disadvantages. In order to protect the study against the possible lack of generalization one must be careful and restrained. I will first and foremost try to explain what the most likely outcome between cooperation and conflict is when it comes to the construction of the Grand Ethiopian Renaissance Dam. If it turns out that my results can be generalized to similar cases, I will do this. However, I want to be very clear that my generalizing ambition is just an ambition, and not the explicit goal of this thesis. It can also be hard to guard against possible measurement errors. My hope is, that by using the case study, I will understand my case to such an extent that I will be able to avoid potential measurement errors.

Despite the disadvantages with the case study, it also has advantages that I would like to highlight. The case study is a fantastic option when it comes to developing theories. It also gives the thesis good depth. The case study enables an analytical openness, which allows changes to be made to the thesis in the final stages of the work (Svensson & Teorell, 2007, p. 240). This flexibility appeals to me. Another point in doing the case study is the strategic selection of cases, which protects against the statistical rule of selection bias (Svensson & Teorell, 2007, pp. 224-225). Obviously, a more quantitative study could lay the ground for a possible generalization. But since I primarily want to explain my specific case, I hold that my question is best answered by a thorough qualitative study.

## 4 Background

### 4.1 Egypt and the Nile

The intimate relationship between Egypt and the Nile is one of the oldest and most well known in the history of mankind. The Egyptian history is closely tied to the Nile, making it nearly impossible to imagine Egypt without thinking about the Nile (Lasheen, 2012). Its mythological significance for Egypt has not diminished in modern time since 99% of its population lives along the Nile, and 95% of all the water used in the country is derived from the very same river (Stetter et al., 2011, p. 450). Egypt is also the furthest downstream Nile riparian. As a result of location and climate, Egypt basically does not contribute anything to the flow of the Nile, despite the fact that it consumes about 80% of the total Nile water (Wu, 2006, p. 3). As a result of this, Egypt is the most dependent nation of all of the Nile riparians (Waterbury, 2002, p. 4), and any project or measure taken upstream will undoubtedly have some affects for the nation.

By focusing on Egypt's modern time relationship with the Nile, one can sense the complexity that surrounds the construction of the Grand Ethiopian Renaissance Dam. During colonial times Egypt, the Sudan and many other riparian states of the Nile were controlled by Great Britain. The British were thus the dominant power in the region, and their interests affected all other countries bordering the Nile. As early as 1902 a treaty was signed by the British and the sovereign nation of Ethiopia. This treaty stipulated that Ethiopia should to not impede the flow of the Nile (Waterbury, 2002, p. 62). The first agreements stipulating the use of the Nile water were reached in 1929, when the Nile Waters Agreement was signed between the British colonizers and the Egyptian Government (Swain, 1997, p. 677). This agreement basically gave Egypt a monopoly over the water resources from the Nile, owing to historical rights (Swain, 1997, p. 677). The Nile Waters Agreement lasted until 1959 when the independent states of Egypt and the Sudan reached a new agreement on how to share the waters of the Nile. This agreement, which did not include Ethiopia, stipulated that Egypt and the Sudan would be granted a certain amount of water every year (Swain, 1997, p. 667). Basically the treaties from 1929 and 1959 gave Egypt (and the Sudan) the right to use all the water from the Nile (Jägerskog, 2012). These treaties still endure today. As we will see, these agreements have been perceived as highly unfair by the other riparians and have never been fully accepted.

## 4.2 Ethiopia and the Nile

Ethiopia, located further upstream compared to Egypt, has a different relationship towards the Nile. Today Ethiopia is not dependent of the Nile, but it would like to become more involved in it (Waterbury, 2002, p. 5). The Blue Nile originates in Ethiopia, and this single river contributes with 80-85% of the total water flow into the Nile. Due to this, it is easy to see Ethiopia's potential for influence over the hydropolitics in the region (Waterbury, 2002, p. 4). The country has long had an ambition to do something with its resources in the Blue Nile (Abay, 2012).

One result of the historical agreements reached by Egypt and the Sudan in 1929 and 1959 (and the regime these agreements established in the region) has prevented Ethiopia from using its resources (Waterbury, 2002, p. 5). Since the 1950s, Ethiopia has been skeptical of many Egyptian initiatives in the Nile Basin. This has not changed despite the turmoil in the country in the 1970s, 80s and 90s. Ethiopia has often viewed the Egyptian projects and initiatives with skepticism. Sometimes this has been for good reasons, sometimes for bad reasons. They have feared that projects under Egyptian leadership would only halt the development of Ethiopia's irrigation and hydropower (Waterbury, 2002, p. 78).

This deadlock lasted until 1992 when the *Technical Cooperation Committee for the Promotion of Development and Environmental Protection of the Nile Basin*, Tecconile, was initiated. Six of the Nile riparians became members (Egypt included), and four observers (Ethiopia included) (Küng, 2003, pp. 2-3). A new government was established in Ethiopia under the leadership of Meles Zenawi. The main objective of this government was to get Ethiopia back in the international arena. One step in doing this was through cooperation in Tecconile. In the years following Tecconiles beginning, Ethiopia's main strategy was to work for an agreement based on an equitable use of the Nile's water. The Panel of Experts was formed in 1995 as an Ethiopian initiative. However, the outbreak of several conflicts in the riparian states halted this initiative (Waterbury, 2002, p. 78-79). It was not until the late 1990s that a new regime was established in the basin which will be presented under the following heading.

Before moving on, I think it is important to understand the different relationships that exist in the Nile Basin. The regional hegemon (Cascão, 2008, p. 15), Egypt, wants to protect the 1959 agreement supported by the Sudan. Ethiopia, on the other hand, wants an equal allocation of the Nile's water. Between these states stands the other riparians who do not want to annoy Egypt, but at the same time are unhappy with the agreement from 1959 (Waterbury, 2002, p. 80-81).



### 4.3 The Nile Basin Initiative and the Cooperative Framework Agreement

After the old treaties between Ethiopia and the British (Waterbury, 2002, p. 62), a bilateral agreement between Egypt and Uganda was established. However, this agreement as well as later ones (e.g., the 1967-agreement between some Nile riparians) did not bind the states to a deeper extent of cooperation (Mekonnen, 2010, p. 423). It was not until the late 1990s that an initiative was established that managed to include all the Nile riparians: the Nile Basin Initiative (NBI). The main purpose of the initiative is to "achieve sustainable socio-economic development through the equitable utilization of, and benefits from, the common Nile Basin water resources" (Mekonnen, 2010, p. 425), (Abdalla, 2008, p. 2035). From the beginning, this project has been supported by external institutions such as the World Bank. The NBI began as a discussion forum where the member states could meet and negotiate issues regarding the Nile waters and other technical matters. This cooperation later deepened and many different programs and investments were initiated as a result. Indeed, when thinking about the historical lack of cooperation between the riparian states, the NBI was a milestone with somewhat unexpected success (Mekonnen, 2010, pp. 426-427).

However, the cooperation has not been without its problems (Küng, 2003, p. 3). When some of the most important and sensitive issues, such as water security, are discussed, these negotiations often result in a lack of compromise (Mekonnen, 2010, p. 427). This deadlock can be seen as a result of Egyptian-Sudanese unwillingness to leave behind the previous colonial treaties (Mekonnen, 2010, p. 428). The stalemate has especially annoyed some of the upstream riparians who, in 2010, signed a Cooperative Framework Agreement (CFA). The main purpose with this agreement is the redistribution of the Nile river water. 90% of the water that had previously been given to Egypt and the Sudan would be divided more equitably among the other Nile riparians (Stratfor, 2012). This is something that Egypt and the Sudan (for obvious reasons) have greatly opposed and the question is yet to be resolved. What could make Egypt and the Sudan accept the Cooperative Framework Agreement is a return to the historical treaties again – which is something unthinkable for the upstream riparians. It is also important to note that the implementation and the construction of the Grand Ethiopian Renaissance Dam is something that is not included in NBI, CFA or any other bi- or multilateral agreement (Jägerskog, 2012).

### 4.4 The Construction of the Grand Ethiopian Renaissance Dam

In the spring of 2011, Ethiopia announced that it would start the construction of the Grand Ethiopian Renaissance Dam. The construction is planned to be

completed by 2015 (Abay, 2012) and can be seen as the pet project of former Prime Minister, Meles Zenawi. The dam is not (as mentioned above) a part of the NBI (Jägerskog, 2012). That Ethiopia initiated this dam construction is not in itself very surprising. Previously, the Ethiopians have constructed other dams and hydroelectric power stations in different rivers in their country (Stratfor, 2012). Good examples of this are the Gilgel Gibe I Power Station and the Gilgel Gibe 2 Power Station located on the Omo River (Jägerskog, 2012). A third power station is also part of the Ethiopian government's future plans (Abay, 2012). However, these constructions cannot be compared to the magnitude of the Grand Ethiopian Renaissance Dam. The dam, when finished, will have the potential to generate 6000 megawatts of electricity. In comparison to this, the Hoover Dam in the U.S. has a capacity to generate 2080 megawatts of electricity. The Grand Ethiopian Renaissance Dam will be one of the 10 largest dams in the world (Stratfor, 2012). Ethiopia, with one of the largest economic and population growth rates in Africa (Fahlén, 2012), sees the construction of the dam as a way of developing the country and transforming itself from poor to a rich (Abay, 2012).

Besides the magnitude of the construction, the dam is also unique in other ways. Instead of securing the financing before the project started, the Ethiopian government decided to borrow as much as possible of the money needed from its people. This is done by selling special dam bonds, and the project is therefore funded as it progresses (Jägerskog, 2012), (Stratfor, 2012). To date, 13% of the dam has been completed (Abay, 2012). Egypt's (and the international community's) greatest construction concerns surround the filling of the dam (Jägerskog, 2012), (Stratfor, 2012). The time it takes for the dam to fill is dependent on the rainfall that follows in the years after construction is completed. This means that Egypt maybe will have less water, which is a great concern (Lasheen, 2012), (Stratfor, 2012). Exactly how the dam should be filled is something that both parties have yet to agree upon (Jägerskog, 2012), (Stratfor, 2012). In 2012, the Nile Tripartite Committee, NTC was formed in order to look deeper into the positive and negative outcomes of the construction. The panel is comprised of two representatives from each of the three involved countries (Ethiopia, Egypt and the Sudan) in addition to four international experts (Jägerskog, 2012), (Yousif, 2012). The panel is expected to present its conclusions in May 2013 (Tekle, 2012).

# 5 Results and Analysis

## 5.1 The Four-Stage Model

*According to Aaron Wolf's four-stage model there is a low plausibility of future conflicts regarding water. Wolf presents four different arguments that advocate cooperation: (1) an historic argument, (2) a strategic interests argument, (3) a shared interests argument and (4) an institutional resiliency argument.*

### 5.1.1 The Construction of the Dam and the Four-Stage Model

The historical argument that Aaron Wolf puts forward in his model is indeed a strong argument against the plausibility of future conflicts over water. Wolf's previous research has shown that conflict over water is extremely rare. As far as he can determine, there has never been a single war over water. The conflicts that do occur as a result of common water resources tend to be on a subnational level, and not direct between states (Wolf, 2002 [1998], pp. 189-192). Looking at the history between Egypt and Ethiopia there has not been any violent conflicts between the states, though the diplomatic situation have at times been strained resulting from water issues (Fahlén, 2012). From the Egyptian point of view Ethiopia has always been an important neighbor, and the relationship between the states dates back to ancient times (Lasheen, 2012). However, the historical treaties from 1929 and 1959 are today seen as extremely unfair by the Nile riparians with the exception of Egypt and the Sudan. As mentioned earlier these treaties gives Egypt and Sudan almost exclusive access to the Nile water, the CFA is a direct result of this (Stratfor, 2012). It is obvious that today a diplomatic conflict exists between Ethiopia and Egypt as a direct result of the construction of the Grand Ethiopian Renaissance Dam (Jägerskog, 2012).

In the strategic interests argument Wolf puts focus on another parameter that explains why it is likely that common water resources lead to cooperation. First and foremost, the aggressor that launches the attack must be both a regional hegemon and located downstream. Otherwise the attack will not pay off (Wolf, 2002 [1998], p. 193). This must be considered to be the situation in this case. Egypt is located downstream and is widely recognized as the regional hegemon (Casão, 2008, p. 15, 18-19), even if Ethiopia is currently developing at a great pace and has a stable economic growth rate (Fahlén, 2012). The outcome of an attack is also likely to worsen the situation for the downstream attacking state. An attack on a dam construction or a similar project could result in massive floods (Wolf, 2002 [1998], p. 193). Egypt is today viewing the construction of the dam

in the light of "not a conflict". The dam could in the end be beneficial for both Egypt and the region as a whole (Lasheen, 2012). From the Ethiopian viewpoint the construction is seen as a source of cooperation in the region. The construction should not affect Egypt in a negative way (Abay, 2012).

According to Wolf, water should be seen as a source of cooperation instead of conflict. States tend to realize the benefits of cooperation on water, and a dam can be of benefit for both the upstream state as well as the downstream state (Wolf, 2002 [1998], pp. 193-194). Presently, there are many indications that the situation is such in this case. The Ethiopian standpoint is, as mentioned, that the dam construction is to be seen as a move towards a more cooperative relationship in the Nile Basin. The main problem is, according to Consul General Mebrat Beyene Abay, the inaccurate perceptions that exist at the time. To address these misconceptions a panel of experts (the Nile Tripartite Committee, NTC) has been appointed to further investigate the situation (Abay, 2012). From the Egyptian point of view the NTC was the best thing to initiate at the moment. Egypt has expressed support for the project as long as its water security is not being infringed upon (Lasheen, 2012). According to Dr. Anders Jägerskog we will see cooperation in the committee, but there will also be some divisive issues. Ethiopia will undoubtedly complete the construction of the dam (Yousif, 2012), which is something that both Egypt and the Sudan realize. As will be explained later, this might in turn lead to greater cooperation in the future (Jägerskog, 2012).

Wolf's fourth argument, the institutional resiliency argument, cannot be fully applied to this case. The author's idea that treaties tend to be very resilient over longer time periods once they have finally been established (Wolf, 2002 [1998], pp. 194-195) is certainly a valid assumption. However, the dam construction is today not part of any treaty or agreement between Egypt, Ethiopia or any other state (Jägerskog, 2012). The lack of treaties is something that both sides acknowledge (Abay, 2012), (Lasheen, 2012). Besides this the NBI and the CFA view matters differently at the moment, and can in my opinion not be seen as stable sources of cooperation. This can be contrasted with the NTC to which both parties attach great hope (Abay, 2012), (Lasheen, 2012). A statement from the committee that appeals to both parties could undoubtedly form the basis of greater cooperation between the states in the future (Abay, 2012), (Lasheen, 2012). The final result of the committees' work is nevertheless yet to be seen.

### 5.1.2 Discussion

One may conclude that Aaron Wolf's four-stage model has a lot to bring to the table when it comes to understanding the most likely outcome of the construction of the Grand Ethiopian Renaissance Dam. By applying the four arguments on the dam construction one can, in my opinion, see that it might very well in the end lead to cooperation between the states. Historical evidence is hard to argue against, especially since Egypt and Ethiopia do not have any history of open hostilities (Fahlén, 2013). In contrast to this, it is important to realize that the dam

construction, and its possible implications, means that the potential for conflict may be higher than before.

The empirical evidence I have found speaks in favor of the strategic interests argument in Wolf's theory. Both the involved parties and the experts see a potential military conflict between the two states as highly unlikely (Abay, 2012), (Jägerskog, 2012), (Lasheen, 2012). The involved parties instead seem to realize the message of Wolf's third argument which is that water is a source of cooperation and not of conflict (Wolf, 2002 [1998], pp. 193-194). We can see this since both Egypt and Ethiopia (and the Sudan) have accepted the NTC initiative (Stratfor, 2012). Neither Egypt nor Ethiopia have closed the door on a potential deeper cooperation in the future, particularly when it could be beneficial to both countries (Abay, 2012), (Lasheen, 2012).

However, there are no treaties between the states regarding the Grand Ethiopian Renaissance Dam today (Jägerskog, 2012). This is of course a weakness, and as a result of this, Wolf's fourth argument cannot be fully brought to bear on this case. I think it is important to keep in mind that both parties have attached great hopes to the NTC. But, what if the outcomes of the committee are not appealing to one, or both of the parties? Will they still follow the committee's recommendations and results? Despite the prosperous initiation of the committee, there are still tough questions that need to be solved.

One weakness with the four-stage model is the lack of a clear definition for conflict. My feeling is that only direct, violent altercations between the states are seen as conflicts by the author. This prevents the inclusion of such things as diplomatic conflicts. These diplomatic conflicts may ultimately affect each state very negatively. One example of this is through economic sanctions.

When one excludes the possibility of low level conflict, this leads to a second weakness. In my opinion, it is possible that both conflict and cooperation may coexist. This is possible since a conflict does not necessarily need to be military in nature, but could be a diplomatic one. In the case of Egypt and Ethiopia the conflict tends to be diplomatic. This does not need to be an obstacle for cooperation. As we have come to see the involved parties cooperate in the NTC at present - despite the current official situation. This is maybe the strongest evidence that conflicts and cooperation may coexist. But without a clear definition for conflict, it is difficult to envision this.

Turning our focus from Wolf's theory of cooperation, we will now focus on Jon Martin Trondalen's more conflict-oriented ABC-model. This gives us a good contrast and an interesting view of another possible outcome of the dam construction.

## 5.2 The ABC-Model

*Trondalen's ABC-model gives one a deeper understanding to why it is likely that we will see conflict over water in the future. The parameters he presents are: (a) incompatible goals related to, control over, and unsustainable use of international river systems, (b) externalities created by utilizing the international river systems and (c) conflicts arising as a result of externalities from other activities affecting the river systems.*

### 5.2.1 The Construction of the Dam and the ABC-Model

When viewing my case through Trondalen's more conflict colored lens, one get a different approach on the potential outcome of the construction. Trondalen's first parameter, incompatible goals related to international river systems, is a parameter which carries a number of underlying parameters. It is obvious that a downstream country is highly dependent on their upstream neighbor for their own water consumption - so to in this case. If the states cannot agree upon how the water should be shared between each other, it is possible that activities such as irrigation and hydroelectric power generation may spark disputes between the states (Trondalen, 2002 [1992], pp. 117-121). However, the most important conflict source is, according to the author, undoubtedly projects such as water diversion, dams and reservoirs. The downstream state will inevitably be affected by any upstream water project. Dam construction often tends to lower the flow of water to the downstream states (Trondalen, 2002 [1992], pp. 122-24).

Starting out with the cooperation between the states, there is no doubt that there is a lack of agreements and treaties in this specific case. Even if the NTC, as mentioned earlier, is established the result of this cooperation is yet to be seen. Undoubtedly, Egypt (and the Sudan) is very keen on the dam being constructed the right way. If the dam would burst, this would result in a major disaster for the downstream states (Jägerskog, 2012). The biggest task is to coordinate the respective states water policies. This need to be done in order to avoid the incompatible goals that otherwise might come to light. This is not an easy task since it requires compromises and understanding. From the Egyptian side it is important to emphasize that the construction of the dam is not a one-sided Ethiopian exercise, but something that needs to involve all parties. This is best done by seeking cooperation, and the NTC is a great start (Lasheen, 2012). In order to not affect the flow downstream in a negative way, the Ethiopians are constructing the dam in a way that should appeal to all states. The intention is to make sure that the dam in the end will be of benefit for all involved parties (Abay, 2012).

The second parameter, externalities created by utilizing the international river systems, can also be applied in this case. Even if the intentions with a water project are sensible, it might in the end effect the region in a negative way. Salinity, pollution, erosion and resettlement of people might be the final outcome

of such an undertaking. Even worse, according to Trondalen, is the fact that a dam construction may affect large areas by draining or flooding a state's water supply. In the end, the effects on the environment from this type of water projects are usually huge (Trondalen, 2002 [1992], pp. 125-127).

The most critical situation in the construction of the Grand Ethiopian Renaissance Dam is undoubtedly the filling of the dam. Depending on how much it rains, the rate of this might vary a lot. If the following years have heavy rain, it might take no more than two years. If it is a year with long dry periods and almost no rain at all, this might take even longer (Jägerskog, 2012). The amount of water in the dam is also the Egyptians' greatest concern. Until the dam gets filled, this might mean that the normal flow of the Nile could vary greatly – meaning less water for Egypt. And, as we have come to learn, the greatest Egyptian issue is its water security (Lasheen, 2012). However, the construction of the dam may lead to better regulation of the water flow (Jägerskog, 2012).

From the Ethiopian side there is an awareness of the problems that might occur when the dam is being filled. To deal with this, the filling operation will be conducted in a responsible way, without blocking the water. Exactly how long it will take to fill the dam will, as mentioned, depend on the amount of rain that falls. In the end, it must be a win-win situation for all the parties involved. Blocking the water for the downstream riparians is something that you simply do not do, primarily for two reasons. First and foremost, it is not internationally accepted. And secondly it is not fair (Abay, 2012). It is of course impossible to accurately predict how the critical filling operation will transpire, and how this might influence salinity, pollution and erosion in the area. But at this time, during the construction of the dam, a discussion is taking place between the parties to solve issues such as those mentioned externalities.

By concentrating on the externalities one get a deeper understanding to why a conflict may occur. Pesticides, soil erosion and other social implications are externalities that may be the result of careless water utilization. This might harm downstream riparians. An even more important variable is the lack of correlation between states policies on how to utilize common water resources. This lack of correlation might in turn cause the above mentioned externalities (Trondalen, 2002 [1992], pp. 128-130). In the case of the construction of the Grand Ethiopian Renaissance Dam, it is not obvious how Egypt and Ethiopia should cooperate on questions such as utilization. The dam is not part of the NBI, the CFA or any other agreement/treaty (Jägerskog, 2012). Here, one must admit that the initiation of the NTC is something promising and a small step in the direction of cooperation. The fact that the dam is not part of the NBI may, strangely enough, make possible a deeper cooperation. This is especially true since the Egyptians have begun to realize that Ethiopia will complete the construction of the dam with or without their assistance. It is unlikely that the Egyptians will let this happen, since they have to cooperate in order to influence the events on the Nile (Jägerskog, 2012). Only by influencing the events, Egypt may to protect itself against the possible externalities that Trondalen puts forward in his third argument.

## 5.2.2 Discussion

Trondalen's ABC-model gives one three useful and sensible parameters in order to investigate possible outcome of projects on common water resources. To me it makes good sense that factors such as incompatible goals on how to utilize common water resources, and the externalities this utilization might cause, can spark conflicts or disputes between states. Water is a resource which states for obvious reasons value very highly. When analyzing this case, there is undoubtedly a lack of compatible goals between Egypt and Ethiopia regarding the dam. The negotiations in both the NBI and the CFA have stalled and, as mentioned earlier, the dam is not part of any multi or bilateral agreements (Jägerskog, 2012).

This should be contrasted to the cooperative atmosphere that surrounds the initiation of the NTC. In the NTC a higher degree of correlation between the states policies may be achieved. It is always a risk that externalities such as salinity, erosion and flooding may occur as the result of grand water projects (Trondalen, 2002 [1992], p. 125-127). How to deal with this is of course a major obstacle for the parties involved. The exact implications of the dam are now being investigated by the committee (Lasheen, 2012). From the Ethiopian side there is an ambition in completing the construction in the right way. A lot of research on the dam and its possible implications have already been done by the Ethiopians themselves (Abay, 2012). The construction of the dam might in the end also cause positive externalities, such as a better regulation of the flow of the Nile for the downstream countries (Jägerskog, 2012). In order to prevent the externalities in Trondalen's third argument from occurring, the states are right now cooperating in the NTC. However, many difficult questions need to be answered, and the different wills of the respective states must be combined in order for this to be fruitful.

In my opinion, Trondalen's theory has got some advantages and some disadvantages. The positive side of it is that the parameters the theory contains are useful and sensible. Undoubtedly, this theory might have a good explanatory foundation regarding a water-related project. However, as far as I can see, this theory can't be fully applied to my case. This especially since Trondalen (like Wolf), in my opinion, lack a broader recognition of conflict. For Trondalen this is an issue since his theory focuses more on conflict than cooperation. Just like Wolf he is thereby prevented from including lower scale conflicts between the states. As we have come to see, the risk of a direct military clash between the involved countries as a result of the construction of the Grand Ethiopian Renaissance Dam is extremely low (Abay, 2012), (Jägerskog, 2012), (Lasheen, 2012). Despite the externalities that the dam may cause, the relationship between the states cannot today be said to be hostile. This is not saying that it does not exist a low-scale diplomatic conflict between the states – it unquestionably does. However, by initiating the NTC I find that the states, at least to some extent, have embraced the message of Aaron Wolf: Water is to be seen as a source of cooperation instead of



conflict. Here, as I did in the discussion regarding the four-stage model, I would like to emphasize one thing. I think it is vital to realize that cooperation and conflict (not military ones) may coexist regarding common water resources. Despite the fact that the Governments are not fully in agreement regarding the dam, it still currently exists cooperation between the countries.

By combining and connecting the four-stage model and the ABC-model to my selected case in this analysis, I believe that I have been given the necessary tools that I need in order to answer my two research questions.

## 6 Conclusions

This thesis set out to answer two questions. The first question was, *what is the probable outcome of the construction of The Grand Ethiopian Renaissance Dam, with regard to Egyptian-Ethiopian relations*, and the second question was, *what are the deciding factors that determine whether a common source of water leads to conflict or cooperation between states?* In order to answer these questions I have applied two different theories regarding cooperation and conflict over common water resources. As the reader has seen, these are Aaron Wolf's four-stage model, and Jon Martin Trondalen's ABC-model.

Wolf's well-established model give tools and structure in order to analyze the situation, based on four different angles. When these arguments are applied to my case, the following results can be derived; the historical argument undoubtedly implies that the probable outcome will be cooperation between Egypt and Ethiopia. Historically, there has not been a violent confrontation between the states as a result of a water dispute. However, a history of relatively peaceful solutions is not a guarantee for this being the norm in the future. Furthermore, Wolf's strategic interests argument also speaks in favor of a cooperative solution. The empirical evidence I have found, unanimously speak against military violence being the outcome of the dam construction. At present, the involved parties of both countries show a great interest of resolving the issue through mutual cooperation, and even deepening their relations. This leads to Wolf's third argument stating that water tend to catalyze cooperative interactions and not conflict. However, Wolf's fourth and final argument cannot be applied to my case. At present, as we have come to see, no bilateral treaties exist between Egypt and Ethiopia regarding the Grand Ethiopian Renaissance Dam.

Contrasting Wolf's four-stage model, Trondalen presents a theory that leans more towards conflict. It gives three parameters that to a higher degree implies conflict, the first being incompatible goals related to the use of international rivers. In the light of this there is no doubt that, at present, no treaties or high level agreements exists that unify and solidify compatible goals of each state. However, this should be contrasted with the fact that the NTC has been established. Its task is to discuss and investigate the implications of the dam for all parties involved. Continuing, Trondalen's second parameter highlights the potential externalities that a water project of this scale may bring about. The nature of these externalities are notoriously hard to accurately predict, and can range from an altered salinity level to the resettlement of people. On the other hand, not all externalities have to be negative. The empirical evidence that I have found in this thesis implies better regulation of the water level as a potential outcome of the construction – benefiting all riparians. Turning the focus towards Trondalen's third parameter one is given further externalities that may spark conflict. These are often the effect

of the lack of correlation between state policies. Applying this parameter to the construction of the dam, again it is evident that the lack of official agreement may create issues regarding the utilization of the Nile water. Not to forget, the parties are at present discussing issues like this within the framework of the NTC. Nonetheless, the final outcome of the committee's work is still to be seen, which I think is important to notice.

In this thesis I have found weaknesses that pertain to both Wolf's and Trondalen's theories. Firstly, in my opinion, both authors have failed to clearly define *conflict* in a satisfying way. By not including low-level conflict such as diplomatic disputes, and seemingly only recognizing violent confrontations as *conflict* the coexistence between cooperation and conflict (by my definition) is out ruled. The empirical evidence I have found in my research speak for the possibility of coexistence between conflict and cooperation. Diplomatic dispute between Ethiopia and Egypt factually coexist with the cooperation within the NTC. A useful development of the theories, shown in this thesis, would be to allow the recognition of such a coexistence.

In order to clearly answer my research questions, I below present the primary results of my work:

- At present, the outcome of the construction of the Grand Ethiopian Renaissance Dam points in the direction of continued cooperation between Egypt and Ethiopia, exemplified by the cooperation within the NTC.
- The discussions within the NTC are, however, by no means a guarantee for future successful cooperation. On the other hand, the NTC may also lead to a deepened relationship between Egypt and Ethiopia.
- This does not rule out the fact that a diplomatic conflict exists at present, which could be intensified in the future.
- Deciding and causal factors that determine whether a common source of water leads to conflict or cooperation are difficult to derive from this case. However, historically a common water resource tends to become a source of cooperation – so also in this case.
- One authoritative factor speaking in favor of this is that states tend to realize that water is something that can easily and preferably be shared. If for nothing else, control over water is hard to achieve through military means, and is unlikely to be beneficial even for the victor.

In my meaning the above outlined conclusions give a satisfying answer to my research questions. Important to recognize is that these results are relevant to the situation as it has developed to present date. Several factors complicate and can in the future impede a continued development down this path. These are to mention a few; internal turmoil and an unstable political situation within the countries, a changing climate causing drought and external political factors that might affect the Nile River Basin.

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## 7.2 Interviews

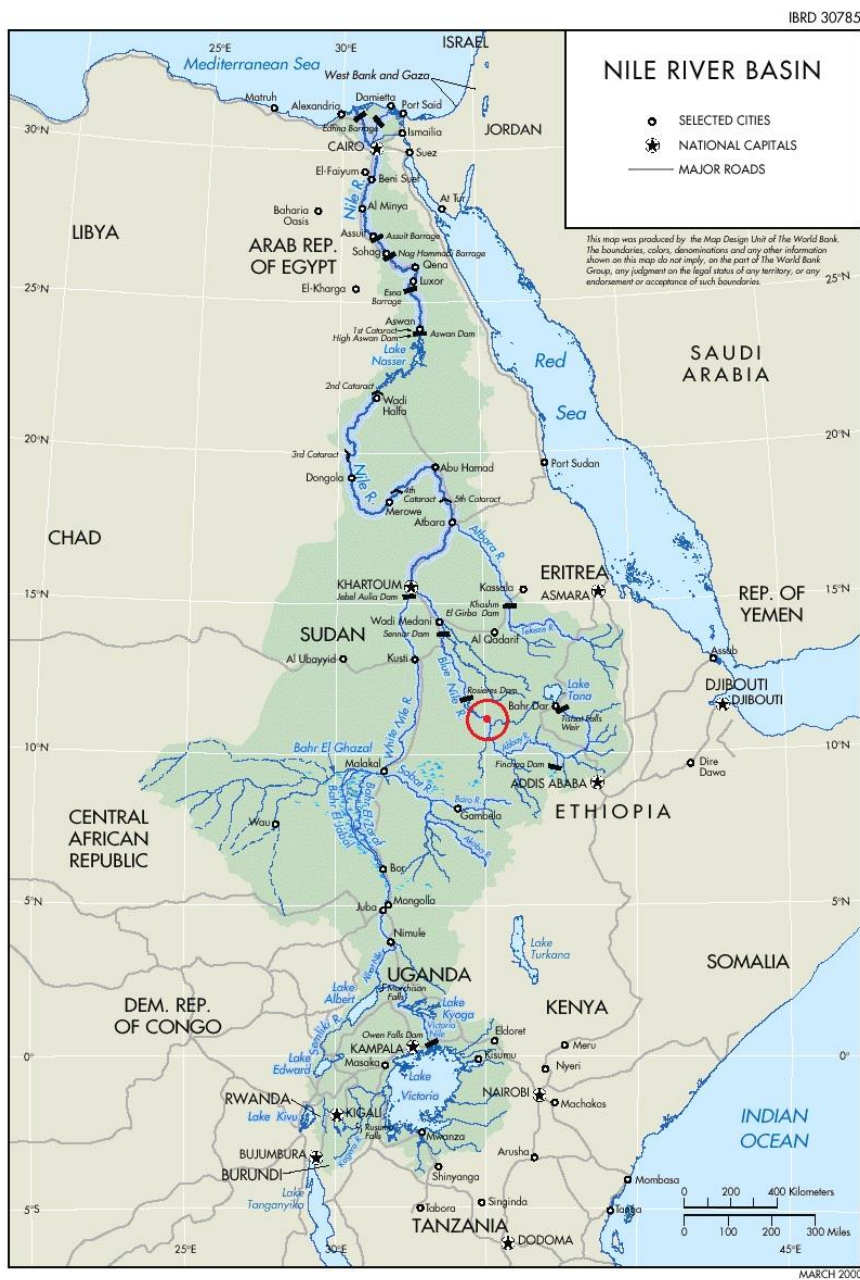
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Lasheen, Marwa Ahmed	Second Secretary & Consul, Embassy of the Arab Republic of Egypt in Stockholm. 2012-12-12

# 8 Appendix

## 8.1 Nile River Basin Map

The red marking indicates the approximate location of the dam.

Note: Marking added by the author.



Map source: World Bank, Downloaded: 2013-01-07,  
[http://siteresources.worldbank.org/EXTAFRNILEBASINI/Images/map\\_full\\_size.jpg](http://siteresources.worldbank.org/EXTAFRNILEBASINI/Images/map_full_size.jpg)