

**THE IMPACT OF WATER POLITICS ON REGIONAL SECURITY: A CASE
STUDY OF NILE BASIN STATES**

**BY
SAKWA MAUREEN WESONGA**

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DECLARATION

This project is my original work and has not been presented for a degree in any other university.

Signature

SAKWA MAUREEN WESONGA

Date

This project has been submitted for examination with my approval as university supervisor.

Signature

DR. ROSEMARY ANYONA

Date

ABSTRACT

Water politics has gained prime importance in the world as trans-boundary water resources cover nearly half of the earth surface connecting many states. The Nile basin is among the largest river basin in the world connecting several states. This study proposes to examine the impact of water politics on regional security with a focus on the Nile basin states. The study analyses the existing hydro-political elements and investigates the achievements in terms of institutional cooperation in the basin. The international and regional water problems are broadly analyzed. The study is based on secondary data resources and related literature. The available sources are analyzed through explanatory approaches. The findings, among others, have revealed that weak agricultural economy, scarcity of water and relatively less favorable political arena has hindered riparian states' cooperation in the Nile basin. The findings further revealed that both Egypt and Sudan have continued to enjoy their unchallenged rights over the use of the Nile River's water, as accorded to them in the previous water agreements. This is quickly changing with the growing water demands of the upstream riparian countries, which previously depended mainly on the rain fed agricultural activities for their livelihood. These countries are requesting for their fair share of the water. The study concludes that there appears to be prospects for more cooperation. Riparian states of the Nile also have been struggling to bring cooperative initiatives and they have been successful to some extent in negotiating their interest.

ABBREVIATIONS

BCM	Billion Cubic Meters
ICCON	International Consortium for Cooperation on the Nile
IGADD	Intergovernmental Authority on Development
MOU	Memorandums of Understanding
NBI	Nile Basin Initiative
PHG	Palestinian Hydrology Group
PKK	Kurdish Worker's Party
SADP	Southeast Anatolia Development Project
TECCONILE	Technical Cooperation Committee for Development and Environment Protection
UN	United Nations

DEDICATION

To my beloved father Hillary Makhoha Sakwa, my mother Marcela Achieng' Sakwa and my brother Dr. Maurice Sakwa, for their immense support.

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CHAPTER ONE

INTRODUCTION TO THE STUDY

1.0 Background

Trans-boundary rivers are shared by multiple sovereign states, creating conflicting demands on the river's resources and further complicating already difficult political legacies. This combination hinders cooperation over the communal resource and makes trans-boundary river basins potential areas of conflict.

The ever-growing global population has continuously led to a surging demand for water in agriculture and industry. Despite this increase, most countries remain 'water scarce' with this scarcity being felt in all continents. According to estimates, about 1.2 billion people, live in areas of physical scarcity while 500 million people are increasingly and steadily approaching this situation. Similarly, a further 1.6 billion people face economic water shortage.¹ In the Middle East, nine of the fourteen countries already face the problem of water scarcity.²

Water scarcity is thus a global challenge and the equitable usage of trans-boundary water bodies is essential for sustainable peace. In Africa, the Nile is one such trans-boundary water body; that has about 430 million people spread across over eleven states.³ The river has dependents across Egypt, Ethiopia, Eritrea, Sudan, Rwanda, South Sudan, Kenya, Republic of Congo, Uganda and Tanzania. Today, there is no common agreement on the most appropriate way of sharing its water among the Nile Basin states.⁴

The modern history of hydro-politics in the Nile basin is very complex and has had wide ramifications both for regional and global security.⁵ Water is a critical resource for all countries that share the basin, but it is especially important for the development and survival of Egypt, Eritrea, Ethiopia and the Sudan. For many years, there have been tensions among these countries over the use of the Nile. At the heart of the tensions are the 1929 and 1959 Nile Water Agreements, respectively between Britain and Egypt and Sudan and Egypt, which have been rejected by upstream states.

¹ <http://www.un.org/waterforlifedecade/scarcity.shtml>

² AFESSE, Tesfaye. "The Hydropolitical perspective of the Nile Question". August 3, 2013. Available Online at: chora.virtualave.net/tafesse-nile.htm

³ Waterbury, J. (2002). *The Nile Basin: National Determinants of Collective Action*. Yale University Press, New Haven.

⁴ Ibid.

⁵ M. El Fadel. (2003) *Journal of Natural Resources and Life Sciences Education: The Nile Basin: a Case Study in Surface Water Conflict Resolution*. 327. pp. 107-117.

Tanzania, for example, has declared that it will use Lake Victoria, which feeds the Nile, to supply her citizens in extreme need of water, straining relations with Egypt. Tanzania is an impoverished nation of 35 million people, and suffers recurrent droughts due to inadequate rainfall, deforestation, and soil erosion. In 2004, Tanzania began to build a pipeline that would supply drinking water to approximately 1 million of its inhabitants. In a similar vein, Kenya has begun to exploit fresh-water related opportunities such as fisheries, energy, transport, cattle keeping, and agriculture for approximately 3 million people who live close to Lake Victoria.⁶

For Ethiopia, the Nile is critical. About 40 percent of its population lives on rain-fed subsistence farming in the highlands, the zone of highest rainfall, which provides 86 percent of the Nile waters. These regions experience highly erratic rainfall. The population pressure on Ethiopia's land has made the system of extensive cultivation unsustainable. The country has expressed interests in developing its water resources by building a series of micro-dams on the Blue Nile thus creating tensions between Addis Ababa and Cairo.⁷ In 1980, both countries nearly went to war with Addis Ababa opposed to plans by Cairo to divert the Nile waters to the Sinai desert. While faced with the need to establish food security after the famines of the 1980s, Ethiopian leaders promoted plans to divert Nile waters for irrigation in the 1990s.⁸ However, due to international financial institutions' policy of not funding any projects on the Nile without approval of all affected riparian states in the region, such efforts have not yet matured.

The above and other related studies revolve around the regional conflicts regarding the Nile water sharing, Nile treaties, water conflicts and cooperation of the Nile River due to climate change, as well as political solutions to the Nile water conflicts. However, there is no specific study on the effect of water politics on the region's security. Nonetheless, a clear link between the two variables (water politics and regional security) needs to be established.

1.1 Statement of the Research Problem

Since the time of earliest civilizations, the Nile River is assumed by many to be the sole property of its downstream countries, especially those of Egyptians.

⁶ Yacob Arsano, (2004), "Four Approaches to Cooperation in the Nile Basin," in Proceedings of the Conference on Management of Water Resources in Ethiopia, Mulugeta Feseha and Tesfaye Tafesse, eds, Institute of Development Research (IDR): Addis Ababa, pp.181-218

⁷ Ibid

⁸ Abadir M. Ibrahim, *The Nile Basin Cooperative Framework Agreement: The Beginning of the End of Egyptian Hydro-Political Hegemony*, 18 Missouri Environmental Law and Policy Review 282 (2011).

Starting from the era of ancient civilization, the Egyptians have made most use of the water of the Nile. Herodotus described this reality when he claimed “Egypt as a gift of Nile”.⁹ Their very existence depends on the Nile as it provides them with more than 95% of the total amount of water that is being used each year. This fact, in line with the increasing number of population and climate change rose Nile to the heart of Egyptians politics. So, any kind of development in upstream countries that may hamper the free flow of the river is considered as a national security matter for them which in turn brought tense relationships in the basin. In different times, they have indicated their claim to employ war in order to protect the free flow of the river. They strengthened this stand under their new constitution of 2014.¹⁰

But recently these tensions have surfaced, as the upstream countries openly defied the status quo that favors downstream countries. For long the upstream countries have not benefited from the river though they are the major contributors. However, as a result of current progress like their increasing number of population, ecosystem degradation and constantly failing rains in addition with the existing poverty, they have started to see the Nile as one of the best resource for development. So, the upstream countries, especially Ethiopia is trying to utilize it. These progresses have highly increased the long standing tension particularly between Egypt and Ethiopia. Most of all, the perceived scarcity of water in the basin has aggravated the situation as the downstream countries refused to accept such developments due to fear of reduction in water volume. This in turn led to unwillingness to accept recent developments toward cooperation that expect them to compromise including the CFA. As a result the two sides, the upstream and downstream states, have not come to agreement on the CFA. This results in lack of all-inclusive basin-wide agreement in the basin.

No known research has investigated the implication of the interest of the riparian countries to the hydro politics of Nile basin states. Specifically, this study seeks to fill this gap by exploring the implications of these interest on the security of the region.

1.2 Objectives of the Study

The following are the objectives of the study:

⁹ Yohannes, Okbazghi, (2008), Water Resources and Inter-Riparian Relationships in Nile Basin: the Search for an Integrative Discourse, Albany: State University of New York Press p, 33

¹⁰ ZerihunAbebe, (2014), “Article 44 of Egypt’s Constitution: Codifying Historic Wrong on the Nile”. Available at: <http://www.thereporterethiopia.com/index.php/opinion/commentary/item/1528-article-44-of-egypts-constitution-codifying-historic-wrongs-on-the-nile>

- i. To determine how potential conflicts over the Nile affect the regions security strategy.
- ii. To establish how Relative Deprivation Theory help to understand the hydro-politics of the Nile Basin.
- iii. To determine the extent to which politics affects the Nile water sharing

1.3 Literature Review

This section reviews literature on the hydro-politics of the Nile; where the interplay of the interest and stakes of the eleven states and how these have affected the stability of the region will be examined. The section also highlights the prospects of the Nile as a source of war detailing how the tensions in the Nile basin if not addressed can result in war. The literature illustrates that even though there has been no known water related war in the Nile basin, water scarcity results in food shortages which may then cause conflicts between nations. The section further highlights how water wars can yield political strains; it highlights the level of water supply below which tension is likely to arise.

1.3.1 The Hydro-Politics of the Nile Basin

As presented in the background, the White Nile amalgamates itself in the new state of South Sudan. Eritrea shares parts of the Setit River, which is a branch of the Atbara River, with Ethiopia, where the Blue Nile and its tributaries originate. Egypt and Sudan are the lowest downstream riparian states.¹¹ The eleven states share the Nile River with wavering contribution, uses and stakes. The stakes and interests of Sudan, Ethiopia and Egypt are classified as very high; those of Uganda as high; those of Burundi, Tanzania, Kenya and Rwanda as moderate; and those of the Democratic Republic of Congo and Eritrea as low.¹² Because of the size of the White Nile in Southern Sudan, the heavy water losses at the swamps there, and the possibility of conservation of a good part of such water, the stakes of South Sudan is also classified as very high, almost at par with Egypt, the Sudan and Ethiopia.¹³

The wide range of interests and contributions to the River flow notwithstanding, Egypt and to a lesser extent Sudan have for a long time dominated the Nile River. In 1959, Egypt and Sudan reached an Agreement for the Full

¹¹ Ibid

¹² Timmerman, Jos, G., (2005), "Transboundary River Basin Management Regimes: the Nile Basin Case Study", Background Report to Deliverable 1.3.1 of the NeWater Project, Lelystad.

¹³ Tignor, R.L. (2010). *Egypt: A Short History*. Princeton and Oxford: Princeton University Press.

Utilization of the Nile Waters.¹⁴ This Agreement established the total annual flow of the Nile stood at Aswan as 84 BCM, and allocated 55.5 BCM to Egypt and 18.5 BCM to the Sudan. The remaining 10 BCM represent the evaporation losses at the large reservoir created by and extending below the Aswan High Dam in southern northern Sudan and Egypt.¹⁵ The construction of the Aswan High Dam in Egypt, and the Roseiris Dam on the Blue Nile in Sudan was also sanctioned in the Agreement. For assurance of cooperation in the management of the Nile waters, the Agreement established a Permanent Joint Technical Committee with an equal number of members from each country.¹⁶

Despite claims of the other riparian states to a share of the Nile waters, the two countries apportioned the entire flow of the Nile at Aswan to themselves.¹⁷ They also conferred on the Permanent Joint Technical Committee the authority to supervise the use of such share, if allowed.¹⁸ This position has been rejected by the other riparian states that conceive it as an attempt to confirm the hegemony of Egypt and Sudan over the Nile. According to them, they are being forced to recognize the 1959 Nile Agreement.¹⁹ The other riparian countries had also rejected the 1929 Nile Agreement which gave Egypt veto power over any project in the then British colonies of Sudan, Kenya, Tanganyika, and Uganda arguing that they were not bound by that agreement because they were not parties to it.²⁰ These countries entered the Nyerere Doctrine demanding that treaties concluded during the colonial era be renegotiated within two years or lapse on expiry of the two years. On the other hand, Egypt invoked the principle of state succession to support its claim that the 1929 Agreement remains valid and binding. Egypt and Sudan contend that their historic and existing uses and rights are protected under international law and not negotiable.²¹ The other riparian states also invoke international law in support of their claims to a share of the Nile

¹⁴ The 1959 Nile Agreement

¹⁵ Ibid

¹⁶ Ibid

¹⁷ Tignor, R.L. (2010). *Egypt: A Short History*. Princeton and Oxford: Princeton University Press.

¹⁸ Timmerman, Jos, G., (2005), "Transboundary River Basin Management Regimes: the Nile Basin Case Study", Background Report to Deliverable 1.3.1 of the NeWater Project, Lelystad.

¹⁹ Ibid

²⁰ Ibid

²¹ Kameri-Mbote, Patricia. "Water, Conflict and Cooperation: Lessons from the Nile River Basin". In: *Navigating Peace*, N° 4, August 2013. Available Online at: www.wilsoncenter.org/topics/pubs/NavigatingPeaceIssuePKM.pdf

waters.²² They argue that since almost the entire flow of the Nile originates within their territories, they are entitled to an equitable and reasonable share of that flow.

The 1959 Nile Agreement also addressed the water losses in the vast swamps and marshes of southern Sudan as well as the need for conservation and use of such waters.²³ Under the Agreement, the two parties would carry out projects for conserving some of the waters of these swamps in order to increase the flow of the Nile.²⁴ The costs and benefits of such projects are to be shared equally between the two parties. The Agreement gave Egypt the right to undertake this work by itself if it needs the water before Sudan does. When Sudan is ready to use its share, it would reimburse Egypt for its share of the cost of the work.²⁵ Thus, the swamps and marshes of southern Sudan have been viewed by Egypt and northern Sudan as a major potential source of additional water for their use.

1.3.2 Hydro-Politics and Regional Stability in the Nile Basin

The past few decades have witnessed tensions due to population growth, poverty, and degradation of the ecosystem and water scarcity that characterized the region. The constant threat of droughts increases the urgency of the problem, and pollution from land-use activities affects downstream water quality. Except for Kenya and Egypt, all of the basin countries are among the world's 50 poorest nations, making their populations even more vulnerable to famine and disease.²⁶ Previously, the tensions derived from the dominance and constant threat of military use from the side of Egypt, the civil wars in Sudan, Ethiopia and the negligible use of water by upstream riparian states.²⁷ Recently the divergences have risen in the region due to the constant dominance of Egypt over the water of the river and the treaties under which the country supports its power over it.

The center of the tensions is the 1929 and 1959 Nile Water Agreements. Through these agreements Egypt assured that the Nile waters could not be interrupted by any circumstances by the rest of the basin countries, the agreements also prohibited

²² Ibid

²³ The 1959 Nile Agreement

²⁴ Ibid

²⁵ Timmerman, Jos, G., (2005), "Transboundary River Basin Management Regimes: the Nile Basin Case Study", Background Report to Deliverable 1.3.1 of the NeWater Project, Lelystad.

²⁶ Kameri-Mbote, Patricia. "Water, Conflict and Cooperation: Lessons from the Nile River Basin". In: Navigating Peace, N° 4, August 2013. Available Online at: www.wilsoncenter.org/topics/pubs/NavigatingPeaceIssuePKM.pdf

²⁷ Tesfaye, Aaron. "Hydropolitics and Regional Stability in the Nile Basin". William Paterson University.

any construction on tributaries that would interrupt the flow of Nile to Egypt and Sudan.²⁸

Such agreements have recently been questioned by the rest of the riparian countries which claim their right to equitable water distribution. The need for a sufficient and constant water supply is essential for these countries in particular in order to protect the lives of the population, support food production among other needs.

These countries depend for their economic and social stability on the access to the waters of the river. Ethiopia for example, wants to use the Nile River for hydro-electrical plants and industrial development. Egypt has already said that it won't hesitate to use military force to assure its control over the Nile River, which explains the enormous importance that the water means to this country. Ethiopians on their part claims to have rights to exploit her natural resources and even went further to renounce the colonial treaties.

The main Nile riverine states involved in the conflict are Egypt, Sudan, Ethiopia and South Sudan. Egypt claims that it has historical and natural rights on the river and will be governed by the hydro-political doctrines of 'primary need', 'prior use' and 'acquired water rights'. As a result of these claims, Egypt's top foreign policy priority has always been to safeguard the uninterrupted flow of the Nile water.²⁹ In the case of Sudan the problem of water is closely linked to economic development. Sudan has the twin needs of irrigation and hydroelectric power coupled with the need to protect its citizens near the banks of the Nile from annual rainy season floods coming from the highlands of Ethiopia. Finally, for Ethiopia, the Nile represents economic interests in the agrarian sector. Approximately 40 percent of its population depends on rain-fed subsistence farming in the highlands, the zone of highest rainfall, which provides 86 percent of the Nile waters. Additionally, Ethiopia has also expressed interest in developing its water resources by building a series of micro-dams on the Blue Nile. Not surprisingly, such plans have led to tensions between Egypt and Ethiopia.³⁰

²⁸ Ibid

²⁹ Afesse, Tesfaye. « The Hydropolitical perspective of the Nile question ». August 3, 2013. Available Online at: chora.virtualave.net/tafesse-nile.htm

³⁰ Tesfaye, Aaron. "Hydropolitics and Regional Stability in the Nile Basin". William Paterson University.

It is worth noting that there has been not yet any violent conflict between these countries for water rivalry. Further, the Nile basin countries continue to seek cooperative solutions that could bring a more equitable partition of the river. In 90s for example the parties involved in the conflict participated in various dialogues with the help of the international community, targeting cooperation on the use of Nile River. The dialogue intensified and various initiatives were created, one example is the Technical Cooperation Committee for Development and Environment Protection (TECCONILE), which had the task of promoting Nile Development agenda.³¹

A transitional cooperation mechanism namely Nile Basin Initiative (NBI), was officially launched in 1999 by the council of Ministers of water affairs of these countries funded by the World Bank. Although the NBI was originally designed as a way to share scientific information, today it brings together ministers from the basin countries *“to achieve sustainable socio-economic development through equitable utilization of, and benefit from, the common Nile basin water resources,”* as stated in its shared vision.³² The NBI can also be described as a break-through and a positive move that prevented the conflict to intensify and go into violence.

In this particular case, water cooperation has helped to create an environment of trust and willingness of maintenance of friendly relations between the countries for the region. Hence, cooperation and communication must continue to be the policy under which the Nile River Countries have to manage the relations between each other and the water resources.

Water is ambient and the consequences of its use or removal by upstream countries are immediately felt downstream. Unless an international waterway such as the Nile is viewed as a unified whole, human undertakings in any part of the system, more particularly in the source country, could adversely affect lower riparian states. Much of the strain surrounding shared waters stems from the fact that one nation's gain is usually another's loss. If Ethiopia develops upper Nile waters, Egypt will lose out, and if Egypt insists on maintaining the status quo, that is, insisting on becoming the sole beneficiary of the Nile, all other riparian states will lose out.

Starr points that in mid-1980s, the U.S. government intelligence services estimated that in at least 10 places in the world war could break out over dwindling

³¹ Ibid

³² Kameri-Mbote, Patricia. “Water, Conflict and Cooperation: Lessons from the Nile River Basin”. In: Navigating Peace, N° 4, August 2013. Available Online at: www.wilsoncenter.org/topics/pubs/NavigatingPeaceIssuePKM.pdf

shared-water resources.³³ The major crisis spots are, according to the same sources, the Middle East and the Nile basin. In 1975, Syria and Iraq were very close to full-scale war because of disagreements over the use of the Euphrates. In the 80s, disputes over the usage of the Euphrates and Tigris rivers were common between Turkey, Syria and Iraq. Elhance, has put ...in a geopolitical sense, water is likely to become the 'oil of the next century.'³⁴ The World Bank's Vice-President, Ismael Seageldin, once said, "Many wars this century were about oil, but the wars of the next century will be about water".³⁵ Such scenarios make up the content of Hydro-(Water) Politics.

Hydropolitics prevails when water disputes shape the political landscape in a region and when it is considered as a strategic resource of political significance. Elhance further points that hydropolitics is the systematic study of conflict and cooperation between states over water resources that transcend international borders.³⁶ Egypt has been the most aggressive user of the Nile waters; not all the basin's riparian states have been in a position to utilize the waters of the Nile equally. The other countries that have benefited from the Nile Rivers are Sudan and Uganda.

1.3.3 Prospects of the Nile as a Source of War

There is no documented major conflict over access to fresh water. However, Brown argues that water scarcity is the single biggest threat to global food security. He further contends that historically, water scarcity was a local issue. It was up to national governments to balance water supply and demand. Now this is changing as scarcity crosses national boundaries via the international grain trade. It takes 1,000 tons of water to produce one ton of grain, importing grain is the most efficient way to import water. Countries are in effect, using grain to balance their water books. Similarly, trading in grain futures is in a sense trading in water futures. After China and India, there is a second tier of smaller countries with large water deficits - Algeria, Egypt, Mexico, and Pakistan. Algeria, Egypt, and Mexico already import much of their grain. With its population outgrowing its water supply, Pakistan too may soon turn to world markets for grain.

³³ Starr, G.R., (Spring, 1991), "Water Wars" Foreign Policy, Vol. 82, pp. 17-36.

³⁴ Elhance, Arun P, (1999). *Hydropolitics in the Third World: Conflict and Cooperation in International River Basins*. Washington; D.C.: United States Institute of Peace Press.

³⁵ Daily Mail and Guardian, (26 May 1999), "Race for Water Security begins", as quoted by <http://www.mg.co.za/mg/news/99May2/26May-water.html>.

³⁶ Elhance, Arun P, (1999). *Hydropolitics in the Third World: Conflict and Cooperation in International River Basins*. Washington; D.C.: United States Institute of Peace Press.

Seckler *et al.* summarized that many of the most populous countries of the world - China, India, Pakistan, Mexico, and nearly all the countries of the Middle East and North Africa - have literally been having a free ride over the past two or three decades by depleting their groundwater resources. The penalty for mismanagement of this valuable resource is now coming due and it is no exaggeration to say that the results could be catastrophic for these countries and, given their importance, for the world as a whole.³⁷

The Aswan Dam now holds back most of the silt that once formed the rich agricultural land in the Nile Delta, which is eroding into the sea in some places at a rate of 100 meters annually. International conflict expert Homer-Dixon has suggested that conflict is most probable when a downstream riparian is highly dependent on river water and is militarily and economically strong in comparison to upstream riparians.³⁸ This is precisely the case with Egypt. It depends on the Nile and is far stronger militarily, politically, and economically than South Sudan, Sudan or Ethiopia.

In 1980 President Anwar el-Sadat of Egypt stated that "If Ethiopia takes any action to block our right to the Nile waters, there will be no alternative for us but to use force. Tampering with the rights of a nation to water is tampering with its life and a decision to go to war on this score is indisputable in the international community." In the year 1991 the Defence Ministry of Egypt indicated that it was ready to use force, if necessary, to protect its control of the Nile. On the other hand, in 1997, Ethiopia's Ministry of Water Resources announced in 1997 that "as a source and major contribution of the Nile waters, Ethiopia has the right to have an equitable share of the Nile waters and reserves its rights to make use of its waters."³⁹ The tension kept on building with Ethiopia's Foreign Ministry stating in 1998 that there is no earthly force that can stop Ethiopia from benefiting from the Nile. Similarly in 2004, Egypt announced in 2004 in advance of a meeting with other riparian states that the talks must not "touch Egypt's historical rights" to the Nile water. Rather, riparian states should focus on ways to recover water that is being wasted.⁴⁰

³⁷ Seckler, D., Barker, R. & Amarasinghe, U.A. 1999. Water scarcity in the twenty-first century. *Int. J. Wat. Res. Dev.*, 15(1/2): 29-42.

³⁸ Thomas F. Homer-Dixon, (2005). *Environment, Scarcity, and Violence*. Princeton University Press

³⁹ Kameri-Mbote, Patricia. "Water, Conflict and Cooperation: Lessons from the Nile River Basin". In: *Navigating Peace*, N° 4, August 2013. Available Online at:

www.wilsoncenter.org/topics/pubs/NavigatingPeaceIssuePKM.pdf

⁴⁰ *Ibid*

Ethiopian Prime Minister Meles Zenawi warned in 2005 that if Egypt were to stop Ethiopia from utilizing the Nile water it would have to “occupy Ethiopia and no country on earth has done that in the past.”⁴¹ Italy did that from 1936-41.⁴² Egypt is in no position today, however, to occupy Ethiopia although it could inflict considerable damage by air. In 2005 the Egyptian Foreign Minister in response to demands by upstream riparian states to review the Nile treaties, indicated that Egypt would not give up its share of Nile water.⁴³ Former Egyptian Foreign Minister and UN Secretary General Boutros Boutros Ghali told the BBC in 2005 that military confrontation between the countries of the Nile Basin was almost inevitable unless they could agree to share water equitably.⁴⁴ He concluded that the next war among countries would not be for oil or territorial borders, but only for the problem of water.

It should be eminently possible to avoid war over water in the Nile Basin. However, to suggest that it will not happen just because there has not been a war over access to fresh water in the past is not persuasive. This is an issue that will require careful attention by the concerned parties and the international community to ensure that conflict does not break out.

1.3.4 Water Scarcity Yields Political Strains

Typically, well-being is measured in economic terms and in income per person. But water well-being is measured in cubic meters or tons of water per person. A country with an annual supply of 1,700 cubic meters of water per person is considered to be well supplied with water; able to comfortably meet agricultural, industrial, and residential uses. Below this level, stresses begin to appear. When water supply drops below 1,000 cubic meters per person, people face scarcity. Below 500 cubic meters, they face acute scarcity. At this level people are suffering from hydrological poverty - living without enough water to produce food or, in some cases, even for basic hygiene.⁴⁵

Burke hold that the world’s most severe water stresses are found in North Africa and the Middle East, While Morocco and Egypt have fewer than 1,000 cubic

⁴¹ Timmerman, Jos, G., (2005),“Transboundary River Basin Management Regimes: the Nile Basin Case Study”,Background Report to Deliverable 1.3.1 of the NeWater Project, Lelystad.

⁴² Ibid

⁴³ Ibid

⁴⁴ Thomas F. Homer-Dixon, (2005). Environment, Scarcity, and Violence. Princeton University Press.

⁴⁵ John W. Miller, “Global Fishing Trade Depletes African Waters,” *Wall Street Journal*, 23 July 2007.

meters per person per year, Algeria, Tunisia, and Libya have fewer than 500.⁴⁶ Some countries, including Saudi Arabia, Yemen, Kuwait, and Israel, have less than 300 cubic meters per person per year. A number of sub-Saharan countries are also facing water stress, including Kenya and Rwanda.⁴⁷

While national averages indicate an adequate water supply in each of the world's three most populous countries - China, India, and the United States - regions within these countries also suffer from acute water shortages. Water is scarce throughout the northern half of China. In India, the northwestern region suffers extreme water scarcity. For the United States, the southwestern states from Texas to California are experiencing acute water shortages.⁴⁸

Although the risk of international conflict over water is real, so far there have been remarkably few water wars. Water tensions tend to build more within societies, particularly where water is already scarce and population growth is rapid. Recent years have witnessed conflicts over water in scores of countries. In other countries, the conflicts are between tribes, as in Kenya, or between villages, as in India and China, or upstream and downstream water users, as in Pakistan or China. In some countries local water conflicts have led to violence and death, as in Kenya, Pakistan, and China.⁴⁹

In Pakistan's arid southwest province of Baluchistan, water tables are falling everywhere as a fast-growing local population swelled by Afghan refugees is pumping water far faster than aquifers can recharge. The provincial capital of Quetta, as noted earlier, is facing a particularly dire situation. Faruqi, a researcher at Canada's International Development Research Centre, describes the situation facing Quetta: "With over a million people living there now, many of whom are Afghan refugees, the possibility of confrontation over decreasing water resources, or even mass migration from the city, is all too real."⁵⁰

⁴⁶ Laretta Burke et al., *Pilot Analysis of Global Ecosystems: Coastal Ecosystems* (Washington, DC: WRI, 2001), pp. 19, 51; coastal wetland loss in Italy from Lester R. Brown and Hal Kane, *Full House* (New York: W. W. Norton & Company, 1994).

⁴⁷ *Ibid*

⁴⁸ Clive Wilkinson, ed., *Status of Coral Reefs of the World: 2004* (Townsville, Australia: Global Coral Reef Monitoring Network, 2004), p. 9.

⁴⁹ Laretta Burke and Jonathan Maidens, *Reefs at Risk in the Caribbean* (Washington, DC: WRI, 2004), pp. 12-14, 27-31.

⁵⁰ Mohammed Kotb et al., "Status of Coral Reefs in the Red Sea and Gulf of Aden in 2004," in Wilkinson, *op. cit.* note 70, pp. 137-39.

Not far to the west, Iraq is concerned that dam building on the Euphrates River in Turkey and, to a lesser degree, Syria will leave it without enough water to meet its basic needs. The flow into Iraq of the Euphrates River, which gave birth to the ancient Sumerian civilization, has shrunk by half over the last few decades.⁵¹

Another water flash point involves the way water is divided between Israelis and Palestinians. A U.N. report notes “nowhere are the problems of water governance as starkly demonstrated as in the Occupied Palestinian Territories.” Palestinians experience one of the highest levels of water scarcity in the world. Nevertheless, the flash point is as much over inequity in the distribution of water as it is over scarcity. The Israeli population is roughly double that of the Palestinians, but it gets seven times as much water. As others have noted, peace in the region depends on a more equitable distribution of the region’s water. Without this, the peace process itself may dry up.

At the global level, most of the projected population growth of nearly 3 billion by 2050 will come in countries where water tables are already falling. The states most stressed by the scarcity of water tend to be those in arid and semiarid regions, with fast-growing populations and a resistance to family planning. Many of the countries high on the list of failing states are those where populations are outrunning their water supplies, among them Sudan, Iraq, Somalia, Chad, Afghanistan, Pakistan, and Yemen. Unless population can be stabilized in these countries, the continually shrinking supply of water per person will put still more stress on already overstressed governments.⁵² Although spreading water shortages are intimidating, there are the technologies needed to raise water use efficiency, thus buying time to stabilize population size. Prominent among these technologies are those for more water-efficient irrigation, industrial water recycling, and urban water recycling.

1.3.5 Avoiding Conflict over Nile Water Issues

The Nile Basin Initiative has become the most important mechanism so far to encourage cooperation among the riparian countries. Each NBI member has agreed to share information with other riparian states on projects it intends to launch and, if possible, undertake joint studies to ensure the sustainable utilization of water. The NBI, with strong support from the World Bank, UN Development Program, and

⁵¹ UNEP and Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities, *The State of the Marine Environment: Trends and Processes* (The Hague: 2006).

⁵² Organisation for Economic Co-operation and Development, *OECD Environmental Outlook* (Paris: 2001), pp. 109–20.

Canada, emphasizes basin-wide cooperation.⁵³ Although the NBI has had some positive accomplishments, Nile expert Robert Collins believes it has actually done very little so far other than provide technical training for member country personnel. He argues that each riparian continues, for the most part, to proceed with projects without reference to other members and that Egypt, Sudan and Ethiopia, in particular, ignore the other riparian states.⁵⁴ Finally, Collins says there is still no overall plan for managing water in the basin.

The World Bank coordinates the International Consortium for Cooperation on the Nile (ICCON), which promotes financing for cooperative water resource development and management in the basin. The Bank also administers the Nile Basin Trust Fund, a mechanism to implement basin-wide programs. Providing there is good will among the riparian states, these programs can work to the benefit of riparian states by encouraging the cultivation of crops that require less water, reusing drainage water, and improving the environment in watershed areas.

Countries with significant hydroelectric power potential like Ethiopia can build dams and sell power to Sudan and Egypt. Upstream dams in Ethiopia can trap sediment that is causing problems for reservoirs in Sudan and Egypt. Sudan can do the same in the case of Egypt.⁵⁵ Because of lower evaporation, Ethiopia can store water more efficiently for use during times of scarcity in Sudan and Egypt. It can also hold back water to prevent flooding. Cooperative Nile Basin development can provide the riparian states greater net benefits than they would achieve through unilateral development projects.⁵⁶ The Nile Basin offers an opportunity for the international community to engage in conflict prevention.

For its part, the US should elevate Nile Basin cooperation to a major foreign policy priority in the region and treat Nile water questions as a potentially significant conflict that can be avoided. The US has been reluctant to do this so far for bureaucratic and substantive reasons. Egypt is located in the Bureau of Near Eastern Affairs in the State Department while the other nine riparian states are in the Bureau of African Affairs.⁵⁷ In recent decades, Egypt has been more important to US policy

⁵³ Thomas F. Homer-Dixon, (2005). *Environment, Scarcity, and Violence*. Princeton University Press.

⁵⁴ *Ibid*

⁵⁵ Tesfaye, A. (2005). *Hydropolitics and Regional Stability in the Nile Basin*. William Paterson University.

⁵⁶ *Ibid*

⁵⁷ US Department of State

than the other nine riparian states combined.⁵⁸ Egypt does not want to hear from the US about Nile water issues unless the US expresses full support for Egyptian Nile policies. In order to avoid another potentially contentious issue, the US has largely complied.

Nevertheless the US is well positioned to encourage cooperative solutions for the use of Nile water as a routine part of its diplomatic dialogue with Egypt, Sudan, Ethiopia, and the seven other riparian states. The US should also work with and support financially the NBI, the Nile Basin Trust Fund, and ICCON.⁵⁹ It should offer to finance technical assistance by appropriate US institutions to develop regional climatic models, short and long-term hydro meteorological forecasting, and modeling of environmental conditions. Finally, the US should encourage the NBI to draw on American technical expertise in areas such as remote sensing and Geographical Information Systems for the multitude of technical and environmental issues that face Nile Basin riparian states.

1.4 Theoretical Framework

This study will be based on the theory of Relative Deprivation. Ted Robert Gurr explains in *Why Men Rebel* that instead of an absolute standard of deprivation, a gap between expected and achieved welfare creates collective discontent.⁶⁰ This theory also applies to individuals who find their own welfare to be inferior to that of others to whom they compare themselves. Gurr explains political tension (violence) as the result of collective discontent caused by a sense of relative deprivation. He writes, "Relative deprivation' is the term... used to denote the tension that develops from a discrepancy between the "ought" and the "is" of collective value satisfaction, and that disposes men to violence." This gap between an individual's expected and achieved welfare results in collective discontent.

The concept of relative deprivation dates back to ancient Greece. Aristotle articulated the idea that revolution is driven by a relative sense or feeling of inequality, rather than an absolute measure. According to Gurr, "For Aristotle the principal cause of revolution is the aspiration for economic or political equality on the part of the common people who lack it, and the aspiration of oligarchs for greater inequality than they have, that is, a discrepancy in both instances between what

⁵⁸ Ibid

⁵⁹ Tesfaye, A. (2005). *Hydropolitics and Regional Stability in the Nile Basin*. William Paterson University.

⁶⁰ Ibid

people have of political and economic goods relative to what they think is justly theirs.” Consider the modern day example of a millionaire living in Beverly Hills with an Olympic sized swimming pool. One would look at this man’s life and likely conclude that he could not possibly feel “deprived.” However, let us suppose that the millionaire’s next - door neighbor has ten Olympic sized swimming pools. Though the millionaire is objectively wealthy, he might feel relatively deprived. Gurr says this “perceived discrepancy between value expectations and value capabilities” is what leads to discontent, not the millionaire’s absolute economic standing.⁶¹

Runciman defines the preconditions of “relative” deprivation as follows (where Person A feels deprived of object X): Person A does not have X; Person A wants to have X; Person A knows of other people who have X; Person A believes obtaining X is realistic.⁶²

Gurr examines the psychological frustration-aggression theory which argues that the primary source of the human capacity for violence is the frustration-aggression mechanism. Frustration does not necessarily lead to violence, Gurr says, but when it is sufficiently prolonged and sharply felt, it often does result in anger and eventually violence.

Gurr explains this hypothesis with his term "relative deprivation," which is the discrepancy between what people think they deserve, and what they actually think they can get. Gurr's hypothesis, which forms the foundation of the book, is that: "The potential for collective violence varies strongly with the intensity and scope of relative deprivation among members of a collectivity."⁶³

It is noteworthy that Gurr does not look to a more absolute or objective indicator of deprivation as the source of political violence. People can become inured to a bad state of affairs, even one that offers so little access to life-sustaining resources that members of the group are starving or dying of remediable diseases or exposure.

If, however, there is a significant discrepancy between what they think they deserve and what they think they will get, there is a likelihood of rebellion. Gurr posits this to be the case even if there is no question that their basic needs will be met. The first situation may be a desperate one, but it is the second that is frustrating. And, according to Gurr, just as frustration produces aggressive behavior on the part of an

⁶¹ Ibid

⁶² Shema, Nicole, (2009), “The Failings and Future of Nile Basin Management,” Thesis Submitted to Department of political Science of the University of Johannesburg, Johannesburg.

⁶³ Ibid

individual, so too does relative deprivation predict collective violence by social groups.

How might feelings of relative deprivation translate into political tension? Ted Robert Gurr provides a psychological approach to explain how collective discontent is manifested as political aggression: “The primary source of the human capacity for violence appears to be the frustration - aggression mechanism... the anger induced by frustration... is a motivating force that disposes men to aggression, irrespective of its instrumentalities.” However, Gurr was not the first in his field to propose a link between frustration and aggression. Dollard, Millard, *et al.* were the first to propose the theory, postulating that frustration leads men to act aggressively.⁶⁴ According to my hypothesis, this frustration is caused by relative deprivation, and the resulting aggression is manifested as political tension. I hypothesize that levels of political tension may be explained in part as an expression of country conditions conducive to relative deprivation.

According to Wolf, war over water is neither strategically rational, hydrographically effective nor economically viable. Shared interests along a waterway seem to overwhelm waters’ conflict-inducing characteristics and once water management institutions are in place, they tend to be very resilient. “International water is a resource whose characteristics tend to induce cooperation, and incite violence only in the exception”.⁶⁵

1.5 Hypotheses

The following are the hypotheses of the study:

1. If water scarcity has gained importance for regional security in the Nile Basin, there should be an increased focus on water and water cooperation in bilateral agreements.
2. If water scarcity eventually makes states cooperate with regards to hydro-politics, there should be policy implementations that directly reflect the politics.
3. Politics has varied effects on the sharing of the Nile water.

⁶⁴ Shema, Nicole, (2009), “The Failings and Future of Nile Basin Management,” Thesis Submitted to Department of political Science of the University of Johannesburg, Johannesburg.

⁶⁵ Wolf & Hammer 2000

1.6 Methodology

1.6.1 Data Collection

Secondary data has been collected from existing published and unpublished materials including books, articles, journals, reports, documents of governmental and nongovernmental organizations, and internet sources.

1.6.2 Data Analysis

The qualitative research method was applied in this study. The researcher used available information to establish primary security concerns the Nile Basin region. Paterniti argues that the purpose of qualitative methods is to provide an open-ended, in-depth exploration of an aspect of research, also to focus attention on a particular experience to gain a specific insights about an experience to elicit subjective world views of an experience. In order to approach the hypotheses deduced the researcher applied a focused case study with method triangulation of how the eleven countries are dealing with the situation of water scarcity and their shared resources. Conclusions drawn from this study could thus be useful for generalising about the impact of water politics on regional security “considering strong upstream riparian and its neighbours” in the region. Secondary data sources were used to deal with the hypothesis of this study. The secondary data has been collected from existing published and unpublished materials including books, articles, journals, reports, documents of governmental and nongovernmental organizations, and internet sources.

1.7 Chapter Outline

Chapter one of the study focuses on statement of the problem statement, objectives of the study literature review, theoretical framework, justification, methodology and hypotheses. Chapter two of the study will explore the international and regional water problems. Here, the study will particularly explore trans-boundary water conflict and cooperation, and in effect consider interstate relations over shared water resources as distinct from intrastate relations.

Chapter three of the study will entail hydro-politics and regional security in the Nile Basin. It will critically look at how water politics affect security in the Nile Basin, with respect to the pre-colonial, colonial and post-colonial periods.

Chapter four of the study will analyze the collected data on water politics and regional stability in the Nile Basin. Lastly, chapter five will be about summary, conclusions and recommendations of the study.

CHAPTER TWO

THE INTERNATIONAL AND REGIONAL WATER PROBLEMS

2.0 Introduction

Studies on trans-boundary water conflict and cooperation generally consider interstate relations over shared water resources as distinct from intrastate relations. Whereas connections have been made between international water relations and regional relationships, it is conceivable that international water conflict and cooperation may also be influenced by domestic water events and vice versa. Trans-boundary rivers are shared by multiple sovereign states, creating conflicting demands on the river's resources and further complicating already difficult political legacies. This combination hinders cooperation over the communal resource and makes trans-boundary river basins areas of conflict. To resolve such conflicts, the involvement of a third party mediator with the capabilities to offer incentives to reluctant riparians, coupled with the creation of a management institution to address conflicts as they arise, offers the best means of addressing both the short term issues of getting states to agree to a cooperative arrangement for the river and the long term commitment problems that would lead states to renege on the agreement. This chapter seeks to investigate the dynamics of water interactions across geographic scale and their relationship to broader international affairs.

2.1 Geographical and political implications of water conflicts

While direct manifestations of water conflict are well documented, water disputes can also have broader political and geographic implications. For example, in 1987, the *intifada*, or Palestinian uprising, broke out in the Gaza Strip and quickly spread to the West Bank. During three decades of Israeli occupation in the Gaza Strip, the quality of surface and groundwater supplies steadily deteriorated and water related disease rose.

Water security issues have played a role in regional instabilities in many parts of the world. Nishat points that in 1960 India built a barrage at Farakka on the Ganges River to control siltation at Calcutta's seaport some 100 miles to the south.⁶⁶ This decision according to Nishat had a number of adverse impacts on Bangladesh including degraded surface and groundwater supplies, impeded navigation, declining

⁶⁶ Nishat (1996)

fisheries, and public health risks.⁶⁷ In Southern Africa, it has been suggested that water security concerns as one possible motive behind South Africa's 1998 deployment of troops to Lesotho, the upstream riparian to the regionally important Orange River, in response to political turmoil in the mountain kingdom.

In spite of the history of water related discord, conflict and cooperation over water has rarely been assessed methodically to determine if quantifiable relationships exist between water related events at varying geographic scales (for example, domestic and international) and between water and non-water relations. While a recent empirical study assessing the factors contributing to international water conflict and cooperation found an overall correlation between general bilateral relations among nations and bilateral relations regarding water resources (see Wolf et al.), the study did not clarify the direction of linkage nor whether the nature of the linkage is consistent across countries and regions. Furthermore, it did not explain if international issues drive domestic relations over water or vice versa.

2.2 Water Conflict in South Asia

Water issues in South Asia are especially threatening because the political equation between a numbers of the countries in the region is highly volatile, be it India-Pakistan, India-Bangladesh or India-Nepal.⁶⁸ According to most of the articles and reports on water issues in South Asia, the major problem seems to be political.⁶⁹ In his seminal work on water issues, Iyer elucidates how the problem with water issues is not that water issues complicate political issues (that rarely occurs), but that complicated political issues make the smallest water issues between countries, intractable.⁷⁰ For instance, in the India- Bangladesh relationship, it is the issue of illegal immigrants, Chakma refugees, insurgency operations, border demarcation issues, and trade balance that make any resolution of the water issues harder. India demands a resolution to these problems before broaching the water issues.

Memorandums of Understanding (MOU) in 1983 and 1985 to share Ganges water and to find out long-term solution by augmenting lean season Ganges flow.⁷¹

⁶⁷ Ibid.

⁶⁸ Shema, Nicole, (2009), "The Failings and Future of Nile Basin Management," Thesis Submitted to Department of Political Science of the University of Johannesburg, Johannesburg.

⁶⁹ Ibid.

⁷⁰ Iyer, Ramaswamy. 2003. "Relations With Neighbours." *Water: Perspectives, Issues, Concerns*. New Delhi: Sage Publications India Pvt. Ltd.

⁷¹ International Water Law Project. 2006. *The Ganges Water Conflict, A comparative analysis of 1977 Agreement and 1996 Treaty*. Helsinki.

However, considering the general situation of distrust between the two countries, it is hard to rely on the longevity of the treaty.

The issue of illegal migrants particularly complicates matters between the two countries. According to an article by Alam, the migration to India continues even today, unabated. The early movement was limited mainly to the border states of Assam, Tripura and West Bengal but now it has moved to even far off states like Tamil Nadu, Maharashtra, Gujarat, Rajasthan and Delhi. It is reported that there are approximately 20 million illegal Bangladeshi living in various parts of India.⁷² This has led to destabilizing political, social, economic, ethnic and communal tension. There are no exact figures of the illegal immigrants but since the 1970s over 2 million Bangladeshis have immigrated to India, and settled mostly in the Indian states of West Bengal and Assam. This in turn has resulted in ethnic conflicts between the indigenous inhabitants of the place and the refugees. In Assam, more than 4000 people were killed in such a native migrant conflict in the early 1980s and such tensions continue till date.⁷³ This illegal immigration acts as a critical irritant between the two countries and obstructs a political deal on the various problems.

An example of this deficit was also the dispute over the Ganga between India and Bangladesh. The Ganga dispute was magnified by a complete lack of appreciation of the other side's point of view. India tended to regard the Ganga as essentially an Indian river and it also viewed it as an important source of water for meeting the water needs in different parts of the country from the West to the South. It also failed to appreciate the reduction in water supplies caused by the reduced flow in the Ganga. This was matched by Bangladesh's failure to recognize the needs of the upstream populations, matched by a refusal to explore new avenues of meeting its water needs, along with the omnipresent fear of the bigger and more powerful country, India.

In a report by the Asia Society, it is mentioned that India and Bangladesh have fought over the sharing of the Ganges River since right after India's independence.⁷⁴ In 1951, India decided to construct the Farakka barrage, about 11 miles from the Bangladesh border, in order to divert water from the Ganges to Hooghly River (in

⁷² Institute for Defence Studies and Analyses. 2003. *Environmentally Induced Migration from Bangladesh to India*. New Delhi.

⁷³ American University. 1997. *India Bangladesh Water Dispute*. Case 78. Washington. <http://www1.american.edu/ted/ice/indobang.htm#r2>.

⁷⁴ Ibid

India).⁷⁵ The barrage started operation in 1975 and helped in improving India's navigability and port access and provided irrigation and drinking water to adjacent Indian states.

However, according to Bangladesh, this has resulted in an increasing control over the Ganges River's water flow into Bangladesh.⁷⁶ Bangladesh also complains that its territory gets flooded during the monsoons because of the release of the excess waters by India.⁷⁷ With regards to the Farakka barrage, Bangladesh has signed two water sharing treaties so far, the most recent one in 1996, to manage the water between the two countries during the dry season. However, this agreement has not been adequate in the extreme drought situations and it also has limited provisions for improvements.⁷⁸

According to a report by Datta at the Institute for Defence Studies and Analyses (IDSA), New Delhi, the Tipaimukh dam is an equally worrying concern for Bangladesh. Bangladesh feels that the dam would again affect the quantity of water that comes in Bangladesh.⁷⁹ Teesta is another highly emotive subject between the two countries. The two countries have been trying to negotiate a deal on the same but Bangladesh expects India to release 3000 cusecs of water per day during the lean season and that might not be easily agreed to by India. At the latest meet of the JRC, Bangladesh presented an "interim agreement" on the Teesta to India and India has agreed to propose a deal on the same, in a timely fashion but there has been limited progress on the same, thus far.⁸⁰

Similarly, water issues between India and Nepal have been affected to a major extent by a lack of appreciation of the other side's perspective. Water issues between India and Nepal are affected to a considerable extent, by the bilateral relations between the two. In an article by Medha Bisht of the IDSA, the Kosi Agreement has not gone off very smoothly between the two countries. India and Nepal signed the

⁷⁵ Shema, Nicole, (2009), "The Failings and Future of Nile Basin Management," Thesis Submitted to Department of political Science of the University of Johannesburg, Johannesburg.

⁷⁶ Asia Society, 2009. *Water: Asia's Next Challenge*. New York. Tufts University. 2009. *Contributing Factors in the Ongoing Water Conflict Between Bangladesh and India*. Washington.

⁷⁷ Institute for Defence Studies and Analyses. Khan. 2009. *Towards Better India-Bangladesh Relations*. New Delhi.

⁷⁸ Tufts University. 2009. *Contributing Factors in the Ongoing Water Conflict Between Bangladesh and India*. Washington.

⁷⁹ Institute for Defence Studies and Analyses. 2010. *Indo-Bangladesh Relations: An enduring partnership*. New Delhi.

⁸⁰ Institute of Peace and Conflict Studies. 2010. *Time for Teesta*. New Delhi.

Kosi agreement in 1954 to regulate the flow of the river and ensure flood management.

A barrage straddling the India-Nepal border was to be constructed for this purpose, and embankments were to be raised on either side of the river.⁸¹ At the same time, the project was also to be utilized for power generation and irrigation purposes. There have been various disputes over this agreement fuelled by floods in the Kosi region. In April 2008, there was a devastating flood in the Kosi Basin, which displaced 30 lakh people in India and around 50,000 people in Nepal.

Both the sides blame each other for failing to prevent such a massive disaster. According to Nepal, this was the result of India's neglect in maintaining the upkeep of the embankments of the barrage. The Nepalese government holds India responsible for a breach of the embankment.

According to a report in the South Asian Journal, Nepal, being an upper riparian, has a different relationship with India and faces many problems in constructing its dams due to opposition by the lower riparian and has serious doubts about the projects proposed by India. Nepal's mistrust, beside other factors, has been reinforced by what it perceives to be various unequal treaties - starting from Sharada Dam construction (1927), 1950 Treaty and Letters of Exchange of 1950 and 1965, Koshi Agreement (1954), Gandak Agreement ((1959), Tanakpur Agreement (1991) and the Mahakali Treaty (1996). Since 400 million people live in the Ganges, Brahmaputra and Meghna region, India needs Nepal to meet its energy needs and for management of water.⁸²

India and Nepal have traditionally disagreed over the interpretation of the Sugauli Treaty signed in 1816 between the British East India Company and Nepal, which delimited the boundary along the Maha Kali River in Nepal. The dispute intensified on 1997 when Nepal was planning to consider a treaty on hydroelectric development of the river. India and Nepal differ as to which stream constitutes the source of the river. Nepal regards the Limpiyadhura as the source; India claims the Lipu Lekh. The dispute between India and Nepal might seem minor but it gains strategic importance, because the disputed area lies near the Sino-Indian border.⁸³

⁸¹ Institute for Defence Studies and Analyses. 2008. *Revisiting the Kosi Agreement: Lessons for Indo-Nepal Water Diplomacy*. New Delhi http://www.idsa.in/idsastrategiccomments/RevisitingtheKosiAgreement_Medha%20Bisht_220908.

⁸² "Water Issues in South Asia." 2005. *South Asian Journal*.

⁸³ Tribhuvan University. 1984. *Indo-Nepal Migration: Problems and Prospects*. Vol 11, No 2. Nepal: Tribhuvan University.

2.3 Water Conflict in the Middle East

The next war in the Middle East will be fought over water' or 'the trans-boundary nature of water creates an interdependency between states that obliges cooperation. These conflicting cries have been associated for decades with the Jordan River basin, which may be paradoxical than it is predictable. Its dry climate and political instability regularly lead the media and politicians to raise the specter of "water-wars", led or followed by academia in attempts at demonstrating an environment-conflict causal link.

In light of the cautious optimism of an enduring political agreement between Israel and the Palestinians inspired by the mid-1990's process known as the 'Oslo Accords', the theories on water-cooperation and its benefits grew.⁸⁴ With the eventual demise of the accords and the resumption of an Israeli occupation of the Palestinian Territories from roughly 2000 onwards, analysis of a graver tone is emerging while older works highlighting the negative aspects of the Palestinian-Israeli water conflict are gaining currency.

Lowi states that even before the establishment of Israel, Zionists viewed access to water resources as a necessary component for the long-term viability of a Jewish state.⁸⁵ Additionally, he points that at the 1919 Paris Peace Conference, for example, the World Zionist Organization insisted that the future Jewish state control not only the water resources within the British Mandate of Palestine but also the sources of their flow. Since Israel founded in 1948, water has remained intricately linked with national security and water use has been viewed as a means for both agricultural and economic output as well as national survival.⁸⁶

Israel's leaders have been constantly concerned with access to adequate water supplies to support a growing population and agriculture largely dependent upon irrigation since the nation's establishment. Israel is reliant upon the Jordan River and its tributaries as well as delicate groundwater reserves to meet ever-increasing water resource demands. Since 1949, Israel's population and irrigated area have both increased severely straining the nation's water supplies.⁸⁷ The country's primary water sources are located in the northern part, a substantial distance from the nation's

⁸⁴ Wolf 2000a, Allan 2001, Jagerskög 2003a

⁸⁵ Lowi, M. 1993. *Water and Power - The Politics of a Scarce Resource in the Jordan River Basin*. Cambridge, USA: Cambridge University Press.

⁸⁶ Ibid

⁸⁷ Shema, Nicole, (2009), "The Failings and Future of Nile Basin Management," Thesis Submitted to Department of political Science of the University of Johannesburg, Johannesburg.

agricultural, industrial and population centers, and the Mediterranean climate separates winter rainy season supplies from peak summer irrigation demands.⁸⁸

Perceiving agriculture, and the supporting water resources, as necessary for the nation's economic and political vitality, the Israeli government has maintained central control over water supplies and management. According to Postel since its founding, the Israeli government has committed substantial resources to increase the efficiency of the country's scarce water supplies through research and development; water allocation, monitoring and pricing structures; and financial incentives.⁸⁹ Israel's first national project, in the 1950s, for example, was the draining of the Huleh swamps just north of the Sea of Gallilee, expanding agricultural land and increasing runoff to the Gallilee, Israel's only major surface reservoir. Its second national project, in the 1960s, was to build the National Water Carrier, to bring approximately 500 mcm/year from the Gallilee to the coastal plains, which contain the bulk of Israel's population, agriculture and industry.⁹⁰

Israel's water supplies, however, depend not only on conditions within its borders. The Jordan River is shared with four other political units - Lebanon, Syria, Jordan, and the Palestinian Authority - and the hydrologic interdependency of these countries and territory has become increasingly apparent as utilization rates within the Jordan basin increase. Along the Jordan River, interactions over water issues between Palestinians in the West Bank and Gaza and Israelis shift repeatedly, subjugated as they are to the constantly-changing political climate. Interaction between the unborn state of Palestine and Israel have changed in form from military occupation from 1967-1994 to cold relations as partners in the Oslo political process from 1994 until roughly 2000.

As levels of demand continue to rise in a region marked by significant resource supply constraints, disputes between Israel and its co-riparian neighbors over water have not been an uncommon occurrence. These disputes have included not only numerous verbal exchanges but also two incidents of armed conflict between Israel

⁸⁸ Shema, Nicole, (2009), "The Failings and Future of Nile Basin Management," Thesis Submitted to Department of political Science of the University of Johannesburg, Johannesburg.

⁸⁹ Postel 1999

⁹⁰ Wolf, A. T. 2000a. "Hydrostrategic territory in the Jordan Basin: Water, war, and Arab-Israeli peace negotiations." in Wolf, A. and H. Amery (Eds.). *Water in the Middle East: A Geography of Peace*. Austin, USA: University of Texas Press.

and Syria in the early 1950s and mid-1960s over proposed water development projects.⁹¹

If a causal relation between the Water Event Intensity Scale and conflict classifications were hypothesized, one would expect to find water-related ‘events’ along the Jordan River ranging in intensity from “extensive war acts causing deaths, dislocation or high strategic costs” to “strong verbal expressions displaying hostility in interaction”.⁹² Certainly there is enough evidence to support this claim. The Palestinian Hydrology Group (PHG), for instance, has documented the effects of 2000-2004 Israeli military activity and less-intense levels of violence on water resources and water infrastructure. Their report reveals that over the four-year period, approximately 137 communities throughout Palestine suffered indiscriminate or deliberate damages to their water networks, primarily due to Israel Defense Forces armoured personnel carriers, tanks and bulldozers.⁹³ Israeli settlers in the West Bank, as non-state actors, have intentionally damaged traditional Palestinian springs near Yanun in October 2002⁹⁴ and Madama on several occasions.⁹⁵ The extent of the damages to the water sector has been estimated by various international organisations at between 50 and 200 million dollars.⁹⁶

The water in Palestine and Israel is a highly politicized – or securitized – issue a quick review of the media shows hundreds of articles and expressions of interest, usually during a drought period or following a high-profile incident. Consider briefly the Wazzani Springs dispute in 2002 which resulted in Israeli war drum-beating and official threats of intervention to counter a small Lebanese drinking-water project along a tributary to the Hasbani River.⁹⁷ Under the banner of national security, the Israeli public’s attention was effectively diverted away from much more serious

⁹¹ Ibid

⁹² Shema, Nicole, (2009), “The Failings and Future of Nile Basin Management,” Thesis Submitted to Department of political Science of the University of Johannesburg, Johannesburg.

⁹³ PHG. 2004. *Water for Life - Israeli Assault on Palestinian Water, Sanitation and Hygiene During the Intifada*. Ramallah, West Bank, Palestinian Hydrology Group, European Community Humanitarian Office, Oxfam- Great Britain p, 55

⁹⁴ Ibid p, 60

⁹⁵ Oxfam. 2003b. *Palestine village encases spring in concrete to thwart further settler attack*. Oxford, UK: Oxfam Great Britain.

[Online.] URL: http://www.oxfam.org.uk/what_we_do/where_we_work/israel_palterr/springconcrete.htm

⁹⁶ EWOC (2002). *Water and Wastewater Situation in the West Bank Governorates During and Following the IDF Re-occupation March, April 2002 - Draft Interim Report*. Jerusalem: Emergency Water Operations Centre (USAID, UNDP, Oxfam).

⁹⁷ IMFA. 2002a. *Cabinet Communique - 16 September 2002*. Tel Aviv, Israel: Israel Ministry of Foreign Affairs Cabinet Secretariat. [Online.] URL: <http://www.mfa.gov.il/MFA/MFAArchive>

internal water-management issues.⁹⁸ Consideration of the Israel - Palestine security complex is also instructive, the power-balance is greatly tilted in favour of the regional hegemon, and that Israel enjoys a position of dominance in four of the sectors.

Apparent linkage between water and non-water events can also be seen in more recent movements towards peace in the region. In the 1990s, Israel signed two bilateral peace agreements, both of which included substantial provisions concerning shared water: the 1994 Treaty of Peace between Israel and Jordan and the 1995 Israeli- Palestinian Interim Agreement on the West Bank and the Gaza Strip.⁹⁹ In the 1994 agreement, Israel and Jordan outlined the allocation of shared surface and groundwater supplies and agreed to cooperate in the areas of supplementing water supplies and improving the quality of shared water sources.¹⁰⁰ The 1995 interim agreement between Israel and the Palestinian Authority, while postponing full elaboration on water sharing units until permanent status negotiations are held, did incorporate joint water sharing principles and provided for the establishment of cooperative water sharing mechanisms.

2.4 Tigris-Euphrates River Dispute

The Tigris and Euphrates Rivers, originating in Turkey and cutting through both Syria and Iraq, have experienced drastic reductions in water flows in recent years due, primarily, to Turkish hydro-engineering and regional droughts.¹⁰¹ This is of significance for Iraq, which has historically prospered because of the rich agricultural harvests based on water supplies sourced from these waterways.¹⁰² Turkish initiatives aimed at massively expanding their exploitation of the water from the two rivers have coincided with severe droughts in the region and resulted in a burgeoning water-shortage crisis in Iraq.¹⁰³ This problem threatens an environmental catastrophe. Political negotiations between the three countries have so far fallen short of reaching

⁹⁸ Zisser, E. 2002. "Israel and Lebanon: The Battle for the Wazzani." *Tel Aviv Notes - An Update on Political and Strategic Developments in the Middle East, No. 50*. Moshe Dayan Center for Middle Eastern and African Studies / Jafee Center for Strategic Studies, Tel Aviv University.

⁹⁹ Shema, Nicole, (2009), "The Failings and Future of Nile Basin Management," Thesis Submitted to Department of political Science of the University of Johannesburg, Johannesburg.

¹⁰⁰ Ibid

¹⁰¹ Reynolds, Patrick, (2013), "A swathe of hydro projects, both large and small, are under development or in construction across the middle of Africa".

¹⁰² Ibid

¹⁰³ Ibid

agreement on providing the necessary increases in flow rates to address the deteriorating situation in Iraq.

Under the rule of the Ottoman Empire, the Tigris-Euphrates River Basin was effectively managed. After the collapse of the empire in 1922, and the establishment of the independent states of Turkey, Syria and Iraq, these rivers became a shared resource with the potential for conflict.¹⁰⁴ Iraq has historically been the predominant user of water from these rivers and a large network of Karez, or man-made underground irrigation channels, has existed there for centuries. This was not a problem in the early and mid-twentieth century, as Turkey and Syria did not develop expansive systems using dams and irrigation. When this began to change in the 1970s, however, Iraq's claim to the bulk of the basin's water resources was suddenly under threat.

In 1975, unilateral water developments came very close to leading to warfare along the Euphrates River. The three riparians to the river- Turkey, Syria, and Iraq - had been co-existing with varying degrees of hydro-political tension through the 1960s. At that time, population pressures drove unilateral developments, particularly in southern Anatolia (Turkey), with the Keban Dam (1965-73), and in Syria, with the Tabqa Dam.¹⁰⁵ Additional tensions between Turkey and Syria involving Syrian support for Kurdish separatists (Kurdish Worker's Party, or PKK) and Turkey's military support for Israel have exacerbated the water dispute.¹⁰⁶ Military tensions flared between Turkey and Iraq in 1997, as Turkey invaded northern Iraq to attack Kurdish rebels in the area.¹⁰⁷ In August of 1998, Turkey threatened military action against Syria if it continued to support the PKK.¹⁰⁸

The Southeast Anatolia Development Project (GAP is the Turkish acronym) has given a sense of urgency to resolving allocation issues on the Euphrates.¹⁰⁹ GAP is a massive undertaking for energy and agricultural development that, when completed, will include the construction of 21 dams and 19 hydroelectric plants on

¹⁰⁴ Reynolds, Patrick, (2013), "A swathe of hydro projects, both large and small, are under development or in construction across the middle of Africa".

¹⁰⁵ Lowi, Miriam (1991). *West Bank Water Resources and the Resolution of Conflict in the Middle East*. Paper presented for the project on Environmental Change and Acute Conflict, June 15-17, 1991.

¹⁰⁶ Mideast Mirror (1998). *Turkey-Syria crisis: Saudis to join mediation efforts*. 12 (195), 9 October.

¹⁰⁷ Mideast Mirror (1997), *Turks attacks northern Iraq after renewing mandate of U.S.-led force*. 11 (2). 2 January.

¹⁰⁸ Middle East Newsfile. (1998). *OIC offers to mediate between Turkey, Syria*. 18 October.

¹⁰⁹ Ibid

both the Tigris and the Euphrates.¹¹⁰ Over one million hectares of land are to be irrigated and 26 billion kWh will be generated annually with an installed capacity of 7,500 MW. If completed as planned, GAP could significantly reduce downstream water quantity and quality.

Turkey's decision to begin the construction of GAP drew immediate criticism from both Syria and Iraq. Both countries knew the extent of this project meant they would inevitably experience reduced availability of water resources and this resulted in significantly heightened tensions in the region.¹¹¹ The completion of Syria's Tabqa Dam in 1975 brought Syria and Iraq to the brink of war, as this coincided with the start of GAP and with a drought in Iraq that created serious shortages of water resources. In 1990, Turkey mobilised its forces when it cut the Euphrates to fill the Atatürk Dam, temporarily reducing water flow into Syria and Iraq by 75 per cent. Iraq threatened to blow up the dam, which led Turkey to threaten to cut off the water flow to Syria and Iraq completely.

Tensions between these countries remain high because of the issue of water management. A number of droughts in Iraq in recent years has increased the likelihood of conflict in the future as years of duress caused by water shortages are making the Iraqi people increasingly desperate.¹¹² With projections by the Intergovernmental Panel on Climate Change indicating a changing climate and the potential for a permanent decrease in rainfall, add in rapidly increasing populations and all the ingredients required to create major conflict in the future exist.

Turkey will continue to construct GAP with an expected completion date of 2017. Once finished, it is projected to withdraw up to 70 per cent of the Euphrates' water, which is likely to lead to a further deterioration in Iraq's, already dire situation and exacerbate the strained relations between the two countries.¹¹³ Earlier Iraq threatened to take its case for an increase in water flows from Turkey and Syria to the UN, a significant escalation in the rhetoric between the three countries.¹¹⁴ This may be a precursor to an increasingly aggressive stance by Iraq towards its northern

¹¹⁰ Ibid

¹¹¹ Reynolds, Patrick, (2013), "A swathe of hydro projects, both large and small, are under development or in construction across the middle of Africa".

¹¹² Oestigaard, Terje, (2012), *Water Scarcity and Food Security along the Nile: Politics, Population Increase and Climate Change*, Uppsala: Nordiska Afrikainstitutet.

¹¹³ Ibid

¹¹⁴ Reynolds, Patrick, (2013), "A swathe of hydro projects, both large and small, are under development or in construction across the middle of Africa".

neighbours. As water is the most fundamental and crucial resource to sustain life, the seriousness of water shortages in Iraq inflicted by Turkey and Syria cannot be underestimated.

A Protocol of the Joint Economic Committee was established between Turkey and Iraq in 1980, which allowed for Joint Technical Committee meetings relating to water resources. Syria began participating in 1983, although meetings have been intermittent at best.¹¹⁵ A 1987 visit to Damascus, Syria, by Turkish Prime Minister Turgut Ozal reportedly resulted in a signed agreement for the Turks to guarantee a minimum flow of 500 m³/sec across the border with Syria. According to Kolars and Mitchell, this total of 16 BCM/yr is in accordance with prior Syrian requests. However, according to Naff and Matson, this is also the amount that Iraq insisted on in 1967, leaving a potential shortfall.¹¹⁶ A tripartite meeting between Turkish, Syrian and Iraqi ministers was held in November 1986, but yielded few results.

Talks between the three countries were held again in January 1990, when Turkey closed the gates to the reservoir on the Ataturk Dam, the largest of the GAP dams, essentially shutting off the flow of the Euphrates for 30 days. At this meeting, Iraq again insisted that a flow of 500 m³/sec cross the Syrian-Iraqi border. The Turkish representatives responded that this was a technical issue rather than one of politics and the meetings stalled. The Gulf War that broke out later that month precluded additional negotiations.

In their first meeting after the war, Turkish, Syrian, and Iraqi water officials convened in Damascus in September 1992, but broke up after Turkey rejected an Iraqi request that flows crossing the Turkish border be increased from 500 m³/sec to 700 m³/sec. In bilateral talks in January 1993, however, Turkish Prime Minister Demirel and Syrian President Assad discussed a range of issues intended to improve relations between the two countries. Regarding the water conflict, the two agreed to resolve the issue of allocations by the end of 1993. Prime Minister Demirel declared at a press conference closing the summit that, "There is no need for Syria to be anxious about the water issue. The waters of the Euphrates will flow to that country whether there is

¹¹⁵ Ibid

¹¹⁶ Reynolds, Patrick, (2013), "A swathe of hydro projects, both large and small, are under development or in construction across the middle of Africa".

an agreement or not".¹¹⁷ Despite this pledge, no agreement was reached in the allocated timeframe.

In February 1996, a joint Syria-Iraq water coordination committee convened in Damascus, where the two sides discussed what would be a fair and reasonable distribution of the Euphrates and Tigris between Turkey, Syria, and Iraq. In this meeting, Syria and Iraq decided to coordinate their positions on the water dispute. In May of the same year, Turkey called on Syria to engage in talks over water. Turkey wanted to resolve the dispute by dividing water by cultivated land, whereas Syria wanted to divide the water equally.

Tension between Syria and Turkey escalated in late 1998 over Kurdish rebels. To avert invasion by Turkey, Syria agreed to ban the PKK from Syria with the signing of the Adana Agreement on October 20, 1998.

¹¹⁷ Gruen, G. (1993). Recent Negotiations Over the Waters of the Euphrates and Tigris. In *Proceedings of the International Symposium on Water Resources in the Middle East: Policy and Institutional Aspects, Urbana, IL, October 24-27*.

CHAPTER THREE

HYDROPOLITICS AND REGIONAL SECURITY IN THE NILE BASIN

3.0 Introduction

At the end of the twentieth century the Nile hydrological system is of major economic significance to two of its riparians, Egypt and the Sudan; its waters could be of economic significance to at least four of its other riparians. A number of forces external to the Nile Basin have shaped the history of water resource development in the Basin in the past century. During the first half of the twentieth century the Basin, and especially its waters was influenced by the interests of the United Kingdom¹¹⁸ which directly and indirectly controlled the political economies of most the Basin except Ethiopia. Ethiopia and Eritrea were also under the control of a colonial power, Italy, from the first decade of the twentieth century until the World War of 1939-1945 Italy had no impact on the management of Nile water resources. Britain was very influential in that it was so pre-occupied with the economy of Egypt that it used its considerable power to ensure that there was no diminution of flows of water to Egypt through the development of works in its upper riparian colonies in the Lakes Basin of East Africa – Uganda, Kenya and Tanzania. Evidence of this commitment were the terms of the 1929 Nile Waters Agreement which stated that there should no such works in Uganda and the other Lake Basin colonies.¹¹⁹

Further, the share of the flow between The Sudan and Egypt should be four per cent to The Sudan and Egypt should be four per cent to The Sudan and ninety six per cent to Egypt. These were the shares and terms accepted by the colonial administrations of the United Kingdom.¹²⁰ The end of European colonialism was confirmed by the fall of the compliant Egyptian regime of Farouk in 1953 and subsequently by the independence of the rest of the Nile Basin during the 1960s. The fully independent Egyptian Government of 1952 led by President Nasser immediately addressed the issue of water security by initiating the High Dam project at Aswan. The approach was contentious as by then many engineers and hydrologists felt that a more economical and environmentally considerate way of dealing with the control of the annual flood of the Eastern Nile tributaries coming out of Ethiopia would be to

¹¹⁸ Collins, R.O., 1990, *The waters of the Nile: hydropolitics and the Jonglei Canal. 1898-1988*, Oxford: Clarendon Press

¹¹⁹ Ibid

¹²⁰ Ibid

store the water in the mountains of Ethiopia where storage could be achieved with much less evaporation.¹²¹

3.1 Pre-Colonial Period

Since the 12th century, Christian Ethiopia (C.E) kings warned Muslim Egyptian sultans of their power to change the course of the Nile waters, often in reaction to the religious conflicts.¹²² Nonetheless, these were imaginary threats. The Nile has been vital for Egypt and Sudan's civilization.¹²³ Herodotus famously wrote in the 5th century B.C.E, that Nile is a gift to the Egyptians. Millions of people have travelled along the river's banks and its tributaries. Many ethnic groups in Ethiopia, Egypt and Sudan have common engineering, architectural, traditions and ideas of political and religious organization, alphabets and languages, agricultural practices and food.¹²⁴

In the 3000 B.C.E., when the first dynasty in Egypt unified the upper and lower parts of the Nile, there were no countries in Central or Eastern Africa to dispute Egypt's use of the Nile waters. Then, the Nile was a mystifying god, at times vengeful, at times beneficent. Floods that could occur from June to September of the year, could wipe out whole villages through drowning many people.¹²⁵ Floods also resulted in the brown silt that was necessary to nourish the delta, one of the globe's fertile agricultural regions, feeding Egypt and its neighbors. In fact, the river's importance to Egypt's life is depicted in the Hymn to the Nile that was documented in the Papyrus Sallier II.¹²⁶

The river's seasonal flooding is also pivotal theme in Egypt's history. It has a regular flow patterns. It increases between May and July, peaks in September, and then recedes till the next year. But its volume is irregular, as recorded in nilometers.¹²⁷ Successive dynasties of Pharaohs, Greeks, Romans, Christian Copts as well as Muslims always celebrated the increasing water volumes in the Nile and fear

¹²¹ Hurst, H. E. and Phillips, 1933, *The Nile Basin, II*, Cairo: Physical department, Ministry of Works, Government Press.

¹²² Collins, R. O. (2002). *The Nile. New Haven and London: Yale University Press.*

¹²³ Ibid.

¹²⁴ Erlich, H. (2002). *The Cross and the River: Ethiopia, Egypt, and the Nile. Boulder and London: Lynn Rienner Publishers.*

¹²⁵ Ibid.

¹²⁶ Cascão AE (2009). Changing power relations in the Nile river basin: Unilateralism vs. Cooperation? *Water Alternatives* 2(2), pp. 245-268

¹²⁷ Collins, R. O. (2002). *The Nile. New Haven and London: Yale University Press.*

droughts and floods.¹²⁸ Five millennia of the river's history indicates the way years with increased water levels produced sufficient food, increased population, and wonderful monuments, as during the initial five empires from 3050 B.C.E. to 2480 B.C.E. times of low water caused disorder and famine in the area. For instance, the Book of Genesis accounts for the seven year famine period that historians relate with the 1740 B.C.E.'s drought.¹²⁹

Since the Pharaohs' time to 1800 C.E., Egypt experienced an increased population that fell between two and five million. This was because of availability of food and epidemics. The 19th century irrigation projects, Ottoman ruler, Mohammad Ali permitted whole year cultivation, leading to a population growth from 4 to 10 million.¹³⁰ From the time the Aswan High Dam was opened in 1971, Egypt's population has risen from around 30 to 83 million people. In spite the significance of the Nil River to the downstream country, its origin remained a mystery until mid 20th century. Herodotus believed that the Nile originated from Mophi and Crophi peaks.¹³¹

In 140 C.E., Ptolemy suggested that River Nile originated from the now Ruwenzori Mountains, initially called the Mountains of Moon. The 11th century Arab geographer, Al-Bakri suggested that it originated from West Africa, confusing it with Niger River.¹³² In the 1770, James Bruce, a Scottish explorer discovered that it originates from Ethiopia; while in 1862, John Hanning Speke believed it originates from Lake Victoria. Its restricted navigability heightened its mystery. It was until 20th century that River Nile was known to be a wide river system including streams, tributaries, and lakes, and that it flows to Mediterranean Sea and originates from as far as Burundi and Ethiopian highlands.¹³³

Egypt and Ethiopia have had a lasting relationship of both discord and harmony. Discord has always been caused by religious matters as well as the Nile waters. Ethiopia's initial well recognized rule was in Aksum, a city state that ruled a wide empire from the Ethiopia highlands to Yemen across the Red Sea.¹³⁴ From 100 to 800 C.E., Aksumites took part in the Indian Ocean and Mediterranean trade. The

¹²⁸ Henze, P.B. (2000). *Layers of Time: A History of Ethiopia*. New York: Palgrave Macmillan.

¹²⁹ Tignor, R.L. (2010). *Egypt: A Short History*. Princeton and Oxford: Princeton University Press.

¹³⁰ Ibid.

¹³¹ Casção AE (2009). Changing power relations in the Nile river basin: Unilateralism vs. Cooperation? *Water Alternatives* 2(2), pp. 245-268

¹³² Ibid.

¹³³ Collins, R. O. (2002). *The Nile. New Haven and London: Yale University Press*.

¹³⁴ Henze, P.B. (2000). *Layers of Time: A History of Ethiopia*. New York: Palgrave Macmillan.

cultural affiliation between Ethiopia and Egypt was institutionalized when the when the Aksumite King Ezana was converted into Christianity in 330 C.E. Ethiopia were greatly manipulated by the Middle East, even writing their Biblical, state and geographic stories.¹³⁵ The Muslim defeat of Egypt in 640C.E placed Christian Ethiopia in a defensive situation. Since the Ethiopian Orthodox Church was subordinate to the Alexandria's Orthodox Church, and that Egypt had been taken over by Islam, Ethiopians got suspicious and bitter about Egypt's control on a Christian bishop's appointment.¹³⁶ Consequently, the Ethiopians started claiming power over Egypt by using the Nile. During the meetings, the Ethiopian ruler, Lalibela threatened vengeance by changing the course of the Tekeze River from its northern pathway, where it enters Sudan and becomes Atbara before joining the Nile. This possible diversion of the Nile by Ethiopia was first documented by Coptic Scholar, Jurjis al-Makin, in the 13th Century.¹³⁷

It is worth noting that the stories about Ethiopia's rule over the Nile motivated the 14th century European legend, Prester John. In 1510, he returned to Ethiopia with Alfonso d' Albuquerque, a Portuguese explorer, who saw that the diversion of the Nile to the Red Sea was likely to destroy Egypt.¹³⁸ In 1513, d'Albuquerque requested the Portuguese king for skilled workers to dig tunnels. Nevertheless, the plan was unsuccessful. But the dispute between Ethiopia and Egypt persisted, usually as proxy wars between Muslims and Christians on Ethiopia's southeastern and northern borderlands. The 16th century Ethiopian offensive by Ahmad Gagn, a Muslim imam from Adal Sultante, was perceived as an Egyptian dispute. In the 19th century, Ethiopia and Egypt contested for dominion over the upper Nile basin and Red Sea. This climaxed in 1876 during the Batle of Gura, the current Eritrea, here the Ethiopians gave a humiliating trounce to the Egyptian military.

3.2 Colonial Period

During the colonial era, the Europeans scrambled and partitioned Africa for specific interests. This period greatly complicated the already existing conflict over the Nile River between Egypt and Ethiopia. In 1882, England colonized Egypt. On the other hand, Ethiopia emerged victorious during its battle of Adwa with Italians in

¹³⁵ Ibid.

¹³⁶ Cascão AE (2009). Changing power relations in the Nile river basin: Unilateralism vs. Cooperation? *Water Alternatives* 2(2), pp. 245-268

¹³⁷ Ibid.

¹³⁸ Collins, R. O. (2002). *The Nile. New Haven and London*: Yale University Press.

1896. This made Ethiopia become the only African country to gain independence during colonial period. This period led to creation of new nations in the Nile Basin including Uganda, Eritrea, Burundi, Rwanda, Tanganyika and Kenya, which started a fresh competition for territory and resources.¹³⁹

Egypt boasted of the Nile Delta region that was productive for agriculture. When the Suez Canal was completed in 1869, Egypt provided easy accessibility to the Indian Ocean and Red Sea. For the British, rule over Egypt implied more lucrative trade with India, its most affluent colony. For the French, the Suez Canal provided a faster access to Indochina, its most productive colony. In the late 19th century, dominating Egypt was vital for the Asian wealth. Since Egypt heavily depended on the Nile, the main colonial goal was to control its source. In 1898, the contest for the rule of the Nile Basin by the French-English heightened in Fashoda.¹⁴⁰

The French envisaged an idea of constructing a dam on the White Nile in order to weaken the British influence downstream and create east-west dominion of Africa. Therefore, they planned an astounding pincer group with some soldiers traversing Ethiopia in East Africa, and others crossing Congo in West Africa.¹⁴¹ Upon hearing this plan, the British organized a huge military group to retaliate on the proposed dam's site, hence defeating the French. In 1899, the two colonial rulers agreed to give France parts of the Congo River, while the White Nile frontiers went to England.¹⁴²

It was through Fashoda incident that the Europeans realized their limited understanding of the Nile River. Most of them thought it originated from the Equatorial lakes including Kyoga, Victoria, Albert and Edward. The English also focused on planning ways of increasing the White Nile water supplies.¹⁴³ They wanted to create a channel that would increase water transfer via the great swamp, by establishing the Jonglei Canal. This was among the most costly engineering initiatives

¹³⁹ Abdallah, H. (2009). Contemporary Civil Conflicts in the Nile Basin States. *Digest of Middle East Studies*. Accessed on 17th July, 2015

from <http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=41989556&site=ehost-live>

¹⁴⁰ Hillawi, T. (1998). The Nile River Basin: Its Use and Development AddisAbaba. *Quarterly Magazine of Foreign Minister of Ethiopia*, 4 (1), pp. 13-23.

¹⁴¹ Cascão AE (2009). Changing power relations in the Nile river basin: Unilateralism vs. Cooperation? *Water Alternatives* 2(2), pp. 245-268

¹⁴² Mason, S., (2003). From Conflict to Cooperation in the Nile Basin: Interaction Between Water Availability, Water Management in Egypt and Sudan, and International Relations in the Eastern Nile Basin. PhD Thesis, Swiss Federal Institute of Technology, Zurich.

¹⁴³ Sisay, G. (2005). *The Hydro-Politics of the Nile: Past, Present and Future*. New York; NY. Wiley & Sons.

in the continent.¹⁴⁴ Nevertheless, the Sudan's People Liberation Army stopped the project in 1984 because of the great disruption it caused on the lives of the native upper Nile communities. If the 300 mile Jonglei Canal had been successfully completed, it would have raised the water supply by about 4 Billion Cubic Meters into the White Nile.¹⁴⁵

The Nile treaty talks began in the colonial era as the British attempted to maximize their agricultural productivity in the Nile Delta. In 1902, the British got an appointment from Menelik II, the then Ethiopian Emperor. This was meant to make consultations on the possible Blue Nile water initiatives, particularly on Lake Tana.¹⁴⁶ As the colonial power in East Africa, agreements with Tanganyika, Kenya, Uganda and Sudan were pro forma, domestic colonial issues. After independence in 1922, Egypt began negotiations with British Colonies on the 1929 Nile Waters Agreement.¹⁴⁷ This agreement entitled Egypt to 48 billion cubic meters of the Nile water, entire dry season water supplies, and veto-power on any upstream water management plans. Sudan got independence in 1956 and was allocated 4 billion cubic meters of Nile water. The Ethiopian emperor was not involved in the negotiation because it was not clear how much of the Nile river originated from Ethiopia.¹⁴⁸

Later, before the other upstream states in the Nile Basin attained their independence, the 1959 Nile Water Agreements was signed between Sudan and Egypt. In the treaty, Egypt was entitled 55.5 billion cubic meters yearly, while Sudan was allocated 18.5 billion cubic meters.¹⁴⁹ These 79 billion cubic meters signified 9% of the average yearly flow. Besides, the agreement enabled for the building of the Aswan High Dam (in Egypt), the Roseires Dam (on the Blue Nile), and Khashm al-Girba Dam (in Atbara River). The agreement negatively impacted the upstream states

¹⁴⁴ Cascão AE (2009). Changing power relations in the Nile river basin: Unilateralism vs. Cooperation? *Water Alternatives* 2(2), pp. 245-268

¹⁴⁵ Okidi, O., (1994). History of the Nile and Lake Victoria Basins through Treaties, in Howell, P. P. and Allan, J. A., eds., *The Nile: Sharing a Scarce Resource*. Cambridge: Cambridge University Press.

¹⁴⁶ Sisay, G. (2005). *The Hydro-Politics of the Nile: Past, Present and Future*. New York; NY. Wiley & Sons.

¹⁴⁷ Daniel, K. (1999). Egypt and the Hydro-politics of the Blue Nile River. *Northeast African Studies, Henderson; Henderson State University*, 6 (1-2), pp. 141-169.

¹⁴⁸ Abdallah, H. (2009). Contemporary Civil Conflicts in the Nile Basin States. *Digest of Middle East Studies*. Accessed on 17th July, 2015

from <http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=41989556&site=ehost-live>

¹⁴⁹ Mason, S., (2003). From Conflict to Cooperation in the Nile Basin: Interaction Between Water Availability, Water Management in Egypt and Sudan, and International Relations in the Eastern Nile Basin. PhD Thesis, Swiss Federal Institute of Technology, Zurich.

that it motivated the Nyerere Doctrine that asserted that ex- colonies was not obligated to obey any treaties signed for them by the British.¹⁵⁰

3.3 Post Colonial Period

Haile Selassie was angered by President Nasser's segregation of Ethiopia in the 1959 agreement, and in the plans to construct the Aswan High Dam. He discussed the 1959 end of the 1600-year institutional marriage between Ethiopian Orthodox Church and Orthodox Church in Alexandria. He also started planning for numerous dams on the Blue Nile and its streams.¹⁵¹ In a Nasser's response, he encouraged the Muslims in Eritrea to separate from Ethiopia. He also persuaded Muslim Somalis to battle over the liberation of the Ogaden region in Ethiopia. Ethiopia won the battle with Somalia in 1977-78 and kept the Ogaden. The 30 year war with Eritrea, an ally to Egypt, was very costly. Haile Selassie was defeated in 1974, and when Eritrea got independence in 1993, Ethiopia became a landlocked country.¹⁵²

In mid 1980s, there was no rain in the Ethiopian highlands; hence a serious water shortage both upstream and downstream. As a result, one million people died in Ethiopia and this was worsened by the Civil war it had with Eritrea.¹⁵³ Egypt avoided the crisis but Aswan Dam's turbines were almost closed; hence creating electricity outage.¹⁵⁴ Additionally, crops died in the delta; thus the possibility of famine. Consequently, Egyptians realized that Aswan High Dam was not a total solution for their dependence on the Nile. In 1987, the Egyptian and Ethiopian rulers abandoned threats and focused on cooperation and reconciliation.¹⁵⁵

In the 1990s, rains returned in Ethiopia and Hosni Mubarak redoubled the attempts that were started by Sadat to establish the Toshka Canal. This is one of the most costly and grand irrigations projects.¹⁵⁶ It would use 10% of the Lake Nasser in

¹⁵⁰ Tesfaye, A. (2005). *Hydropolitics and Regional Stability in the Nile Basin*. William Paterson University. Pp. 1-11

¹⁵¹ Collins, R. (1999). *Smoothing the Waters: The Nile Conflict*. University of California: IGCC Policy Briefs.

¹⁵² Wolf, A.T., Newton, J.T. (2013). *Case Study of Trans-boundary Dispute Resolution: the Nile Waters Agreement*. Institute for Water and Watersheds. Accessed on 5th June 2015 from http://www.transboundarywaters.orst.edu/research/case_studies/Nile_New.htm.

¹⁵³ Daniel, K. (1999). Egypt and the Hydro-politics of the Blue Nile River. *Northeast African Studies, Henderson; Henderson State University*, 6 (1-2), pp. 141-169.

¹⁵⁴ Ibid.

¹⁵⁵ Tesfaye, A. (2005). *Hydropolitics and Regional Stability in the Nile Basin*. William Paterson University. Pp. 1-11

¹⁵⁶ Mason, S., (2003). *From Conflict to Cooperation in the Nile Basin: Interaction Between Water Availability, Water Management in Egypt and Sudan, and International Relations in the Eastern Nile Basin*. PhD Thesis, Swiss Federal Institute of Technology, Zurich.

irrigating the sandy part of Egypt's Western Desert; hence intensified Egypt's need for the Nile water, even though it maintained the 1959 water agreement.¹⁵⁷ Ethiopian Prime Minister, Meles Zenawi was angered by this. He therefore protested that Egypt was using the Nile to convert the Sahara Desert, while Ethiopia that contributes 85% of the Nile Waters was denied the chance of using the same water to feed her people. Consequently, Zenawi started planning for the Grand Renaissance Dam.¹⁵⁸ The International Water Law has not been successful in resolving the differences regarding the Nile water ownership.¹⁵⁹

In the Helsinki Agreement that was signed in 1966, the idea of equitable shares was raised, but the issue was revisited in 1997 United Nations Convention Non-Navigational uses of International Watercourses.¹⁶⁰ In 1999, another proposal of equitable shares was brought about through the Nile Basin Initiative, and this involved all the affected states.¹⁶¹ Unfortunately, the initiative did not solve the dispute between Sudan and Egypt claims for the historic rights and upstream states claims for equal shares.¹⁶² In 2010, the Cooperative Framework Agreement was signed by six upstream countries that sought more Nile water shares. These states included Uganda, Kenya, Ethiopia, Tanzania and Burundi. However, Sudan and Egypt snubbed the agreement since it challenged their original water rights.¹⁶³

In February 2011, the Entebbe Agreement was signed between Kenya, Tanzania, Uganda, Ethiopia, Burundi, Rwanda and South Sudan. This was aimed at increasing the share of the Nile waters among these states at the expense of the down-river streams. In response, Egypt and Sudan refused to be part of the agreement

Okidi, O., (1994). History of the Nile and Lake Victoria Basins through Treaties, in Howell, P. P. and Allan, J. A., eds., *The Nile: Sharing a Scarce Resource*. Cambridge: Cambridge University Press.

¹⁵⁷ Abdallah, H. (2009). *Contemporary Civil Conflicts in the Nile Basin States*. Digest of Middle East Studies. Accessed on 17th July, 2015

from <http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=41989556&site=ehost-live>

¹⁵⁸ Arsano Y, T.I. (2005). Ethiopia and the eastern Nile basin. *Aquatic Sciences* 67(1), pp.15-27

¹⁵⁹ Abdallah, H. (2009). *Contemporary Civil Conflicts in the Nile Basin States*. *Digest of Middle East Studies*. Accessed on 17th July, 2015

from <http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=41989556&site=ehost-live>

¹⁶⁰ Tesfaye, A. (2005). *Hydropolitics and Regional Stability in the Nile Basin*. William Paterson University. Pp. 1-11

¹⁶¹ Al masry al youm (2010). Nile River Politics. Accessed on 16th July, 2015 from <http://almasryalyoum.com/en/.../nile-river-politics>

¹⁶² Kazimbazi, E.B. (2010). The impact of colonial agreements on the regulation of the waters of the River Nile. *Water International*, 35, (6): 718–32.

¹⁶³ Karuhanga, J. (2010). *East Africa: Nile Basin Ministers to Meet in Ethiopia*. Accessed on 17th July, 2015 from < <http://www.allafrica.com/sories/201006250002.html> >

claiming that it was unsuitable for them as well as infringing on their historic water rights.¹⁶⁴ Most recently, on 24th March, 2015, Sudan, Ethiopia and Egypt signed a declaration of principles regarding the Grand Ethiopia Renaissance Dam.¹⁶⁵ This is a sign of a paradigm shift among the three countries as they are now focusing on cooperation rather than threats. The declaration is crucial in investigating the consequences of the Dam on the other countries' water supply. The deal allows the countries to share the Nile waters without hurting each other's interests.¹⁶⁶

3.4 Tension in the Nile River Basin

The Nile has been identified as a hot spot where war over water in this basin is predicted by many. For instance Boutros Boutros-Ghali, the former State Minister for Egyptian Foreign Ministry, in 1988 stated his fear of war over the Nile, while Ismail Serageldin, the former vice president of the World Bank and the previous UN Secretary General Kofi Annan supported this argument as they stated their fear of water wars of the next century. The involvement of the basin countries in the long existing controversies varies with great variance in their degree of dependency on the river which mainly emanated from difference in availability of alternative resource and varying amount of the respective areas lying within the basin.¹⁶⁷

For instance to Egyptians, the River Nile implies their very existence. It is literally the life line of the Egyptians.¹⁶⁸ 98% of the population lives in the Nile valley except for the small Mediterranean strip and narrow Nile valley which is just a vast desert. Nearly 98% of their fresh water resource comes from the Nile satisfying 95% of the country's water requirement.¹⁶⁹ The country hardly receives any rainfall increasing its dependency on the river and its vulnerability to changes in water supply. In other words, any development regarding Nile is perceived as security matter for Egyptians. As a result, often in their history Egyptian leaders have sought to unify the

¹⁶⁴ Nile Basin Initiative (1999- 2010). *Nile Basin Initiative*. Accessed on 16th July, 2015 from <<http://www.nilebasin.org>>

¹⁶⁵ The Ethiopia Observatory, TEO. (24th March, 2015). Full text of the 'Declaration of Principles' between Ethiopia, Egypt and Sudan have signed to govern Nile River water use. *The Ethiopia Observatory*. Accessed on 17th July, 2015 from <http://ethiopiaobservatory.com/2015/03/24/full-text-of-the-declaration-of-principles-betweenethiopia-egypt-and-sudan-have-signed/>

¹⁶⁶ Ibid.

¹⁶⁷ Ibid

¹⁶⁸ ibid: 28

¹⁶⁹ Abdallah, H. (2009). Contemporary Civil Conflicts in the Nile Basin States. *Digest of Middle East Studies*. Accessed on 17th July, 2015 from <http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=41989556&site=ehost-live>

Nile valley under their rule in order to conquer the areas of the sources of the Nile.¹⁷⁰ This intention of Egyptians has brought them into conflict with other riparian countries when Egypt made several military expeditions with the objective of controlling the Nile Basin. This particularly created a long standing diplomatic tension with Ethiopia which provides 86% of the annual flow of the river. This was seen in the battle of Gundet in 1875 and Gura in 1876 which was fought between the two countries are the main manifestations of this demand of Egyptians.¹⁷¹

Sudan is also heavily dependent on the River after Egypt. Most of the land in Sudan is either arid or semi-arid as the northern area of Sudan containing about 30% of the country is desert bordering a semi-arid Sahelian region of low mountains in the central area of the country. This has denied the country the capability to maintain rain fed agriculture. So, they highly depend on the Nile for irrigational schemes that currently brought most of the country's foreign earnings. As a result, like Egyptians, Sudanese also do not want any change in the supply of the water. Nile traverses the entire land of the Sudan where the White Nile and the Blue Nile meets under its territory giving Sudanese like Egyptians a base for argument of absolute territorial integrity rights to the river.¹⁷²

Though for long Sudan and Egypt cooperate on the Nile, tension has been experienced between the two countries due to varying demand that Sudan government has placed on Egypt and the existence of low trust levels between the two countries. For Egypt to main their dominance on the river Nile they have thrived on giving several military threats to other states. For instance, former president Mubarak made clear that "those who play with fire in Khartoum ... will push us to confrontation and to defend our rights and our live."¹⁷³ The duality cannot be totally considered as cooperation rather can be seen as imposition or manipulation from Egyptians. But above all, the main rivalry exists between these two downstream riparian countries on one hand and Ethiopia on the other as the latter provides a huge amount of water.¹⁷⁴

¹⁷⁰ Daniel, K. (1999). Egypt and the Hydro-politics of the Blue Nile River. *Northeast African Studies, Henderson; Henderson State University*, 6 (1-2), pp. 141-169.

¹⁷¹ Ibid

¹⁷² Sisay, G. (2005). *The Hydro-Politics of the Nile: Past, Present and Future*. New York; NY. Wiley & Sons.

¹⁷³ Ibid

¹⁷⁴ Daniel, K. (1999). Egypt and the Hydro-politics of the Blue Nile River. *Northeast African Studies, Henderson; Henderson State University*, 6 (1-2), pp. 141-169.

Ethiopia, as well, highly needs to utilize the water as more than half of the country is either arid or semi-arid. The remaining parts are also highly affected by seasonality of rainfall or lack of another permanent source of water except the Nile and its tributaries.¹⁷⁵ So, Ethiopia greatly needs to utilize these resources to its development as it is one of the low income countries in the world. It frequently faces food insecurity and drought and this has been worsened by the reason that 79% of Ethiopian population is engaged in rain fed agriculture, which has been decreasing over time.

In order to improve its people's life, the country has been forced to depend on the Nile as a way out.¹⁷⁶ This is what Emperor Haile Selassie tries to point out in his speech in the 1950s as he state that "It is of paramount importance to Ethiopia, a problem of the first order that the waters of the Nile be made to serve the life and the needs of our beloved people now living and those who will follow us in centuries to come." This indicate that the future of Ethiopia depends on utilization of available water resources including Abbay, Tekeze and Baro-Akobo that consists 85% of the Nile water supply resulting an increased water tension with the lower riparian states.¹⁷⁷

On the other hand, except Ethiopia other upstream countries depend less on the Nile leading to different needs and political priorities from the above three. Rwanda, Burundi and DRC have relatively less interest in utilizing the river rather are more concerned on their other water resources.¹⁷⁸ Kenya, Tanzania and Uganda are more concerned with the development of the Equatorial lakes than the Nile. These countries also have other water resources that help them to satisfy their water need. Eretria also has additional rivers including Gash, Baraka, Ansebe, Falkat, Labaa, and Alighede. In addition, in most of these countries agriculture without irrigation is possible since they have sufficient precipitations. This does not mean that they never use the Nile water. They want and have utilized the water for different reasons but their reliance is very low compared to the two downstream countries and the

¹⁷⁵ Tignor, R.L. (2010). *Egypt: A Short History*. Princeton and Oxford: Princeton University Press.

¹⁷⁶¹⁷⁶ Iyer, Ramaswamy. 2003. "Relations With Neighbours." *Water: Perspectives, Issues, Concerns*. New Delhi: Sage Publications India Pvt. Ltd.

¹⁷⁷ Institute for Defence Studies and Analyses. 2010. *Indo-Bangladesh Relations: An enduring partnership*. New Delhi

¹⁷⁸ Lowi, M. 1993. *Water and Power - The Politics of a Scarce Resource in the Jordan River Basin*. Cambridge, USA: Cambridge University Press.

importance of the river for Ethiopia as these countries receive less or for some nearly no rainfall and as they lack other sustainable and meaningful water sources.¹⁷⁹

So, the availability of alternative water resources has lessened these upstream states involvement in the existing controversies while drawing Egypt, Sudan, and Ethiopia as crucial players in the conflict. Due to being a new state and as a result of current internal instabilities, South Sudan has not been a significant participant in hydropolitical issues of the basin.¹⁸⁰ However, the coming of South Sudan into existence may bring two important changes in the future. The first is change in the number of the crucial players with the summation of South Sudan, if it able or gain the capacity to be one. It is also a change in regime in one of the main players (Sudan), affecting its role/capacity in the basin. But since nothing has been seen regarding effective role of South Sudan and the low involvement of other countries, the study focus on the existing rivalry among Ethiopia, Sudan and Egypt.¹⁸¹

The main issue of conflict in the Nile basin is lack of equitable share of water among the riparian countries. Upstream countries, particularly Ethiopia which provide 85% of the water of the Nile, utilize almost nothing of it. Yet the lower riparian countries contribute nothing but consume most of it. Downstream countries, especially, Egypt has high capacity of exploitation of the river that emanates from geographical, economical and historical circumstances that have obtained in the country. Its economic advancement has enabled the country to build different projects on the river. In addition, Egypt has got advantage from the British colonialism as the latter helped Egypt to utilize the Nile water resources while prohibiting other riparian states from utilizing it. Especially, the 1959 agreement gave Egypt and Sudan effective control of the water of the Nile. Though Ethiopia was not part of this agreement, it was not engaged in any effective activity regarding the river as it was unable to do so because it was occupied in struggling to maintain its territorial integrity and political independence during the colonial era. As a result it had neither the time nor the resources to utilize the water of the Nile.¹⁸²

¹⁷⁹ Ibid

¹⁸⁰ Wolf, A. T. 2000a. "Hydrostrategic territory in the Jordan Basin: Water, war, and Arab-Israeli peace negotiations." in Wolf, A. and H. Amery (Eds.). *Water in the Middle East: A Geography of Peace*. Austin, USA: University of Texas Press.

¹⁸¹ Ibid

¹⁸² Wolf, A. T. 2000a. "Hydrostrategic territory in the Jordan Basin: Water, war, and Arab-Israeli peace negotiations." in Wolf, A. and H. Amery (Eds.). *Water in the Middle East: A Geography of Peace*. Austin, USA: University of Texas Press.

Since 1959, Egypt has made repeated statements about its readiness to use military force to protect its share of the river's water that is stated under the agreement. In line with this, Ethiopia has faced threats many times as Egypt stated the declaration of war in fear of supply change in the water volume. They frequently declared that the only reason that will take Egyptian to war is water. For instance, in 1978 former Egyptian President Sadat stated that "we depend upon the Nile 100 percent in our life, so if anyone, at any moment thinks to deprive us of our life we shall never hesitate [to go to war] because it is a matter of life or death".

Even today Egypt wants to block upstream countries from utilizing the water resources through blocking financial deal from international partners. For instance "the African Development Bank denied a loan to Ethiopia that was aimed at harnessing Abbay (Aleltu Hydro-electric Project) as Egypt managed to have the loan blocked using its diplomatic leverage". On the other hand, though they prevent others from utilizing it, Egypt has constructed different dams and barrages which secure the existence of water throughout the whole year without any consultation or reference to upstream countries. Such developments include the Aswan dam, Sinai and Kharga/Dkhala water diversion projects. Sudanese also have done the same making water utilization in the basin a unilateral action without notifying the upstream states or considering its effect as if Nile is their resource only.

This status quo cannot be maintained for long as the current development keeps on arising. The upper riparian countries are forced to utilize the water resource as a result of different factors including rapidly increasing population, economic advancements, and the decrease in availability of the amount of water particularly that of rainfall. So these countries "claim their right to equitable water distribution". But these factors are not only the problems of upstream countries'. They are also escalating downstream countries demand for increased water resources.¹⁸³

In addition, climatic change has put another strain on the existing problem as the need for water that is resulted from aridity, expansion of drought, and desiccation has aggravated the existing scarcity. Most of all, "the flow of the Nile River is expected to decline beginning in the period 2040 to 2069" from "declines associated with low rainfall due to increased deforestation. Particularly for agricultural

¹⁸³ Zisser, E. 2002. "Israel and Lebanon: The Battle for the Wazzani." *Tel Aviv Notes - An Update on Political and Strategic Developments in the Middle East, No. 50*. Moshe Dayan Center for Middle Easter and African Studies / Jafee Center for Strategic Studies, Tel Aviv University.

dominated economy of the basin countries, this is an elevated threat as the effect of water shortages will threaten food security which could potentially lead to the outbreak of violence in the absence of comprehensive international management.

Along with population growth, another important trend is the expanding economic growth in the basin. An increase in countries economic development along river Nile will give the states power to pursue significant projects over the river that they were not able to achieve before. Current changes in the basin including large scale irrigation, huge hydroelctrical dams, and formation of new towns indicate the increased economic growth along river Nile. However, such developments will not satisfy all as it may take place at the expense of others as can be seen from Egyptian projects in Sinai and Aswan. Most of all, in line with growing number of population, the existing economic advancements that compiled with rapid urbanization have heightened the demand for water. These demands are incompatible particularly giving the existing scarcity of water which fails to fulfill the existing demands by the two sides.¹⁸⁴

With the sharp increase of population in the coming decades, every riparian country may not only feel more need but also the obligation to utilize its water resources to maximum levels. Such demands are already soaring beyond the level of available water resources in the entire basin. Egypt and the Sudan have projected their water needs for agriculture alone at 65.5 BCM. This amount is slightly higher than the total available water in the Nile Basin. This is a clear indication that when all countries along river Nile come up with their respective national water master plans the available water resources and national demands will be at irreconcilable variance.

Thus, the increasing number of population and economic developments are furthering the tension in the Nile basin as they are creating competition among riparian countries for utilization of water in attempt to sustain the current economic development and growing population.

3.5 Summary

The Nile basin countries are affected by colonialism and cold war rivalries resulting in long existing instabilities that had potentially explosive conflicts in the 1970s and 1980s. Except Ethiopia which had never been colonized, all of these states are “young sovereign states”. Since independence, though these states made several

¹⁸⁴ Ibid

attempts to establish stable governments, they have failed to do so as a result of many reasons including colonial legacies, different military coups, imposition of one party rule and ethnic and power driven conflicts. Colonial powers contributed to the existing conflicts as they randomly drew and imposed international borders that have a huge potential for ethnic clashes as can be seen today. What worsened the situation was the existing heterogeneous nature of the basin countries in terms of their ideological orientations, political and economic systems, and ethnic and religious compositions. These conflicts had been further aggravated by Cold War superpower competition for client regimes including selective use of aid by donors and massive dumping of military hardware. For such a volatile region, these actions are pressing causes for distorting domestic politics and interstate relations in the basin.

In the immediate post-Cold War era, nearly all of the riparian states engaged in domestic conflicts leading some on the verge of collapse or fragmentation. In Sudan an active and very costly civil war raged between the central government in Khartoum and the South Sudan rebellions for long leading the division of the country into two in 2011. Such, fragmentation, if continued, will highly complicate the existing water problem in the basin.

However, according to Fekhamed Negash, such developments will be problems if only the new comers bring new agendas. If not, they will not affect the current relations of the basin states unless the issue of water allocation rose in the future. In addition, the instability in the collapsed state of Somalia has extended its problem to its neighboring states, particularly to Ethiopia, as a result of its unification attempts. The two countries had interred to war in 1977 with the former demanding the separation of the regional state of Ogaden. This is not the only military conflict Ethiopia engaged to protect its territorial integrity. Ethiopia had fought the secessionist movements of Eritrea since the time of Emperor Haile Sellassie, finally leading to the secession of the latter.

In addition, it had engaged in long domestic conflicts as the previous government engaged to suppress internal rebellion movements. Such instabilities had also been the main manifestation of other basin states as they were engaged in either internal or cross border conflicts. These instabilities has highly affected the countries development and hindered them from utilizing the river as it took their attention to bringing inner stabilities and keeping their territorial integrity. The lack of trust among the countries also evaded the ground for cooperation at the time.

The instabilities had been further aggravated by political interventions among the basin countries. Especially Egypt, for Fikahemed Negash and Abebe Aynete has been ensuring that the upstream riparian states remain weak, unstable, and underdeveloped and thus incapable of constructing large water projects that may pose a serious challenge to its share of water. They further argued that, even today Egypt has been accused of instigating dissent and helping rebellions in other basin countries especially in Sudan and Ethiopia.

However, the political environment has changed particularly after 2000 where the basin countries start to gain more political stability and focus on the existing poverty. So, according to Zerubabel, previous military conflicts including proxy wars have become less significant. These developments, in addition with favorable international political dynamics, have highly improved the riparian relations particularly among the upstream states. Such cooperative integration is manifested through the existing regional institutions including IGADD, East African Community and joint infrastructures constructed among the countries including roads and hydropower dams. It can also be seen from their stand as a block in AU Economic commission. So, the upstream countries, especially Ethiopia is highly challenging the long existing hegemony of Egyptians expecting to bring a balance soon.

But still the issue of current instability in Egypt and South Sudan must be solved to strengthen existing cooperation achievements. According to Fikahmed Negash and Abebe Aynete, political instability has always negative impact as their will be lack of understanding among the series leaders and difficulty in reaching long term decisions. Though put in insignificant percentage, they fear that, the need for legitimacy also may bring immature decisions by the new leaders in Egypt which may create conflict in the basin. In addition, despite change of government in Egypt, the leaders who seize power always consider Nile as a national security matter. This stand of Egyptians toward the River has highly strengthened as it got recognition under their new constitution of 2014. This fact has further complicated the dilemma and indicated that change on the Egyptian side is unthinkable despite change of government. In addition to its impact on other riparian countries, instability in Egypt has been a problem to its interest in the basin. The Egyptians has been unable to withstand their internal instability for quite some time which is in turn is affecting the countries long existing dominance on the river as it forced them to turn their face towards the inner problems.

CHAPTER FOUR

A CRITICAL ANALYSIS OF THE IMPACT OF WATER POLITICS ON REGIONAL SECURITY IN THE NILE BASIN

4.0 Introduction

The River Nile is an extremely unique international river system. Globally, there are 261 major international river basins which transverse through 145 states. The Danube River Basin, in central Europe, crosses 17 national boundaries, while the Nile River is the second passing through 11 countries.¹⁸⁵ The longest river in the world, the Nile is estimated to be over 6, 800 km in the length flows from south to north before it discharges its water into the Mediterranean Sea. The major tributaries of the River Nile are the White Nile and Blue Nile. The White Nile drains its waters from the great equatorial plateau lakes of Burundi, Rwanda, Tanzania, Kenya, the Democratic Republic of Congo (formerly known as Zaire), Uganda, and now South Sudan. The Blue Nile, on other hand, draws its water from the Ethiopian highlands, which provides about 86 percent of the total flow into the Nile, 84 BCM.¹⁸⁶ The sources of the Nile are found in humid regions with an annual rainfall of about 1,000 mm.

In South Sudan rainfall varies from 1200 to 1500 mm annually; and further to the north the rainfall falls to about 20 mm per year. In Egypt, the annual rainfall is estimated to less than 20 mm per year.¹⁰⁹ The Nile basin countries occupy different portions of the total area of a country within the basin. Some are small, and others are dominant. For example, a country like the DRC, the Nile basin forms only a very small (0.7 percent) part of its territory.¹⁸⁷ Although, countries like Burundi, Rwanda, Uganda, and Egypt are fully contained within the Nile basin.¹⁸⁸ The water in Burundi and Rwanda, as well as more than half of the waters in Uganda are produced internally while most of the water resources of Sudan and Egypt flows from outside their borders.

Sub-Sahara Africa, and, in particular the Nile basin is predicted to be further stressed by water scarcity. This means that inter-state water conflict is very likely to

¹⁸⁵ Helga Haftendorn, "Water and International Conflict" (Working Papers, International Studies Association 40th Annual Convention Washington, DC, 16-20 February 1999)

¹⁸⁶ FAO Corporate Documentary Repository, "Irrigation Potential in Africa: A Basin Approach," <http://www.fao.org/docrep/w4347e0k.htm>

¹⁸⁷ Ibid

¹⁸⁸ Ibid

break out in the region. To put this claim into perspective, it is critical to understand some of the factors that have given rise to the aggressive competition over the water resources among the Nile basin states.

4.1 Geographical Features

The Nile River Basin stretches over distinct geographical, climatological and topographical regions. Traveling 6695km Nile is the longest river in the world located between 40S and 310N and 240E and 400E.¹⁸⁹ The basin area spans over 3.18 million square kilometer stretching from Lake Victoria in South Central Africa to the Mediterranean Sea. It covers 10 percent of African continent comprising Egypt, Sudan, Ethiopia, South Sudan, Uganda, Rwanda, Kenya, Tanzania, Burundi, Democratic Republic of Congo and Eritrea.¹⁹⁰ The important geographic features of the basin include the Nile and headwaters, mountains, wetlands, lakes, plains, the Delta, and the desert. The Nile has two major tributaries named as the White Nile and the Blue Nile (Abbay).¹⁹¹ The White Nile flows through large parts of equatorial Africa, which enjoys substantial amount of rainfall distributed the whole year. Its catchment area comprises portions of all basin states' territories except that of Egypt.¹⁹² The White Nile originates in Burundi from the Luvironza River that drains into Lake Victoria through Ruvubu and Kagera Rivers. After leaving its primary source, Lake Victoria, the White Nile flows through Lake Albert and northern Uganda to South Sudan border becoming Bahr al Jabal. Bahr al Jabal forms Bahr al Abyad or the White Nile with another major tributary from Ethiopia known as Baro-Akobo/Sobat.¹⁹³ The White Nile provides a small but steady flow of water where from its origin to the sea, the river drops in elevation by nearly half a mile, creating a huge potential for hydroelectricity generation in Tanzania and Uganda.¹⁹⁴

¹⁸⁹ NBI, (2012), State of the River Nile Basin, Brighton: Myriad Editions.

¹⁹⁰ Timmerman, Jos, G., (2005), "Transboundary River Basin Management Regimes: the Nile Basin Case Study", Background Report to Deliverable 1.3.1 of the NeWater Project, Lelystad.

¹⁹¹ Karyabwite, Rizzolio, D., (2000), Water Sharing in the Nile Valley, Geneva: UNEP.

¹⁹² Oestigaard, Terje, (2010), Nile Issues: Small Streams from the Nile Basin Research Programme, Kampala: Fountain Publishers.

¹⁹³ NBI, (2012), State of the River Nile Basin, Brighton: Myriad Editions.

¹⁹⁴ Swain, Ashok, (2002), "The Nile River Basin Initiative: Too Many Cooks, Too Little Broth," SAIS Review, Vol. 22, No. 2, pp. 293-308.

The Equatorial Lakes Region accounts for only 15 percent of the Nile's yearly flow as the White Nile loses a considerable amount of water to evaporation and to swamp areas near its source.¹⁹⁵ Abbay or Blue Nile, on the other hand, rises at a spring site upstream of Lake Tana of Ethiopia.

The Abbay/Blue Nile basin extends from the Ethiopian highlands to the plains of Sudan including numerous tributaries. Starting from here it flows through various gorges and shallows of its homeland to west then north until it eventually meets the White Nile at Khartoum carrying tons of mud and silt along its course.¹⁹⁶ Before reaching Khartoum, it is joined by two seasonal tributaries, the Rahad and Dinder Rivers, and Tekeze River, all of which originate in the Ethiopian highlands.¹⁹⁷ Abbay has a steep slope as its elevation drops to less than one third of a mile above sea level giving Ethiopia a high potential for hydropower generation. It provides 85% of the yearly flow of the Nile.¹⁹⁸ At Khartoum the Blue Nile or Bahr al Azraq joins the White Nile. From there the Nile flows northeast through the desert, to Egypt and later to the Mediterranean Sea.¹⁹⁹

The black sediment brought down by the Tekeze/Atbarah and Abbay/Blue Nile Rivers settle in the Nile delta making it very fertile, which in turn leads to dense population in the area.²⁰⁰ Approximately 84 billion cubic meters (BCM) of water flow each year to Lake Aswan in Egypt. However, due to the extreme reliance on the river, only about 0.4 (BCM) actually reach the Mediterranean Sea.²⁰¹ The important geographical feature that has a significant impact on the hydrogeopolitics of the Nile basin is the high evaporation rate. Much of the landscapes and terrain the river covers are arid or semi-arid areas making evaporation rate very high.²⁰² Aside from evaporation from White Nile as it proceed to northward into the arid regions of South Sudan and evaporation from Lakes along it, the river loses approximately 14BCM of water through evaporation from the Sudd swamps which is nearly equal to the water

¹⁹⁵ Ibid

¹⁹⁶ Timmerman, Jos, G., (2005), "Transboundary River Basin Management Regimes: the Nile Basin Case Study", Background Report to Deliverable 1.3.1 of the NeWater Project, Lelystad.

¹⁹⁷ NBI, (2012), State of the River Nile Basin, Brighton: Myriad Editions.

¹⁹⁸ Elhance, Arun, P., (1999), *Hydrogeopolitics in the Third World: Conflict and Cooperation in International River Basins*, Washington DC: United States Institute of Peace Press.

¹⁹⁹ Timmerman, Jos, G., (2005), "Transboundary River Basin Management Regimes: the Nile Basin Case Study", Background Report to Deliverable 1.3.1 of the NeWater Project, Lelystad.

²⁰⁰ Elhance, Arun, P., (1999), *Hydrogeopolitics in the Third World: Conflict and Cooperation in International River Basins*, Washington DC: United States Institute of Peace Press.

²⁰¹ Shema, Nicole, (2009), "The Failings and Future of Nile Basin Management," Thesis Submitted to Department of political Science of the University of Johannesburg, Johannesburg.

²⁰² NBI, (2012), State of the River Nile Basin, Brighton: Myriad Editions.

contributed to the Nile by the BarroAkkobo/Sobat River. In addition, evaporation rate is significant after Khartoum, as the Nile flows through the desert without any perennial source of water. The rate of evaporation is highly challenging in Egypt also where almost 10 BCM of water is evaporated particularly from its reservoir in Lake Nasser of the country.²⁰³ This has contributed for water scarcity problem in the basin.

The seasonal fluctuation of rainfall has added to the scarcity problem in the Nile basin. Rainfall pattern highly fluctuates particularly in the Ethiopian highlands. For instance, Abbay is characterized by significant seasonal fluctuations where during the flood season it yearly flow extends to 95%.²⁰⁴ This has brought available water resources (especially Abbay) as a crucial alternative for their development. Above all, Egypt and Sudan lacks the necessary rainfall amount for survival while most part of Ethiopia is also arid or semi-arid leading increased dependency on the Nile.

There are estimations for the existence of large aquifers underneath of Egypt's, Sudanese and Ethiopian's territory, which has a capacity to avoid any problems related to water paucity. Nevertheless, economic weakness and fear of environmental damages stand in the way of utilization of these resources.²⁰⁵ In addition, the average annual flow of the Nile has been declining over the years due to climate change. For instance in 1960s, the average annual flow of the river in Aswan dam was estimated at 110 billion cubic meters. However, it has declined to around 80 billion cubic meters.²⁰⁶

So, as a result of the above factors water has become a scarce resource in the basin where riparian states get into controversies in time of utilization. The impossibility of navigation along the Nile River except for a limited length has also affected the hydropolitics of the Nile basin.²⁰⁷ In one hand, its absence has avoided potential controversies over freedom of navigation.²⁰⁸ On the other hand, however, if the river had such quality, it would have improved riparian states' relations as it would have integrated them by serving as a route. The capacity of the river for generating hydropower also has a huge impact on the hydropolitics of the basin. On

²⁰³ Elhance, Arun, P., (1999),Hydropolitics in the Third World: Conflict and Cooperation in International River Basins, Washington DC: United States Institute of Peace Press.

²⁰⁴ NBI, (2012),State of the River Nile Basin, Brighton: Myriad Editions.

²⁰⁵ Ibid

²⁰⁶ Swain, Ashok, (2002), "The Nile River Basin Initiative: Too Many Cooks, Too Little Broth," SAIS Review, Vol. 22, No. 2, pp. 293-308.

²⁰⁷ Ibid

²⁰⁸ Elhance, Arun, P., (1999), Hydropolitics in the Third World: Conflict and Cooperation in International River Basins, Washington DC: United States Institute of Peace Press.

one hand, the utilization of the river for hydropower by upstream states is creating stress with downstream states while on other hand, expansion of such projects are expected to integrate riparian states in the near future through hydropower trade.

4.2 Economic Features of the Nile Basin

Historically the Nile basin countries particularly the eastern Nile basin countries were the land of great ancient civilizations witnessing the great Pharaonic civilization of Egypt, the ancient state of Merowe and the Aksumite Empire of ancient Ethiopia.²⁰⁹ However, these countries today are categorized among underdeveloped states with weak economies and food deficiency. They frequently face drought conditions and famine leading them to be the major recipients of aid and incurring them into huge debts.²¹⁰ Their huge dependency on ineffective agriculture has further weakened their economy. Agriculture, particularly subsistence agriculture and cattle raising, is the primary economic activity without a single state having strong industrial sector in the basin.

Despite such long coverage, however, agriculture is not effective as it fails to give significant contribution to the economy of the countries leaving them to be a net importer of agricultural commodities.²¹¹ In addition, the rapidly increasing number of population is putting a strain on this weak economy. Currently there are more than 400 million people living in the basin countries, which are expected to reach 600 million in 2025 and 850 million in 2050. To the existing poverty in the region, this amount of change in population number has been a huge strain to the economy.²¹² Population growth, in line with poverty, is also leading to environmental threats such as overgrazing, and deforestation in upstream states.²¹³

So, the Nile basin and its water resources are central to the survival of the riparian states, where they use it to protect themselves against the vagaries of nature, to enhance their food security, to develop cash-generating crops, and to develop

²⁰⁹ Ibid

²¹⁰ Mason, Simon, A., (2003), "From Conflict to Cooperation in the Nile Basin", PHD Dissertation submitted to the Swiss Federal Institute of Technology, Zurich

²¹¹ Chesire, David, K., (2007), "Control over the Nile: Implications across nations", MA Thesis submitted to Naval Postgraduate School Monterey, California.

²¹² ENTRO, (2006), "Social Atlas: Easter Nile Basin Countries". Available at <http://www.inbonews/IMG/pdf/Nile-Flood>,

²¹³ Onema, Kileshye, J., Taigbenu, A.E., Twikirize, D., (2006), "Challenges to the Implementation of the Nile Basin Initiative in the Equatorial Region".

energy for economic development.²¹⁴ In line with this, the Nile River is used for irrigation, hydropower generation, navigation, and municipality uses. As the countries are highly dependent in agriculture, it is common to find vast irrigated land along the river especially in the downstream countries, which occupy 98.7% of the irrigated land in the Nile basin. Nile serves as a transportation route and for industries in these countries.²¹⁵ Hydropower generation is also highly vast particularly in upstream countries with many hydropower projects including that of Tana Beles, Bujagali, and Ruzizi I power plants lying under these countries.²¹⁶

In addition, upstream countries have a larger demand and are taking different developmental activities for expansion of hydropower projects which are creating intensification of tensions in the basin. These countries failed to utilize the water of the Nile in significant manner for long due to different reasons including their weak economies and colonial legacies. Except Egypt most of the countries used to lack the basic infrastructure and human resources that are needed to implement and maintain large development projects on the Nile River.²¹⁷ However, recently they are showing a rapid economic growth rate which has given them monetary capacity to pursue new development projects along the river that threatens to tip the scale of total control and consumption of the Nile's fresh waters away from Egypt. Though Egypt is still farther ahead of these countries, average annual growth rates over the last decade indicate further utilization of the river by these countries.²¹⁸ This is what one can understand from current developments in the basin particularly from the construction of big projects like that of GERD, and Ruzizi III and IV hydropower projects on the Nile.²¹⁹ Aside from creating tension with downstream states, these projects particularly GERD, may also integrate the upstream countries through hydropower trade.

In line with the huge dependency by downstream countries, these projects have heightened the tension in the Nile basin. Downstream states are highly

²¹⁴ Timmerman, Jos, G., (2005), "Transboundary River Basin Management Regimes: the Nile Basin Case Study", Background Report to Deliverable 1.3.1 of the NeWater Project, Lelystad.

²¹⁵ Chesire, David, K., (2007), "Control over the Nile: Implications across nations", MA Thesis submitted to Naval Postgraduate School Monterey, California.

²¹⁶ Bartle, Alison, ed, (2013), "World Atlas and Industry Guide: Hydropower and Dams", The International Journal on Hydropower and Dams.

²¹⁷ Elhance, Arun, P., (1999), *Hydropolitics in the Third World: Conflict and Cooperation in International River Basins*, Washington DC: United States Institute of Peace Press.

²¹⁸ Oestigaard, Terje, (2012), *Water Scarcity and Food Security along the Nile: Politics, Population Increase and Climate Change*, Uppsala: Nordiska Afrikainstitutet.

²¹⁹ Reynolds, Patrick, (2013), "A swathe of hydro projects, both large and small, are under development or in construction across the middle of Africa". Available at <http://www.internationalwaterpoweranddamconstruction.com>

dependent on the Nile River. As they lack rain water, these countries rely almost entirely on irrigated agriculture extracting 75% of the Nile water every year. Nearly the entire Egyptian population is settled along the Nile Valley and the Delta with 40% of their work force engaging in agriculture. Sudanese also are heavily dependent on irrigational agriculture where Gezira Scheme alone constitutes 60% of the country's foreign earnings. Nile is also the only source of water for other uses of these countries.²²⁰

Their reliance over the river is highly increasing with the growing population and economic advancement further worsening the problem of the basin since, in response to these developments, downstream states are planning different projects including building new cities in the desert to transfer population away from condensed areas, for extending irrigation so in turn to achieve self-sufficiency, for promoting industrialization, tourism and for improving its environment.²²¹ Therefore, the proliferation of hydropower projects in the upstream countries is perceived by downstream countries, especially Egypt, as impact to their national interests because of the fear that the water volume reaching them might be reduced.

4.3 Political Features of the Nile Basin

The Nile basin countries are affected by colonialism and cold war rivalries resulting in long existing instabilities that had potentially explosive conflicts in the 1970s and 1980s. Except Ethiopia which had never been colonized, all of these states are “young sovereign states”.²²² Since independence, though these states made several attempts to establish stable governments, they have failed to do so as a result of many reasons including colonial legacies, different military coups, imposition of one party rule and ethnic and power driven conflicts. Colonial powers contributed to the existing conflicts as they randomly drew and imposed international borders that have a huge potential for ethnic clashes as can be seen today.

What worsened the situation was the existing heterogeneous nature of the basin countries in terms of their ideological orientations, political and economic systems, and ethnic and religious compositions.²²³ These conflicts had been further aggravated by Cold War superpower competition for client regimes including

²²⁰ Chesire, David, K., (2007), “Control over the Nile: Implications across nations”, MA Thesis submitted to Naval Postgraduate School Monterey, California.

²²¹ Ibid

²²² Elhance, Arun, P., (1999), *Hydropolitics in the Third World: Conflict and Cooperation in International River Basins*, Washington DC: United States Institute of Peace Press.

²²³ Ibid

selective use of aid by donors and massive dumping of military hardware. For such a volatile region, these actions are pressing causes for distorting domestic politics and interstate relations in the basin.

In the immediate post-Cold War era, nearly all of the riparian states engaged in domestic conflicts leading some on the verge of collapse or fragmentation. In Sudan an active and very costly civil war raged between the central government in Khartoum and the South Sudan rebellions for long leading the division of the country into two in 2011. Such, fragmentation, if continued, will highly complicate the existing water problem in the basin.²²⁴ However, according to Fekhamed Negash, such developments will be problems if only the new comers bring new agendas. If not, they will not affect the current relations of the basin states unless the issue of water allocation rose in the future.⁵ In addition, the instability in the collapsed state of Somalia has extended its problem to its neighboring states, particularly to Ethiopia, as a result of its unification attempts. The two countries had interred to war in 1977 with the former demanding the separation of the regional state of Ogaden.²²⁵ This is not the only military conflict Ethiopia engaged to protect its territorial integrity. Ethiopia had fought the secessionist movements of Eritrea since the time of Emperor Haile Sellassie, finally leading to the secession of the latter.

In addition, it had engaged in long domestic conflicts as the previous government engaged to suppress internal rebellion movements. Such instabilities had also been the main manifestation of other basin states as they were engaged in either internal or cross border conflicts. These instabilities has highly affected the countries development and hindered them from utilizing the river as it took their attention to bringing inner stabilities and keeping their territorial integrity. The lack of trust among the countries also evaded the ground for cooperation at the time.²²⁶

The instabilities had been further aggravated by political interventions among the basin countries. Especially Egypt, for Fikahemed Negash and Abebe Aynete has been ensuring that the upstream riparian states remain weak, unstable, and underdeveloped and thus incapable of constructing large water projects that may pose a serious challenge to its share of water.⁶ They further argued that, even today Egypt

²²⁴ Ibid

²²⁵ Ibid

²²⁶ Ibid

has been accused of instigating dissent and helping rebellions in other basin countries especially in Sudan and Ethiopia

However, the political environment has changed particularly after 2000 where the basin countries start to gain more political stability and focus on the existing poverty. So, according to Zerubabel, previous military conflicts including proxy wars have become less significant.⁷ These developments, in addition with favorable international political dynamics, have highly improved the riparian relations particularly among the upstream states. Such cooperative integration is manifested through the existing regional institutions including IGADD, East African Community and joint infrastructures constructed among the countries including roads and hydropower dams. It can also be seen from their stand as a block in AU Economic commission. So, the upstream countries, especially Ethiopia is highly challenging the long existing hegemony of Egyptians expecting to bring a balance soon.

But still the issue of current instability in Egypt and South Sudan must be solved to strengthen existing cooperation achievements. According to Fikahmed Negash and Abebe Aynete, political instability has always negative impact as their will be lack of understanding among the series leaders and difficulty in reaching long term decisions. Though put in insignificant percentage, they fear that, the need for legitimacy also may bring immature decisions by the new leaders in Egypt which may create conflict in the basin. In addition, despite change of government in Egypt, the leaders who seize power always consider Nile as a national security matter. This stand of Egyptians toward the River has highly strengthened as it got recognition under their new constitution of 2014.²²⁷ This fact has further complicated the dilemma and indicated that change on the Egyptian side is unthinkable despite change of government. In addition to its impact on other riparian countries, instability in Egypt has been a problem to its interest in the basin. The Egyptians has been unable to withstand their internal instability for quite some time which is in turn is affecting the countries long existing dominance on the river as it forced them to turn their face towards the inner problems.

²²⁷ ZerihunAbebe, (2014), "Article 44 of Egypt's Constitution: Codifying Historic Wrong on the Nile". Available at <http://www.thereporterethiopia.com/index.php/opinion/commentary/item/1528-article-44-of-egypts-constitution-codifying-historic-wrongs-on-the-nile>

4.4 Tension in the Nile River Basin

The Nile has been identified as a hot spot where war over water in this basin is predicted by many. For instance Boutros Boutros-Ghali, the former State Minister for Egyptian Foreign Ministry, in 1988 stated his fear of war over the Nile, while Ismail Serageldin, the former vice president of the World Bank and the previous UN Secretary General Kofi Annan supported this argument as they stated their fear of water wars of the next century.²²⁸ The involvement of the basin countries in the long existing controversies varies with great variance in their degree of dependency on the river which mainly emanated from difference in availability of alternative resource and varying amount of the respective areas lying within the basin.²²⁹

For instance for Egyptians, the River Nile implies their very existence. It is literally the life giving artery of the country (ibid: 28). 98% of the population lives in the Nile valley were except for the small Mediterranean strip and narrow Nile valley the rest of Egypt is just a vast desert. Nearly 98% of their fresh water resource comes from the Nile satisfying 95% of the countries water requirement.²³⁰ The country hardly receives any rainfall increasing its dependency on the River and its vulnerability to changes in water supply. In other words, any development regarding Nile is perceived as security matter for Egyptians.²³¹

As a result, often in their history Egyptian leaders have sought to unify the Nile valley under their rule in order to conquer the areas of the sources of the Nile. This intention of Egyptians has brought them into conflict with other riparian countries when Egypt made several military expeditions with the objective of controlling the Nile Basin. This particularly created a long standing diplomatic tension with Ethiopia which provides 86% of the annual flow of the river. The battle of Gundet in 1875 and Gura in 1876 which was fought between the two countries are the main manifestations of this demand of Egyptians.

Sudan is also heavily dependent on the River after Egypt. Most of the land in Sudan is either arid or semi-arid as the northern area of Sudan containing about 30%

²²⁸ Sandwidi, Jean, P., Stein, Alexander, J., (2003), "Problems and Prospects in Utilizing International Water Resources: the case of the Nile". Available at <http://www.centerfordevelopment-research-universityofbonn>

²²⁹ Oestigaard, Terje, (2012), *Water Scarcity and Food Security along the Nile: Politics, Population Increase and Climate Change*, Uppsala: NordiskaAfrikainstitutet.

²³⁰ Chesire, David, K., (2007), "Control over the Nile: Implications across nations", MA Thesis submitted to Naval Postgraduate School Monterey, California.

²³¹ Mason, Simon, A., (2003), "From Conflict to Cooperation in the Nile Basin", PHD Dissertation submitted to the Swiss Federal Institute of Technology, Zurich.

of the country is desert bordering a semi-arid Sahelian region of low mountains in the central area of the country. This fact has denied the country a capability to maintain rain fed agriculture. So, they highly depend on the Nile for irrigational schemes that currently brought most of the country's foreign earnings. As a result, like Egyptians, Sudanese also do not want any change in the supply of the water. Nile traverses the entire land of the Sudan where the White Nile and the Blue Nile meets under its territory giving Sudanese like Egyptians a base for argument of absolute territorial integrity rights to the river.

Though for long Sudan and Egypt cooperate on the Nile, it doesn't mean conflict on the water doesn't exist among the two as Egypt doesn't seem to rely on and trust Sudan. This is manifested through several military threats from Egyptians. For instance, former president Mubarek made clear that "those who play with fire in Khartoum ... will push us to confrontation and to defend our rights and our live". So, the duality cannot be totally considered as cooperation rather can be seen as imposition or manipulation from Egyptians. But above all, the main rivalry exists between these two downstream riparian countries on one hand and Ethiopia on the other as the latter provides a huge amount of water.

Ethiopia, as well, highly needs to utilize the water as more than half of the country is either arid or semi-arid. The remaining parts are also highly affected by seasonality of rainfall or lack of another permanent source of water except the Nile and its tributaries. So, Ethiopia greatly needs to utilize these resources to its development as it is one of the poorest countries in the world. It frequently faces food insecurity and drought. What worsen this situation is that 79% of Ethiopian population is engaged in rain fed agriculture where constantly failing rains and irregularity in seasonal rainfall has put a huge strain on agricultural productions. For the country's food production that depends on rain fed agriculture, this has brought huge risk. So, in order to improve its people's life, the country forced to depend on the Nile as a way out. This is what Emperor Haile Selassie tries to point out in his speech in the 1950s as he state that "It is of paramount importance to Ethiopia, a problem of the first order that the waters of the Nile be made to serve the life and the needs of our beloved people now living and those who will follow us in centuries to come." This indicate that the future of Ethiopia depends on utilization of available water resources including Abbay, Tekeze and Baro-Akobo that consists 85% of the Nile water supply resulting an increased water tension with the lower riparian states.

On the other hand, except Ethiopia other upstream countries depend less on the Nile leading to different needs and political priorities from the above three. Rwanda, Burundi and DRC have relatively less interest in utilizing the river rather are more concerned on their other water resources. Kenya, Tanzania and Uganda are more concerned with the development of the Equatorial lakes than the Nile. These countries also have other water resources that help them to satisfy their water need. Eretria also has additional rivers including Gash, Baraka, Ansebe, Falkat, Labaa, and Alighede. In addition, in most of these countries agriculture without irrigation is possible since they have sufficient precipitations.²³² This does not mean that they never use the Nile water. They want and have utilized the water for different reasons but their reliance is very low compared to the two downstream countries and the importance of the river for Ethiopia as these countries receive less or for some nearly no rainfall and as they lack other sustainable and meaningful water sources.

So, the availability of alternative water resources has lessened these upstream states involvement in the existing controversies while drawing Egypt, Sudan, and Ethiopia as crucial players in the conflict.²³³ Due to being a new state and as a result of current internal instabilities, South Sudan has not been a significant participant in hydropolitical issues of the basin. The coming of South Sudan into existence may bring two important changes in the future. The first is change in the number of the crucial players with the summation of South Sudan, if it able or gain the capacity to be one.²³⁴ It is also a change in regime in one of the main players (Sudan), affecting its role/capacity in the basin.²³⁵ But since nothing has been seen regarding effective role of South Sudan and the low involvement of other countries, the study focus on the existing rivalry among Ethiopia, Sudan and Egypt.

The main issue of conflict in the Nile basin is lack of equitable share of water among the riparian countries. Upstream countries, particularly Ethiopia which provide 85% of the water of the Nile, utilize almost nothing of it. Yet the lower riparian countries contribute nothing but consume most of it.²³⁶ Downstream countries,

²³² Johnston, Erin, (2009), "Factors Influencing a Basin Wide Agreement Governing the Nile", MA Thesis submitted to the University of Simon Fraser, Burnaby.

²³³ Williams, Paul.D., (2011), *Horn of Africa: Webs of Conflict and Pathways to Peace*, Washington: The Wilson Center.

²³⁴ Ibid

²³⁵ Knife Abraham, (2006), *Imbalance in Water Allocation Stability and Collaboration within the Nile Basin*, Zealot Printers: Nairobi.

²³⁶ Williams, Paul.D., (2011), *Horn of Africa: Webs of Conflict and Pathways to Peace*, Washington: The Wilson Center.

especially, Egypt has high capacity of exploitation of the river that emanates from geographical, economical and historical circumstances that have obtained in the country. Its economic advancement has able the country to built different projects on the river.²³⁷ In addition, Egypt has got advantage from the British colonialism as the latter helped Egypt to utilize the Nile water resources while prohibiting other riparian states from utilizing it. Especially, the 1959 agreement gave Egypt and Sudan effective control of the water of the Nile. Though Ethiopia was not part of this agreement, it was not engaged in any effective activity regarding the river as it was unable to do so because it was occupied in struggling to maintain its territorial integrity and political independence during the colonial era. As a result it had neither the time nor the resources to utilize the water of the Nile.²³⁸

Since 1959, Egypt has made repeated statements about its readiness to use military force to protect its share of the river's water that is stated under the agreement. In other words it aimed still to prevent any construction on the river by other riparian countries. In line with this, Ethiopia has faced threats many times as Egypt stated the declaration of war in fear of supply change in the water volume. They frequently declared that the only reason that will take Egyptian to war is water. For instance, in 1978 former Egyptian President Sadat stated that "we depend upon the Nile 100 percent in our life, so if anyone, at any moment thinks to deprive us of our life we shall never hesitate [to go to war] because it is a matter of life or death".²³⁹

Even today Egypt wants to block upstream countries from utilizing the water resources through blocking financial deal from international partners. For instance "the African Development Bank denied a loan to Ethiopia that was aimed at harnessing Abbay (Aleltu Hydro-electric Project) as Egypt managed to have the loan blocked using its diplomatic leverage".²⁴⁰ On the other hand, though they prevent others from utilizing it, Egypt has constructed different dams and barrages which secure the existence of water throughout the whole year without any consultation or reference to upstream countries. Such developments include the Aswan dam, Sinai

²³⁷ Sandwidi, Jean, P., Stein, Alexander, J., (2003), "Problems and Prospects in Utilizing International Water Resources: the case of the Nile". Available at <http://www.centerfordevelopment-research-universityofbonn>

²³⁸ Ibid

²³⁹ Oestigaard, Terje, (2012), *Water Scarcity and Food Security along the Nile: Politics, Population Increase and Climate Change*, Uppsala: NordiskaAfrikainstitutet.

²⁴⁰ Elias Ashebir, (2009), "The Politics of the Nile Basin", MA Thesis Submitted to the University of the WitwatersRand, Johannesburg.

and Kharga/ Dkhala water diversion projects. Sudanese also have done the same making water utilization in the basin a unilateral action without notifying the upstream states or considering its effect as if Nile is their resource only.²⁴¹

This status quo cannot be maintained for long as can be seen from current developments. The upper riparian countries are forced to utilize the water resource as a result of different factors including rapidly increasing population, economic advancements, and the decrease in availability of the amount of water particularly that of rainfall. So these countries “claim their right to equitable water distribution”.²⁴² But these factors are not only the problems of upstream countries’. They are also escalating downstream countries demand for increased water resources.

In addition, climatic change has put another strain on the existing problem as the need for water that is resulted from aridity, expansion of drought, and desiccation has aggravated the existing scarcity. Most of all, “the flow of the Nile River is expected to decline beginning in the period 2040 to 2069” from “declines in precipitation and increased evapotranspiration due to heightened temperatures”.²⁴³ Particularly for agricultural dominated economy of the basin countries, this is an elevated threat as the effect of water shortages will threaten food security which could potentially lead to the outbreak of violence in the absence of comprehensive international management.

Along with population growth, another important trend is the expanding economic growth in the basin. Developed economic capability will give the state’s power to pursue significant projects over the river that they were not able to achieve before. Current changes in the basin including large scale irrigation, huge hydroelctrical dams, and formation of new towns manifest this fact. However, such developments will not satisfy all as it may take place at the expense of others as can be seen from Egyptian projects in Sinai and Aswan. Most of all, in line with growing number of population, the existing economic advancements that compiled with rapid urbanization have heightened the demand for water. These demands are incompatible

²⁴¹ Ibid

²⁴² El-Fadel, M, El-Sayeg, Y., El-Fadl, K., Khorbotly, D., (2003), “The Nile River Basin: A Case Study in Surface Water Conflict Resolution”, *Journal of Natural Resources Life Science and Education*, Vol. 32, pp. 107- 117.

²⁴³ Shema, Nicole, (2009), “The Failings and Future of Nile Basin Management,” Thesis Submitted to Department of political Science of the University of Johannesburg, Johannesburg.

particularly giving the existing scarcity of water which fails to fulfill the existing demands by the two sides.

With the sharp increase of population in the coming decades ...every riparian country may not only feel more need but also the obligation to utilize its water resources to maximum levels. Such demands are already soaring beyond the level of available water resources in the entire basin. Egypt and the Sudan have projected their water needs for agriculture alone at 65.5 BCM. This amount is 12.26 BCM higher than the total available water in the Nile Basin. This is a clear indication that when all riparians come up with their respective national water master plans the available water resources and national demands will be at irreconcilable variance.²⁴⁴

Thus, the increasing number of population and economic developments are furthering the tension in the Nile basin as they are creating competition among riparian countries for utilization of water in attempt to sustain the current economic development and growing population.

²⁴⁴ YacobArsano. (2012). "African Programme Meeting Summary: Progress and Prospects of Cooperation in the Nile Basin," Chatham House, Available at <http://www.chathamhouse.org>,

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.0 Conclusion

On the other hand, the weak and agricultural economy, scarcity of water and relatively less favorable political arena has hindered riparian states' cooperation in the Nile basin. Rather, these features have contributed for the existing controversies among the riparian states in the Nile basin. The weak river basin management in the Nile can be seen from continued rivalries among upstream and downstream countries (especially between Egypt and Ethiopia) over utilization of Nile water. For instance, the recent tension between Egypt and Ethiopia emanated from the recent developments on the Nile, and the lack of basin-wide legal institution.

The analysis of this study paints a disturbing picture in the future for the Nile basin countries regarding their current and future water demands not only the countries selected for this study but the entire sub-region. The water demands are extraordinarily high, at the time that the water supply is declining to the lowest point ever in recorded history. There is a general consensus that this is what faces the Nile basin. However, there is no agreement on whether or not such situation can lead countries into war.

The study has revealed that the population along the Nile Basin is big and continues growing. High population has been demonstrated to have a tendency to worsen water scarcity problems which in turn may further water scarcity related tension among riparian countries. For example, Oestigaard²⁴⁵ has asserted that with the existing and expected population... each country will depend more on the Nile for its development and each drop of water will become more precious. Consequently, tension in the basin is exacerbating as states engaged in competition for the scarce water resource of the river in order to satisfy the need of their population.

Settlements along river Nile have been shown to be a source of tension. Many people, especially in Egypt, have settled along the River. Such dense settlement along the river has affected the basin in two ways. First, change in water volume that emanates as a result of human made or natural changes means huge problems for

²⁴⁵ Oestigaard, Terje, (2012), *Water Scarcity and Food Security along the Nile: Politics, Population Increase and Climate Change*, Uppsala: NordiskaAfrikainstitutet.

riparian states especially for downstream states. For example, Elhance²⁴⁶ opines that any changes that have impact on the water volume of the Nile have significant impact on Egypt, as 96% of its population lives in the narrow Nile Valley and Nile Delta, bringing the country into different controversies with other riparian countries in time of utilization. The need for utilization of the river by upstream countries in order to improve their societies' economic status on the other hand is intensifying tension in the basin. According to Zerubabel Getachew, a huge number of populations along the Abbay River particularly those of the highlanders are highly affected by seasonality of rainfall putting them under critical poverty. So, the need to utilize the River is huge where Ethiopia is planning to take different developments on the River including hydropower and irrigational projects. These opposing interests of the two are further complicating their relations.

It is also apparent that both Egypt and Sudan have continued to enjoy their unchallenged rights over the use of the Nile River's water, as accorded to them in the previous water agreements. This is quickly changing with the growing water demands of the upstream riparian countries, which previously have depended mainly on the rain fed agricultural activities for their livelihood. These countries are requesting their fair share of the water. Like Egypt and Sudan, these countries face problems of population growth, food security, urbanization, and irrigation, all of which require higher consumption of water.

The variation in basin-wide cooperative initiatives in turn has created a different capacity of handling tensions related to water resources in the Nile basins. In the Nile basin tension is mainly related to political and economic interests of riparian countries who struggle to secure utilization of the water. On the other hand, the downstream states have been unwilling to let go their long existing hegemony over the water of the Nile. The Nile has been revealed to be of economic significance. The Nile is used as the primary source of water for irrigation, municipality needs, and hydropower generation while Rhine serve as source of drinking water, navigation, for dumping of industrial and household wastes, and for cooling water in industries. Like that of the Nile it also serves as source of employment, hydropower, and irrigation. The Nile basin is known for its weak economy comprising underdeveloped riparian

²⁴⁶ Elhance, Arun, P., (1999),Hydropolitics in the Third World: Conflict and Cooperation in International River Basins, Washington DC: United States Institute of Peace Press. P, 60

countries. Economic activity in the latter is dominated by agriculture where the River is mainly utilized for irrigation. This in turn has brought strain on the existing scarce water resources in the basin as it is a huge water consumptive sector. What worsens the situation is the huge dependency of downstream countries on the Nile as they have no alternative water resources. Egypt and Sudan are almost totally dependent the Nile for their agricultural production where they comprises 97% of irrigational land along the River. Thus, any change in the water volume as a result of upstream countries utilization is considered as a threat to their national interest. The risk of conflict is therefore more probable when a downstream riparian...is highly dependent on river water and is strong in comparison to upstream riparian countries.²⁴⁷

The Hydropolitics of the Nile basin is further complicated by lack of availability of alternative water source. Lack of alternative water sources for downstream riparian states and Ethiopia has aggravated the problem in the Nile River basin. Both Egypt and Sudan depend on the river as they lack the necessary rainfall amount and other water sources to sustain their agriculture and other needs. Ethiopia also highly needs to utilize the River as its most part lacks the necessary rainfall amount and alternative water resources. As a result, stress and competition among these countries is high. Availability of alternative water sources also has affected the degree of concern of riparian states in the Nile basin. As the two downstream countries and Ethiopia lack the necessary alternative water resources to satisfy their water needs, they highly engage in water related issues in the basin. On the other hand, the remaining upstream countries have been less active in such issues as they have the necessary alternative water resources to satisfy their needs. Shema argues that the Eastern Nile countries have a demonstrably higher level of reliance on Nile water than the countries in the Equatorial Lakes region” putting them as the main rivalries in the area where the two downstream states (Egypt and Sudan) struggles to sustain the status quo while Ethiopia is struggling to change it as it start and/ or need to utilize it. As a result, there is variation of concern between the riparian states which has hindered the proliferation of cooperation in the basin.²⁴⁸ If other upstream countries have the same concern like Ethiopia, cooperation initiatives would has been accelerated where there may have been strong legal and institutional initiatives long

²⁴⁷ Shema, Nicole, (2009), “The Failings and Future of Nile Basin Management,” Thesis Submitted to Department of political Science of the University of Johannesburg, Johannesburg. P, 20

²⁴⁸ Ibid 21

ago as these states would have a greater influence together over the downstream states as can be seen in recent initiatives.

Despite the situation in the Nile basin, tensions over pollution and flood management may not occur in the near future because the upstream countries have mostly been and are planning to utilize the river in a better manner that does not affect the environment significantly as they focus mainly on hydropower. This positively contributes for the environment significantly as it protects the environment, water quality, and quantity. This, in turn, can be seen as an opportunity for future cooperation in the Nile basin.

There appears to be prospects for more cooperation. Riparian states of the Nile also have been struggling to bring cooperative initiatives and they have been successful to some extent in negotiating their interest. The signing of the CFA in 2010/2011 by majority of the riparian states is the main witness for this success. In spite of Egypt's unwillingness to cooperate with upstream countries, the momentum of basin-wide initiative is irreversible. Therefore, while the tension still lingers, cooperation is coming out in an immense way in this basin.

From studying the impact of hydro-politics on regional security with a focus on the Nile basin, it can be observed that cooperation is the only way out for achieving development, stability, and better river basin management in international trans-boundary river basins. Further, utilization of rivers in an environmentally friendly way is significant as to avoid current and/or future controversies over international river basins and for better and effective cooperation among riparian states.

5.1 Recommendations

As stated elsewhere, one of the compelling findings of this study is that increasing demand on Nile River water is a vital regional interest. Evidence has consistently shown that the Nile basin is at its greatest level of water stress. This has prompted countries to redesign policies that are aimed at addressing the emerging challenge. If this phenomenon is not dealt with in a manner that it is acceptable to all countries, it may trigger a sub-regional war.

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APPENDICES

Appendix I: Nile Basin States

