

**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
INSTITUTE FOR PEACE AND SECURITY STUDIES**

**THE GRAND ETHIOPIAN RENAISSANCE DAM (GERD) IN
SUSTAINING PEACE AND DEVELOPMENT BETWEEN EGYPT,
ETHIOPIA AND THE SUDAN**

**BY
BEZA DEGEFA TOLOSSA**

**ADDIS ABABA
ETHIOPIA
OCTOBER, 2016**

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APPROVED BY BOARD OF EXAMINERS

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Abbreviations and Acronyms

APA – American Psychological Association

CFA – Comprehensive Framework Agreement

DoP – Declaration of Principles

DRC – Democratic Republic of Congo

FDRE – Federal Democratic Republic of Ethiopia

GDP – Gross Domestic Product

GERD – Grand Ethiopian Renaissance Dam

GERDP – Grand Ethiopian Renaissance Dam Project

GERHDP – Grand Ethiopian Renaissance Hydropower Dam Project

GNI – Growth National Income

GTP I – Growth and Transformation Plan I

HDI – Human Development Index

ILA – International Law Association

IMF – International Monetary Fund

LMFs – Large Marine Ecosystems

MoFA – Ministry of Foreign Affairs

MW – Mega Watt

NB – Nile Basin

NBC – Nile Basin Commission

NBI – Nile Basin Initiative

SADC – Southern African Economic Community

SFG – Strategic Foresight Group

UN – United Nations

UNEP – United Nations Environmental Program

WB – World Bank

WWII – Second World War

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Abstract

The Nile River has provided life for many African generations for centuries. In recent years, as many people have come to highly depend on the resource, this river has come under pressure. The Nile River has its main source from the Blue Nile (Abay), which originates in Ethiopia and constitutes 86% of the total volume of the Nile River. The Nile Basin states utilize the Nile waters primarily for irrigation, hydroelectric power generation, domestic uses, transportation and industrial consumption.

The construction of the Grand Ethiopian Renaissance Dam (GERD) on the Blue Nile Basin is Ethiopia's major step in fulfilling development of its water resources. Although under construction, the GERD is believed to be one of the largest hydroelectric plants in the African continent. The construction of the GERD is to regulate the flow of downstream water as it will give priority to the downstream countries namely Egypt and Sudan. However, there have been ongoing debates and tensions have flared up on whether this project will bring economic and security threats to the region, especially to the three Eastern Nile Basin countries namely Ethiopia, Egypt and Sudan that are mostly affected by the GERD. Accordingly, the aim of the study is to examine the contribution of the GERD in bringing peace and development between Ethiopia, Egypt and Sudan. Primary and secondary data were generated using the planned research methods and technique.

The finding of the study reveals that the Nile River basin countries (except for Egypt and Kenya) face extreme poverty, population growth and climate change which leave Ethiopia prone to potential conflict over the utilization of the river. Although, there have been treaties and agreement over the utilization of the river, most have failed due to disagreements and bias towards the downstream countries of Egypt and Sudan. Thus, the study clarifies and states how the GERD can be a requisite for sustaining cooperation and economic development to the Nile Basin region as a whole, and specifically to Egypt, Ethiopia and Sudan.

Key Terms: Nile, Grand Ethiopian Renaissance Dam (GERD), Cooperation, Development.

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CHAPTER ONE

Introduction

1.1. Background of the Study

The Nile River is a cradle of civilizations that has created ancient polities and empires - the famous Pharaonic civilization of Egypt, the ancient Sudanese State of Merowe and the Aksumite Empire of ancient Ethiopia, were all firmly rooted in the Eastern Nile Basin (Yacob, 2007). Geographically, the Nile River has a length of approximately 6,670 kilometres, making it the longest river in the world (Dumont, 2009; Swain, 2002). The Nile Basin is the third largest in the world covering a total area of 3,135,224 KM². The Nile riparian countries are eleven in number namely: Burundi, Democratic Republic of the Congo (DRC), Egypt, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Uganda and Tanzania (UNEP, 2013) (Figure.1).

The Nile River has its main source from the Blue Nile (Abay), which originates in Ethiopia and constitutes 86% of the total volume of the Nile River. White Nile is shared amongst Tanzania, Rwanda, Burundi, Kenya, Uganda and DRC (Abraham, 2004). The waters of the Eastern Nile Basin mainly encompass Ethiopia, Sudan and Egypt, while a small section of the River Tekeze (Atbara) touches Eritrea near the Ethiopian-Sudanese frontier (Imeru & Yacob, 2004). The Upper Blue Nile/Abay River is one of the main tributaries of the Nile River originating from the Ethiopian highlands flowing to Sudan, where it joins the White Nile at Khartoum to form the main Nile flowing North to Egypt and finally into the Mediterranean Sea (Sirak, 2015).

The Nile Basin states requisite the Nile waters primarily for the utilization of irrigation, hydroelectric power generation, domestic uses, transportation and industrial consumption (Abraham, 2004). Egypt has been the most powerful riparian country in the Nile Basin in the act of utilization of the Nile River. From the time of Ancient Egypt to present, the Nile has been prominent in the Egyptian history and heavily contributes to the Egyptian identity (Daniel A. , 2014). Due to the high dependence of Egypt on the Nile, the Egyptian government is very sensitive about diversions of river water by upstream Nile riparian states (Schoeters , 2013).

In recent years, many countries in the basin have started to utilize the Nile waters for different purposes such as for socio-economic uses including irrigation and as a source of hydro-electricity

power. While the flow of the Nile River has been somewhat affected by the various bio-physical factors in the region, the raging desertification in the countries of the Nile Basin and the abject poverty that characterises the lives of the majority of the peoples of the Nile basin call for a pause and rethinking of the strategies that aim at an equitable and reasonable sharing of the Nile's resources (Deng, 2007).

Though Ethiopia is the water tower of North-East Africa with enormous hydropower potential, the country does not fully utilize its potential (The Gilgel Gibe Affair, 2008). However, in 2005, the FDRE government of Ethiopia released a 25 year national energy master plan and is now undertaking large and small hydropower projects (UNIDO, 2009). In 2011, under the Growth and Transformation Plan I (GTP I) developed by the government of Ethiopia, plans were announced to construct a hydroelectric dam on the Blue Nile (Abay), 60KM East of its border with Sudan, which has been named the Grand Ethiopian Renaissance Dam (GERD) (Hammond, 2013). The project is part of a wider scheme to expand the country's hydroelectric power capacity. As key part of the GTP I of the Ethiopian Government, the project was aimed to increase the amounts of power for domestic or export, irrigation activities, economic and social development and to strengthen the rural electrification access program (Matthews *et al.*, 2012; MoFED, 2010; Verhoeven, 2011).

The construction of dams and other water development projects to develop the Ethiopian water resources in the Blue Nile catchment has been hampered for a long time (Swain, 2011). The absence of Ethiopia in the race for the Nile water use can be explained by the existence of asymmetric power relations between the Nile riparian states. Thus, since the 1980s, there have been tense relations among the three riparian states i.e., Egypt, Ethiopia and Sudan in the Nile catchment. Some analysts and scholars, however, argue that Egypt encourages hydro development projects in countries located upstream in the basin and particularly in Sudan (Küng, 2003; Swain, 2011).

Thus, the conception of the GERD has been a contentious issue in the region where tension have simmered for decades over control of the Nile. There have been several on-going debates and perceptions on whether the construction of the dam will bring any disputes or security threats in the region. As a result, the idea of the construction of the GERD has created opposition from neighbouring states (Hammond, 2013). The main tension, however, came specifically from its

downstream neighbours of Egypt and Sudan. Fear and suspicions flared amongst the Egyptians due to the perception that the dam will reduce water supplies even further at the time when the country's economy is weak and the population is growing. As the population and economies of these countries are projected to grow, pressures on water resources are likely to increase (Hammond, 2013).

On March 23, 2015, Egypt, Ethiopia and Sudan signed an agreement known as the Declaration of Principles (DoP) on the GERD (Schoeters, 2013). The general principles of the agreement aim in bringing peace, cooperation, transparency and development between the three countries. The agreement is a virtuous move in terms of maintaining peace, cooperation and to strengthen the regional integration between Ethiopia, Egypt and Sudan. On the basis of this declaration, it is assured that there will be no harms but rather developmental benefits on the construction of the GERD for each country.

With these backdrops, this study looks at the potentials for cooperation and the ways it will pave for sustaining peace and development for the region on the basis of the construction of the GERD. Furthermore, this study will examine how the GERD ensures peace and developmental benefits for the signatories of the declaration of political principles agreed upon by riparian states namely Ethiopia, Egypt and Sudan.

1.2. Statement of the Problem

The Nile River is an important resource for the security and survival of the riparian states, particularly the lower riparian states of Egypt and Sudan. The GERDP; the largest hydroelectric plant in Africa once completed, threatens these states as it involves diversion of large volumes of the Nile waters. This raises the issues of mutual security and development benefits, which was enshrined in the declaration of political principles amongst Ethiopia, Egypt and Sudan (Aljazeera , 2015).

Egyptian's for long period of time have aggressively worked to prevent Ethiopia from using the Nile waters. They ached under the belief that Egypt will be exposed to a tremendous consequence if Ethiopia starts to use the waters of the Nile. The Egyptians mentality is framed by "If Ethiopia uses the water, Egypt will be endangered" as 85 million Egyptians rely on the Nile river almost all of their water needs (IPS, 2014). Thus, the Egyptian perception in regards to Nile and Ethiopia is

the classic example of the politics of the zero-sum game theory - “win-lose” approach (Deng, 2007). The GERD has become a world-wide issue and a serious topic. Besides gripping the attention of experts from Ethiopia, Egypt, Sudan and other African countries, the construction of the GERD has gained the attention of global experts (Belachew, 2013).

In 2013, International Panel of Experts (IPoE) published a final report on the GERDP, showing and explaining the rights of Ethiopia in building the GERD and discussing the benefits of the Dam to Egypt and Sudan. Other scholars such as Paisely and Henshaw (2013) have published a review article entitled “The Trans-boundary Governance of the Nile River Basin” which focuses on the challenges of the Nile riparian countries in the past, present and future. Eshetu (2013) has discussed the concept of having joint ownership of the GERD at Aigaforum. Also, Yihdego (2013) has recently published ‘The Controversy of Blue Nile in the Eyes of International Law’ in the Global Water Forum.

Most publications such as articles, documentaries and newspapers, discuss and assess the downside of the construction of the GERD and how this project may provoke conflict and potential war amongst Egypt, Ethiopia and Sudan. Ethiopia on the construction of GERD, bases its strategies on the uses of the Nile waters not for other forms of consumption purpose (e.g. irrigation), but rather for power generation. Ethiopia has also guaranteed the lower riparian countries that the GERD brings no threat for the two countries as the water that generate energy from the Nile flows back to the course of the main river and does not disturb the continuous flow of the river to Sudan and Egypt (The citizen, 2015). Considering this the Ethiopian Prime Minister says:

I want to assure the people of Egypt and Sudan that the construction of the GERD will cause no significant harm to the people of these countries, especially for the people of Egypt. - H.E Prime Minister Hailemariam Desalegn (2015)

Additionally, International Media houses such as Aljazeera and CCTV have produced documentary films on the issue of cooperation over the Nile. Egyptian, Ethiopian and Sudanese newspapers and several media have also been reporting on this topic on daily basis.

Consequently, this research will look at how a regional cooperation and economic gains can be achieved on the basis of the construction of the GERD for the Eastern Nile Basin states of Egypt, Ethiopia and Sudan. In addition, this subject matter is timely and will objectively examine and analyse the role of the GERD in bringing cooperation and sustaining development amongst the

three countries, which are mostly affected by this project. The issue of the Nile in relation to cooperation and socio-economic development is currently very serious and has been given in-depth focus by others. The downstream countries have been raising their concern by opposing to the dam from the beginning. Most of the studies written in relation to the GERD mainly focus on the potential conflicts between the downstream countries caused by this GERDP. Hence, the research looks into the constructive role of the GERD in fostering peace and economic development between Ethiopia, Sudan and Egypt. Since the subject matter of peace and economic development are timely and their nexus specific to the GERD has not been studied. The study will considerably add to the endeavours of filling understanding gaps by looking at the role and pertains of the GERD.

1.3. Research Objectives

General Objective

The general objective of the study is to examine how the GERD will ensure peace and development for the three signatories of the declaration of political principles of the Eastern Nile Basin states namely Ethiopia, Egypt and Sudan.

Specific Objectives

The specific objectives of this thesis are to:

1. Examine the challenges and tensions in the Nile waters for cooperation and sustaining peace and development among the Eastern Nile basin states;
2. Analyse the nature of the GERD and its implications for peace and development among the Eastern Nile Basin states; and
3. Scrutinize the role and of the GERD in pursuing peace and development among the Eastern Nile riparian states.

1.4. Research Questions

The research attempts to answer the following research questions:

1. What are the challenges and tension in the Nile waters for sustaining peace and development among countries in the Eastern Nile Basin?

2. What is the nature of the GERD and its implications for peace and development for the Eastern Nile Basin countries?
3. How does the GERD contribute in sustaining cooperation and development between the Eastern Nile Basin lower states?

1.5. Scope and Limitation of the Study

This study is delimited to the peace and development nexus on the construction of the GERD among Ethiopia, Egypt and Sudan. It focuses on the related development interests of the lower Nile riparian countries and the observations might contribute to other similar studies. Most of the primary data were collected from institutions and key informants that reside in Addis Ababa, Ethiopia, while others were conducted from international water experts from other parts of the world. Since the issue of the GERD is timely, most of the secondary sources are dated from 2011 onwards. The researcher has encountered some limitations while generating primary data for the purpose of the research. Access to the Embassy of the Republic of Sudan was a challenge as the delegates were not available to provide the researcher with information about the GERD from the Sudanese perspectives. As a result, it was not possible to conduct interview from the Embassy of Sudan to generate a first-hand data. Nevertheless, the researcher conducted prominent reports sources from day-to-day Sudanese blogs. The researcher succeeded in interviewing a Social Affairs Officer at the Embassy of the Arab Republic of Egypt. Furthermore, in addition to other experts, institutions and intellectuals who were consulted in the study, prominent government official who closely work on Nile in the foreign diplomacy of Ethiopia was also interviewed and consulted for the study.

1.6. Significance of the Study

The Nile River which is a significant natural resource for millions of people in the Nile Basin has been under pressure for socio-economic purposes among the riparian states. The GERDP which is a timely contested issue has become an international eye-catching project. After the implementation of the GERD many researchers, scholars and policy makers have put the project under recognition. This study is important to identify the peace and development prospects of the GERD for the Eastern Nile riparian states of Egypt, Ethiopia and Sudan. The research is also expected to look at the ways for cooperation by addressing the challenges and tensions that are being manifested on the basis of the construction of the GERD. Thus, the research might be able

to provide information for those who are interested in doing further studies on the GERD. In addition, the study has an importance in providing further implications for policy makers and researches on this issue.

1.7. Research Methodology

Quantitative and qualitative research methods are argued to be the most significant approaches used for the purposes of data collection and analysis (Altheide & Johnson, 1994). Comparing the two, quantitative method measures the proportion of populations who think or behave in a particular way, thus, it appears to be objective in nature (Keegan, 2009). On the other hand, the qualitative method is argued to be a means of understanding people's perceptions, experiences and even history in their natural understanding (Devine, 2002). According to Creswell (1998), in qualitative research the researcher builds a complex, holistic picture, analyses words or concepts, reports or detailed views of informants, and conducts the study in a natural setting (Creswell, 1998).

Based on the above definitions of the two research methods, this research is based on a qualitative research method. In order to examine the GERD in sustaining peace and development among Egypt, Ethiopia and Sudan, the researcher generated data through interview and some data from secondary materials. The approach allowed the study to analyse the reality of the issues from a holistic perspective.

Perceptions, feelings, beliefs and notions of informants on the core issue were generated. Hence, the research employs qualitative research method. The primary data is transcribed and thematically categorized and analysed in concurrence with the secondary data. Then, the data is analysed along with arguments and facts stated in the literatures.

1.7.1. Research Site

The GERD is geographically located in the Beneshangul-Gumuz Regional State of Ethiopia, bordering the state of Republic of Sudan on the East. The GERDP is a national issue in which every Ethiopian is informed about this project. Since the GERD is the major topic of the research and a general understanding of the issue is important, relevant information were gathered from institutions (organizations) and individuals. As such, related information was conducted from the

Office of National Council Coordination of Public Participation on the Grand Renaissance Dam, Embassy of the Arab Republic of Egypt, Ministerial Offices and Addis Ababa University (AAU).

1.7.2. Sources of Data

Data for the research was conducted from both primary and secondary sources. The qualitative data inquired for primary hand information is gathered from feelings, beliefs, knowledge and perceptions of the informants. According to Dawson (2002), primary data may come from your own observations or experience, or from the information you gather personally from other people that involves the study of a subject through first-hand observation and investigation (Dawson, 2002). Primary data generated for this research are from relevant informants, historical records/texts and documentary films.

The primary data obtained from key informants are through semi-structured interviews. The informants of the research were diplomats, senior researchers/scholars and experts in which these informants have deep knowledge and experiences on the subject matter. Also, another prominent scholar and expert on the Nile who resides in North America was contacted and interviewed. I believe that the primary sources are relevant in addressing research objectives and research questions.

The collection of information and flow of secondary resources was also noteworthy for the research. The fact that the GERD is a timely phenomenon and a current issue, there are relevant second-hand sources of data. These include related books, extensive research reports, journal articles, online articles and media outlets such as newspapers and online blogs. Discussion of basic concepts and relevant background information in the literature review of this thesis were derived from a number of different secondary sources.

1.7.3. Sampling Technique

Purposive sampling technique was implemented to select a total of eight key informants. The key informants comprised of two diplomats, two government officials - one at the FDRE Prime Minister's Office and one at the FDRE Ministry of Foreign Affairs (MoFA), three experts in the field; one is a director of Water Institute in North America and two scholars from Addis Ababa University. These informants were selected in view of their long period experiences and knowledge of the GERDP as well as water related issues. Their experiences on the topic of the

research are one of the criteria of selection. Out of the eight interviews, six were conducted face-to-face, one over the phone and the other on Skype (online).

1.7.4. Method of Data Analysis

The research questions and objectives are effectively addressed through a discourse analysis technique. Discourse analysis method is used as a research design in this study to interpret and analyse data as it helps to look at the underlying assumptions and the structure of the research. It also looks at the dichotomy between the subjective meaning and objective reality of the GERD. Additionally, this approach was conducted based on primary data that provided a good empirical answer for the research. Much of the analysis is intuitive and reflective i.e. the research was analysed spontaneously and thoughtfully based on the collected primary data through interview.

When dealing with a qualitative research it is important as the research becomes satisfactory of the gathered data. As such, validity and reliability was significant in this qualitative research. The measuring of validity and reliability was based on the general definition of the two terms. Thus, validity is defined as the context to which an indicator tells you what you want to know about a concept or that points to relevant aspects of the concept (White, 1994), and reliability simply means consistency (Bailey, 1994). As a result, this study was analysed based on the underlying findings of the gathered data and contesting validity and reliability.

1.8. Ethical Consideration

The study exercised an ethically truthful research. As the study is for academic purpose, all data gathering procedures and steps were conducted meeting validity and reliability of the subject matter. While conducting primary data all informants were informed and aware of the purpose of the study and the fact that their opinions are respected and kept confidential. Thus, confidentiality of informants is maintained. In addition, the researcher has not added any personal opinions of own and has considered a fair understanding drawn from the study. For secondary data citation, all referred literatures and documents have been cited using the standard citation of American Psychological Association (APA). As such, this research is not plagiarized and is an ethically truthful research. As an Ethiopian student and researcher, much care was taken not to be partial and biased when it comes to the three riparian countries in relation to Nile.

1.9. Organization of the Thesis

The thesis is organized into four chapters. The First Chapter provides the reader with a general background, problem statement, objective of the study, research questions, significance of the study and the research design and methodology of the study. The Second Chapter includes the literature review in which major works such as literatures and prominent documents on the topic have been reviewed and addressed. In addition, major concepts of the study have been discussed in this chapter to set an understanding for further discussions of the study. The Third Chapter includes data presentation, data analysis and discussion and findings of the thesis. In this chapter, the gathered data is put into themes and analysed accordingly. The final chapter of the thesis; Chapter Four, provides conclusion of the study and suggests some policy ideas.

CHAPTER TWO

Related Literature Review

The Horn of Africa, particularly from the perception of the western world, is perceived as a region disposed to violence, poverty and extremism rather than a region for potential cooperation and development (Yasir & Makonnen, 2008). The scarcity and the significance of water have recently

increased with the rise in population growth and climate change. Thus, the hope for cooperation and sustainable development might seem a bit hopeless in the eyes of many. The Nile River has played an extremely important role in the civilization, life and history of the people of the Nile riparian states, especially the downstream countries of Egypt and Sudan. The most important benefit of the Nile is its water and the fertile soil it carries to the grounds and territories of these countries (Yacob, 2007). It is important for the Eastern Nile Basin countries to reconcile peace, to meet mutual economic opportunities, to strengthen their socio-political relationships and for a better management of this scarce resource.

This chapter aims at discussing the concepts of peace and development and the nexus between the two issues. Also, the different theories and principles of trans-boundary water agreements have been raised and discussed briefly. In this study, it is also important to overview the Nile Basin, particularly, the Eastern Nile Basin and the various agreements imposed by the Eastern Nile Basin countries on the utilization of the Nile waters. As such, the past agreements on the Nile water utilization have been touched up on in a chronological manner. In addition, the Grand Ethiopian Renaissance Dam (GERD) being the core discussion of this paper, it is given a special emphasis as it will give way for analysis of data generated.

2.1. Conceptual Framework

2.1.1 Concept of Peace

Peace is essentially contested as a concept. The term ‘peace’ does not have a reasonably clear, well understood and agreed upon meaning (Galtung, 1967). It is a subjective concept, depending on individual actors for definition, different methods, ontologies and different epistemological approaches (Yonas, n. d). As Johan Galtung once argued, an important task in peace research has always been and always will be the exploration of the concept of peace (Galtung, 1981).

According to Galtung (1967), there are three directions for the concept of "peace". The first conception of peace refers to internal states of a human being; the person who is at peace with himself. The second concept is the idea of peace as the collective violence between groups, classes and nations, referred to as ‘negative peace’. The third concept of peace in Galtung’s ‘Theories of Peace’ which is less clearly defined; this concept is a synonym for all other good things in the world community, particularly cooperation and integration between human groups, with less

emphasis on the absence of violence. This concept is referred to as ‘positive peace’ (Galtung, 1967).

Peace is not only the absence of negative interaction, it also implies the presence of an element of positive interaction. - Galtung (1967, pp 13)

Matsuo (1984 & 1985), explains that the concept of peace has been expanded into a more complex concept both in its content and in its scope. There are two perspectives of peace, these are “peace value” and “peace sphere” though not always explicitly. The former; “peace value”, refers to the content or substance of peace. Any peace concept is theoretically composed of two or more elements which we call peace values. In contrast the latter, “peace sphere”; first proposed by Johan Galtung refers to the logical or cognitive, and frequently the only space where peace exists, whatever the substance may be (Matsuo, 2005).

According to Matuso (2005), in the early years of peace studies, it was assumed that peace is the opposite of war. The peace concept at the time consisted of only one peace value, that is, the “absence of war”. This was partially because the early peace studies were strongly motivated by the reflection on the tragedies of the WWII. After WWII, the numerous problems of the world awakened peace studies to tragic and miserable phenomenon across the world, particularly in the developing countries that manifested poverty, drought, famine, underdevelopment and human rights violations. This led many peace researchers to ask the question of whether peace consists of only one value or whether the absence of war is the only peace value (Matsuo, 2005).

If there is a war, there is no peace, and if there is no war, there is peace, however war may be defined. Peace and war are, as it were, in the “zero-sum” relationship. - Matuso (2005, pp. 16)

Dasgupta (1968), proposed a new notion of peace as “peace-less-ness,” which refers to the situations, especially in developing countries, where, in spite of the absence of war, human beings are suffering just as much from poverty, malnutrition, disease, illiteracy, discrimination, oppression and so on, as from war (Dasgupta, 1968). His conceptualization of peace introduced new peace values and peace sphere, peace values such as (the absence of) economic prosperity, absence of famine, insufficient education and physical health. Dasgupta (1968) stated the only

sphere of peace that matters is the system of which the only relevant unit is the sovereign independent state; peace can be defined as the absence of war between or among states or alliances of states. In other words, these peace values can only be realized at the level of a domestic society or group within a state (Matsuo, 2005).

Johan Galtung (1967), defined peace as the ‘absence of violence’, and not as the ‘absence of war’. Additionally, Galtung’s elaboration on the concept of peace was based upon “structural violence”. He advanced a new concept of peace and violence. The key to his proposal of a new definition of peace was a new concept of violence which leads to the question of ‘what is violence?’. According to Galtung (1967) violence is everything which prevents the full realization of innate somatic and mental human potentials. In other words, violence is anything which produces a gap between the physical and mental potentials of human beings and their actual conditions (Galtung, 1967). To put it in other words, peace values or the conditions to peace is elimination of violence, poverty, underdevelopment, oppression and social ills and other manifestations of violence. Structural violence, is built in to the very nature of social, cultural and economic institutions, has an effect of denying peoples important rights, such as economic wellbeing, social, political and sexual equality, a sense of personal fulfillment and self-worth and is expressed with the existence of hunger, political repression, and psychological alienation. By contrast, direct violence generally works much faster and is more visible and dramatic (Galtung, 1996). Behind structural violence is cultural violence which legitimizes it through language, art, science, law, media and education (Galtung, 1996).

Galtung (1967) stated that peace is concerned with the relations between groups, in which he divide to negative and positive spheres: the search for the conditions for the absence of negative relations and the search for conditions that facilitate the positive relations respectively. The ten values of positive-relations are: presence of cooperation, freedom from fear, freedom from want, economic growth and development, absence of exploitation, equality, justice, freedom of action, pluralism and dynamism (Galtung, 1967).

Galtung’s Negative Peace and Positive Peace

There are two definitions for peace: negative peace and positive peace. Galtung (1969) defines this dual nature of peace – the absence of violence and the presence of a culture of peace – as negative and positive peace, respectively. More specifically, ‘negative peace’ then becomes a way of averting or stopping war or direct violence whereas ‘positive peace’ is a situation of non-violence, sustainability and justice that eliminates the causes of violence (Galtung, 1969).

Galtung (1967) defines this dual nature of peace – the absence of violence and the presence of a culture of peace – as negative and positive peace, respectively. More specifically, ‘negative peace’ then becomes a way of averting or stopping war or direct violence whereas ‘positive peace’ is a situation of non-violence, sustainability and justice that eliminates the causes of violence (Galtung 1967). He associated positive peace with the existence of ten values of positive relations at national and international level: presence of cooperation, freedom from fear, freedom from want, economic growth and development, absence of exploitation, equality, justice, freedom of action, pluralism, dynamism (Galtung, 1967). Galtung further argues that:

‘... all these values can be discussed at the intra-national level of individuals as well as at the international level of nations. One can talk about individuals exploiting each other and nations exploiting each other, about individuals living in fear and anxiety and nations doing so, about individuals having a wide range of actions open to themselves so that they can live "rich lives" and individuals that have a very narrow spectrum of actions from which they can choose, and one may talk’ - Galtung (1967, pp. 14).

Many writers distinguish between negative peace, which is simply the absence of war, and positive peace, which is the presence of justice. Grewel (2003) summarizing Galtung’s classification of peace and states that, negative peace: is pessimistic, curative, peace not always by peaceful means. Positive peace is structural integration, optimistic, preventive, peace by peaceful means. Grewel further argues that, what Galtung in most of his work has sought to project was and still is positive peace as a higher ideal than negative peace (Grewel, 2003).

‘... since the search for peace is concerned with the relations between groups; it obviously divides into a negative and a positive part: the search for the conditions for the absence of negative relations, and the search for conditions that facilitate the presence of positive relations’ – Galtung (1987)

To encapsulate on these two terms, negative peace as a concept focuses on reducing/ending war and all physical violence and emphasizes on taking action for the achievement of peace through eradicating direct violence and working for disarmament. While, positive peace requires of the enrichment of all structural and systemic obstacles to peace, and thus the creation of true peace. For instance taking the case of the world where there is encompassing violence and war, by reducing the amount of violence in the world creates a negative peace and when the world is refilled with justice and equality and other values, beliefs, and practices that stabilize structural violence a state of positive peace (true peace) is reached.

Liberal Peace and Joint Democracy

Liberal International Relations theory elaborates the insight that the relationships of states to the domestic and transnational social context in which they are embedded have a fundamental impact on state behaviour in world politics. Societal ideas, interests, and institutions influence state behaviour by shaping state preferences, that is, the fundamental social purposes underlying the strategic calculations of governments (Moravsik, 1997). Neo-liberal theories assume that under conditions of anarchy in the international system, the role of international regimes is to make it possible for nation states to choose to cooperate. Thus, liberal triangle of joint democracy and economic and political interdependence nurture cooperation over shared resources (Martens, 2011).

According to Kalbhenn (2011), liberal factors can foster intergovernmental cooperation over shared resources. This conceptualization of conflict and cooperation allows for a more encompassing test of the applicability of the liberal triangle to cooperation over shared resources (Kalbhenn, 2011). Furthermore, several scholars argue that democracies tend to cooperate more, especially joint democratic countries behave more cooperatively towards each other, and also with respect to shared resources (Bayer, 2010; Leeds, 1999; Mansfield, *et.al.* 2002; McGillivray & Smith, 2004; Bernauer &Kuhn, 2010).

According to Russett (1993) in liberal approaches we can essentially identify two reasons for democracies to behave cooperatively towards each other: democratic norms and democratic political structures (Russett, 1993). Emphasising on democratic norms with respect to natural resources, Midlarsky (1998) suggests that 'regime responsiveness, political learning especially as the result of mutual identification, and the tendency toward cooperation in international

institutions' are important aspects of democracy for both peaceful relationships between democracies and environmental protection (Midlarsky, 1998).

From the mentioned concepts, it is safe to conclude that sharing a river need not necessarily increase the risk of conflict over the shared resource, but that joint democracy and political and economic interlink fosters cooperation over shared resources. In other words, the liberal factors, namely democracy, economic and political interdependence (known as the liberal triangle) fosters cooperation over shared resources.

2.1.2. Concept of Development

Historically, the concept and definition of development has been through an evolution through time and has been contested by many. In the nineteenth century, Darwinism began to associate development with evolution, a change towards something more appropriate for survival (Esteva, 1992). Others recognise that the origins of development lay in the rationalism and humanism of eighteenth and nineteenth century respectively (Potter, *et.al.* 1999). The genesis of modernist's concept of development and practice laid grounds in the decades between 1945 and 1955. Modernism is the belief that development is all about transforming 'traditional' countries into modern (Potter, *et.al.* 1999). Moreover, the study of development as opposed to the study of the causes of poverty or economic growth is dated back to the early post-WWII period (Hettne B. , 1990).

Development was assumed to be a process that was directed or positively influenced by certain intentions but the outcomes of that process seemed to negate the assumption to a great degree in many situations (Shanmugaratnam, 2001). Cowen and Shenton (1996) stated, 'It is the question 'What is development?' that makes the existence of intentions to develop obvious. This is so if only because responses to the question of development usually present an image of something created a new, or improved, or renewed, or of the unfolding of potential which has the capacity to exist but which presently does not do so' (Cowen & Shenton , 1996).

Development is an economic, social and political process, which results in a cumulative rise in the perceived standard of living for an increasing proportion of a population. – Hodder (2000, pp 3)

According to the United Nations General Assembly held in 1987, development is termed as “that meets the needs of the present without compromising the ability of future generations to meet their own needs”. The UNDP has aggregate indicators such Human Development Index (HDI), Human Poverty Index (HPI) and Gender-related Development Index (GDI) and other as valuable information including qualitative accounts of human deprivation and development are helpful in forming an overview of trends in human development (Shanmugaratnam, 2001).

Sen (1999), who has consistently and cogently addressed development in relation to human well-being, describes the concept of development as freedom, in which he argues that human development is about the expansion of citizens’ capabilities. Furthermore, in his book ‘Development as Freedom’, Sen claim that development is not so much something that can be done to others, but is instead something that people do for themselves. In other words, people will ‘develop’ as they see it given sufficient ‘economic opportunities, political liberties, social powers, and the enabling conditions of good health, basic education, and the encouragement and cultivation of initiatives’ (Sen, 1999). These opportunities are, in Sen’s words ‘freedoms’, and it is freedom, he argues, that should be both the means (how to attain) as well as the ends (the goal) of development (Barnett, 2008). Sen has reinforced the centrality of development by conceptualising it in terms of capability and by suggesting that development could be seen as a process of capability expansion (Shanmugaratnam, 2001). He highly discloses that there is a close link between development and economic growth and that these two terms are in simultaneous importance (Sen, 1999).

According to Cox (1987), as a principle means of achieving development objectives conflicts concerning economic growth need to be hampered. He further discusses that any nation with a relative abundance of resources would possess a significant development advantage. Actual contribution to natural resources depends on the availability of capital and human resource capacities. The absence of these factors can produce a situation where abundance of potential resources does not result in substantial development (Cox, 1987).

Resource scarcity need not serve as an insurmountable obstacle to development and several resource-poor nations has achieved high levels of economic growth and development - Cox (1987)

Giddens (1990) argues that economic development enables new environment and economic aware resource managing options to be contemplated and implemented. In other development options, development has the potential to be both economically feasible and environmentally sustainable in which the two interests complete each other (Giddens, 1990).

Economic Interdependence

Interactions over shared resources, such as water courses crossing international borders, may give rise to interstate tensions or, ideally, foster cooperative behaviour (Kalbhenn, 2011). Attentions towards international water courses have grown within the past decades. With an exceeding level of climate change as a major factor the socio-economic systems affect intergovernmental behaviours with respect to shared water resources. As a result, this has led to claims that sharing a river might increase the risk of interstate conflict, the so-called ‘water war’ hypothesis (Starr, 1991). On the contrary other studies emphasize the non-negligible amount of cooperation over shared water resources (Brochmann & Gleditsch, 2006; Wolf, *et.al*, 2003).

Neumayer (2002) demonstrates that economic interdependency such as trade openness, promotes multilateral environmental cooperation. He further argues that multilateral cooperation might be a signalling device to facilitate future cooperation (Neumayer, 2002). Bernauer; Kuhn (2010) and Sigman (2004) argue that trade interdependencies facilitate implicit side-payments and issue linkages that might foster cooperation over shared rivers. Tir & Ackermann (2009) add that ‘economic interdependence reduces transaction costs’ (Tir & Ackermann, 2009). Thus, from this argument we can draw out that trade induced relationships create opportunities for agreeing on means to cooperate over shared resources and uplifts potentials for development growth.

2.1.3 The Nexus of Peace and Development

In peace research, there has been a marked absence of any new theory of peace beyond on-going debates about the democratic peace, and there has been no theory and almost no reference to a wider idea of peace that includes development issues (Barnett, 2008). However, many of the possible causes identified by peace research, such as resource endowments (de Soysa, 2000), poverty (Fearon & Laitin, 2003), democracy (Hegre et al., 2001), rent-seeking (Weede, 1996), financial flows (Gartzke & Li, 2003), and economic and political transitions (Esty et al., 1999), are central concerns of development studies.

Hettne (1983), questions ‘what kind of development would facilitate the emergence of more peaceful economic, social and political structures?’ (Hettne, 1983). To answer this question, Hettne (1983) drew from the ‘Another Development’ view proposed by the Dag Hammarskjöld Foundation (1975), which defined development as need-oriented, endogenous, self-reliant, ecologically sound and based on structural transformation (Hettne, 1983).

Furthermore, processes associated with globalization also seem to increase the prospects for peace and development. For example, the emergence of human rights organizations like Amnesty International, coupled with the proliferation of harder-to-contain communications technologies such as mobile telephones and the Internet, have increased transparency and made it harder for human rights violations to go unnoticed (Cleaver, 1998). It also seems that increasing integration of markets can lead governments to respect political freedoms and human rights (Hafner-Burton, 2005). In parallel, to the notion of human security in which freedom from fear and want are central tenets, it has strong synergies with a rights-based approach to peace and development (UNDP, 1994).

For the purpose of this study, combining Galtung’s theory of peace and Sen’s concept of development as freedom, leads us to a definition of peace as the goal and process of expanding people’s freedoms (Barnett, 2008). In this definition peace is not defined in contradiction to violence or any other sets of wicked. Sen’s (1999) account of freedoms and opportunities as processes that enable people to lead the lives they value offers a detailed and more satisfying substitute for that, which Galtung calls ‘structural violence’. This notion of freedom from direct violence is self-evident. We can relate the two independent terms by taking Galtung’s five most important freedoms (economic opportunities, political freedoms, social opportunities, transparency guarantees and protective security) for a larger theory of peace as freedom (Galtung, 1969). It is a view that merges peace and development into a single framework (Barnett, 2008).

In conclusion, peace as freedom suggests the means and ends of peace and development should be to ensure the equitable distribution of economic opportunities, political freedoms, social opportunities, transparency guarantees, protective security and freedom from direct violence. Hence, there is a strong compatibility between peace and development.

2.2. Theories of Trans-boundary Waters

The term “trans-boundary water” or occasionally referred to as ‘International River’ or ‘shared water resources’, usually designates a river which flows through or between the territories of two or more states (Girma, 2008). Paisely and Henshaw (2013), define trans-boundary water as ‘water resources that are shared by two or more sovereign states, and include international freshwater, international ground water and international Large Marine Ecosystems (LMEs)’. According to subparagraph (a) of Article 2 of the Convention on the Non-Navigational Uses of International Watercourses, international watercourse is defined as “a watercourse, parts of which are situated in different States.” Furthermore, subparagraph (b) of the same Article, defines “Watercourse” as “a system of surface waters and ground waters constituting by virtue of their physical relationship a unitary whole and normally flowing into a common terminus” (Girma, 2008).

According to the International Network of Basin Organizations (as cited in (Kidane, 2012)), there are 263 large trans-boundary river basins around the world, of which 59 are in Africa and cover 62 per cent of the continent’s surface area. Paisely and Henshaw (2013), state that there are approximately 154 nations that have territory within trans-boundary water basins, with 30 nations lying entirely within them. The world's 263-plus trans-boundary water basins, cover nearly one half of its land surface, account for an estimated 60% of global freshwater flow and support roughly two billion people globally (Paisely & Henshaw, 2013).

The utilization of trans-boundary waters is a potential source of tension among basin states contending for scarce resources. Sharing water resources ‘creates diplomatic challenges... often linking states in a upstream/downstream relationships at a time when pressure on the world’s water supplies are increasing substantially’ (Conca *et al.*, 2006). The competing roles in international water basins-engines of regional economic development and critical sites of biodiversity conservation make governance particularly challenging (Paisley and Henshaw, 2013). In the absence of general guidelines for the utilization of international watercourses, riparian states have resorted to different concepts depending on which geographical side of the watershed they are situated. These concepts or doctrines are: (1) absolute territorial sovereignty; (2) absolute territorial integrity; (3) limited or restricted territorial sovereignty; and (4) the community theory. These concepts are based on the hydrology i.e. from where a river originates and how much that territory falls within a certain state, or on chronology i.e. who has been using the water the longest (Girma,

2008). These doctrines have been decoded in international water laws such as ‘the Helsinki Rules’ and the ‘United Nations Water Courses Convention’ to be discussed below.

2.2.1. International Trans-boundary Laws and Principles

A. The Helsinki Rules

In 1966, the International Law Association (ILA) met to put together a document entitled “The Helsinki Rules on the Uses of Waters of International Rivers”; a document establishing rules of international law governing the use of trans-boundary watercourses. These rules adopted the concepts of limited territorial sovereignty by stating that a riparian state of a basin is entitled, “within its territory, to a reasonable and equitable share in the beneficial uses of the waters of an international drainage basin.” As such, it acts as a restriction on the doctrines of absolute territorial sovereignty and absolute territorial integrity. The other major feature in the Helsinki Rules is that it provides for any riparian state planning to undertake a project that would alter the flow of a trans-boundary water system should give prior notice to any downstream riparian state that may be affected (NBI, 1999; Girma, 2008).

B. The United Nations Convention on the Non-navigational Uses of International Watercourses (UN Water Courses Convention)

In May 1997, by the overwhelming majority and under the sponsorship of 38 states at the United Nations General Assembly, the United Nations Watercourse Convention was adopted. With a focus on shared water resources, the UN Watercourses Convention highlights in its preamble the importance of international cooperation and good neighborliness for the utilization, development, conservation, management and protection of international watercourses and the promotion of the optimal and sustainable utilization thereof. In addition, the convention requires states to “cooperate on the basis of sovereign equality, territorial integrity, mutual benefit and good faith in order to attain optimal utilization and adequate protection of an international watercourse”. Furthermore, the convention encourages the adoption of watercourse agreements and the harmonization of existing treaties with the convention, as well as the establishment of joint mechanisms and commissions. (Brels, Coates & Loures, 2008).

2.2.2. Trans-boundary Water Resources Management Principles

Based on the 1966 Helsinki Rules on the uses of the Waters of International Rivers and the 1997 UN Convention on Non-Navigational Uses of International Watercourses (UN Watercourses Convention), there are different principles of trans-boundary water resources management (Giordano & Wolf, 2003; Rahaman, 2009). These are the theory of limited territorial sovereignty; the principle of equitable and reasonable utilization; an obligation not to cause significant harm; the principles of cooperation, information exchange, notification and consultation; and the peaceful settlement of disputes. These trans-boundary water resources management principles are recognized by international convention, judicial decisions and international treaties (Rahaman, 2009).

A. The Theory of Limited Territorial Sovereignty

This theory is based on the assertion that every state is free to use share drivers flowing through its territory as long as such utilization does not prejudice the rights and interests of the co-riparian where sovereignty over shared water is relative and qualified. The co-riparian have reciprocal rights and duties in the utilization of the waters of their international water course and each is entitled to an equitable share of its benefits. This theory is also known as the ‘theory of sovereign equality and territorial integrity’ (Rahaman, 2009).

The advantage of this theory is that it simultaneously recognizes the rights of both upstream and downstream countries because its guarantees the right of reasonable use by the upstream country in the framework of equitable use by all interested parties. Principles of equitable and reasonable utilization and an obligation not to cause significant harm are part of the theory of limited territorial sovereignty (Schroeder-Wildberg, 2002). This theory has been adopted in the majority of the treaties in recent years, e.g. the 1995 Agreement on the cooperation for the sustainable development of the Mekong River basin (Articles 4 –7), the 1995 SADC protocol on shared watercourse systems (Article 2) and the 2002 framework agreement on the Sava River basin (Articles 7–9) (Rahaman, 2009).

B. Principle of Equitable and Reasonable Utilization

Equitable and reasonable utilization rests on a foundation of shared sovereignty and equality of rights, but it does not necessarily mean an equal share of waters. In determining hydrology of the basin, the population dependent on the waters, economic and social needs, the existing utilization

of waters, potential needs in the future, climatic and ecological factors of a natural character and availability of other resources, etc. should all be taken into account (Article V of the Helsinki Rules, 1966 and Article 6 of the UN Watercourses Convention, 1997). It entails a balance of interests that accommodates the needs and uses of each riparian state. This is an established principle of international water law and has substantial support in state practice, judicial decisions and international codifications (Rahaman, 2009).

C. An Obligation Not to Cause Significant Harm

This principle is also a part of the theory of limited territorial sovereignty (Eckstein, 2002). According to this principle, no states in an international drainage basin are allowed to use the water courses in their territory in such a way that would cause significant harm to other basin states or to their environment, including harm to human health or safety, to the use of the waters for beneficial purposes or to the living organisms of the watercourse systems (Rahaman, 2009).

This principle is widely recognized by international water and environmental law, often expressed as *sic utere tuo ut alienum non laedas*. However, the question remains about the definition or extent of the word ‘significant’ and how to define ‘harm’ as a ‘significant harm’. This principle is incorporated in all modern international environmental and water treaties, conventions, agreements and declarations. It is now considered as part of the customary international law (Eckstein, 2002; Rahaman, 2009).

D. Principles of Notification, Consultation and Negotiation

Every riparian state in an international watercourse is entitled to prior notice, consultation and negotiation in cases where the proposed use by another riparian of a shared watercourse may cause serious harm to its rights or interest. These principles are generally accepted by international legal documents. However, naturally, most upstream countries often oppose this principle. It is interesting to note that during the negotiation process of the 1997 UN Watercourses Convention these principles, which are included in Articles 11 to 18, were opposed by only three upstream riparian countries: Ethiopia (Nile Basin), Rwanda (Nile Basin) and Turkey (Tigris-Euphrates Basin) (Birnie & Boyle, 2002).

Article 3 of the ILA’s Complementary rules applicable to international resources (adopted at the 62nd conference held in Seoul in 1986) states that: when a basin State proposes to undertake, or

to permit the undertaking of, a project that may substantially affect the interests of any co-basin State, it shall give such State or States notice of the project. The notice shall include information, data and specifications adequate for assessment of the effects of the project (Manner & Metsälampi, 1988).

E. Principles of Cooperation and Information Exchange

It is the responsibility of each riparian state of an international watercourse to cooperate and exchange data and information regarding the state of the watercourse as well as current and future planned uses along the watercourse (Birnie & Boyle, 2002). These principles are recommended by the 1966 Helsinki Rules (Articles XXIX, XXXI), while Articles 8 and 9 of the UN Watercourses Convention make it an obligation. The 1944 USA-Mexico Water Treaty, the 1964 Columbia Treaty between USA and Canada, the 1960 Indus Waters Treaty (Articles VI–VIII), the ILA’s 1982 Montreal rules on water pollution in an international drainage basin (Article 5), the 1995 SADC protocol on shared watercourse systems (paragraphs 4 and 5 of Article 2, Article 5), the 1995 Mekong River basin agreement (Articles 24 and 30), as well as the 2002 framework agreement of the Sava River basin (Articles 3 and 4), all incorporate these principles (Rahaman, 2009).

F. Peaceful Settlement of Disputes

This principle advocates that all states in an international watercourse should seek a settlement of the disputes by peaceful means in case states concerned cannot reach agreement by negotiation. This principle has been endorsed by most modern international conventions, agreements and treaties, e.g. the 1966 Helsinki Rules (Article XXVII) and 1997 UN Water-courses Convention (Paragraph 1, Article 33). It has also been incorporated in major treaties in recent years, e.g. the 1960 Indus Waters Treaty (Article IX, Annexure F and Annexure G), the 1995 SADC protocol on shared watercourse systems (Article 7) , the 1995 Mekong River basin agreement (Articles 34 and 35), and the 2002 framework agreement of the Sava River basin (Articles 22–24) (Rahaman, 2009).

In conclusion, the discussed international water principles are essential in minimizing the competition often risen between riparian of shared waters over limited water resources as many institutions lack the capacity to overcome conflicting approaches. Currently, these challenges are further aggravated by population growth, development, and climate change. As communities face

escalating threats to water scarcity, it is vital and a must for the stakeholders to ensure that water is managed in an integrated manner.

2.3. Geopolitics of the Nile River Basin

The Nile basin is the most dominant geographical feature of North-East Africa which links riparian countries that have different national histories, political system, economic development experiences and also different pattern of external relation (Yacob, 2007). Nile and its tributaries are vital sources of water throughout the basin where the dependence of basin countries on the river varies dramatically. Not surprisingly, these riparian states have competing and conflicting external relations and strategic orientations in which they have pursued unilateral and conflicting approaches to the utilization of the shared water resources, avowedly driven by respective national interest (Yacob, 2007).

2.3.1. The Nile River Basin

The Nile River Basin (hereafter NB) is considered as one of the most important basins in Africa, as over 33 % of the African population lives in its riparian countries, out of which 50% live in the NB (Ahmed, 2013). The NB, having the world's longest river; the Nile (6,700 KM), is shared among eleven countries. The riparian countries of the NB are: Burundi, Democratic Republic of the Congo (DRC), Egypt, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Uganda and the United Republic of Tanzania (Figure 1). The catchment area of the basin is about 3.3 million KM². It stretches over different geographical, climatological and topographical regions traversing an extremely wide area from -4°S to 31°N and 24°E to 40°E (NBI, 2010; UNEP, 2013). The climate and vegetation cover in the NB are closely correlated with the amount of precipitation, which decreases from above 1,000 mm/yr in the southern part to virtually zero in the northern part crossing the Sahara Desert (Yasir & Makonnen, 2008). The NB is characterized by high climatic diversity and variability, a low percentage of rainfall reaching the main river, and an uneven distribution of its water resources. Potential evaporation rates in the Nile region are high, making the basin particularly vulnerable to drought (NBI, 2012).

Table.1. Vital statistics of the Countries that Share the Nile basin

Country	Area total (KM ²)	Area of basin (KM ²)	Area in country (%)	Area of basin (%)	Mean Annual Rain (MM)	Total Population (million) Mid -2015	Total Population (million) Mid -2025
Burundi	27,830	13,260	47.6	0.4	1,110	10.7	30.4
DRC	2,344,860	22,140	0.9	0.7	1,245	73.3	193.6
Egypt	1,001,450	326,750	32.6	10.5	15	89.1	162.4
Eritrea	121,890	24,920	0.4	0.8	520	5.2	10.4
Ethiopia	1,100,000	364,120	33.2	11.7	1,125	98.1	165.1
Kenya	580,370	46,230	0.8	1.5	1,260	44.3	81.4
Rwanda	26,340	19,880	75.5	0.6	1,105	11.3	21
Sudan	858,715	283,376	33	11.4	100	40.9	105
South Sudan	647,095	543,560	84	52	954	12.2	24.8
Tanzania	945,090	84,200	8.9	2.7	1,015	52.3	129.4
Uganda	235,880	31,370	98.1	7.4	1,140	40.1	104.1

Source: Population Reference Bureau – 2015 Population Data Sheet.

According to Yacob (2007), the NB is made up of two main river systems; Blue Nile (Abay) and White Nile. The NB includes one third of Ethiopia, a substantial part of Sudan, almost the entire cultivated and settled area of Egypt, the whole of Uganda, and parts of Kenya, Tanzania, Burundi, Rwanda, DRC and Eritrea (Yacob, 2007). The Ethiopian headwaters provide 85% of the annual flow volume of the Nile, while the remaining 14% is from the Equatorial Lakes region. White Nile originated in the Equatorial Lakes Plateau (Burundi, Rwanda, Tanzania, Kenya, Democratic Republic of the Congo and Uganda) and is fed by substantial flow from the Baro-Akobo-Sobat river system that originates in the foothills of South-West Ethiopia. The Blue Nile has its sources in the Ethiopian highlands. The Tekeze-Setit-Atbara river system contributes to the flow further downstream of Khartoum (UNEP, 2013). The climate of the Nile Basin is characterized by a strong latitudinal wetness gradient (Onyutha & Willems. 2015).

Figure.1. The Nile River Basin



Source: www.sudantribune.com

In addition, the basin contains rich biodiversity in aquatic and terrestrial flora and fauna, and comprises varied climates and landscapes in East and North Africa (Kinyangi et al., 2012; NBI, 2013).

Economically, poverty is widespread, and socio-economic conditions are difficult for a large majority of the population in the NB. In the Human Development Report, 2010, six NB countries were ranked among the bottom 25 in terms of their HDI score, while Eritrea had no ranking. In addition, there are huge disparities in the socio-economic conditions amongst the basin countries (UNEP, 2013). The economies of all but two of the basin countries are among the least developed in the world, appearing on the United Nation's Least Developed Countries list (UN, 2015). For instance, according to the World Bank (2011) classification of economies, Sudan and Egypt (GNI per capita of between US\$ 996 and 3 945 respectively) are lower middle income countries, with the rest falling into the low income group (GNI per capita of less than US\$ 995). Egypt has the

highest per capita income of US\$ 2,070 almost 14 times larger than Burundi which has the lowest at US \$150. Between 2000 and 2009, national economies grew slowly. Ethiopia had the highest real GDP growth rates at 8.5 per cent (WB, 2011).

A number of NB countries' populations have more than doubled within the last 25 years, while violent conflict, political unrest, displaced communities, high incidents of disease, lack of infrastructure, and economic underdevelopment persist (UN, 2015). People of the Nile require new approaches to water development and use that can sustainably reduce poverty and improve food security and human well-being in the basin. Agriculture plays an important role in the economies of all Nile Basin countries. Yet, the role and potential of water for agriculture are not well understood throughout the basin, and in some parts of its massive investments in agricultural water development have not achieved the desired levels of food security and poverty reduction (NBI, 2012).

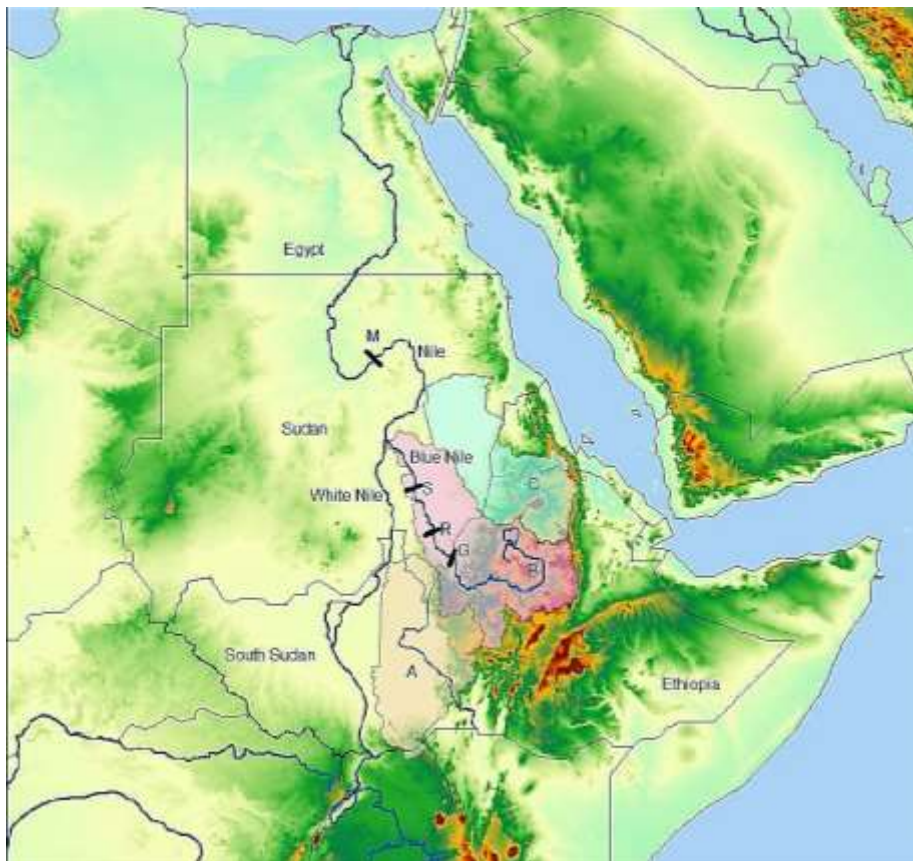
The trans-boundary nature of the Nile presents water-sharing challenges between upstream and downstream riparian nations (Waterbury *et al.*, 1998). The past colonial treaties of the Nile waters have been negative influences for the upper stream countries in using of the Nile waters. However, the riparian countries have used and are using the waters of the Nile to the extent that their financial and technical capacities allows them since there is no binding and all-encompassing rule or agreed upon commitment to regulate the utilization and management of the Nile waters. Unsurprisingly, these riparian states have competing and conflicting external relations and orientations (Yacob, 2007).

The Nile riparian nations have different national histories, political systems, economic development experiences and also different patterns of external relations (Yacob, 2007). Hereafter, this study will emphasis on the Eastern Nile Basin that comprises Egypt, Sudan and Ethiopia, as there has existed water use conflicts among these countries of this sub-basin. In addition, the GERD when completed will affect the socio-economic and political relationship of these three countries.

Eastern Nile Basin

The countries is given to geographical extremities, varying from the deserts of Sudan and Egypt to the highlands and wetland areas of Ethiopia (The eastern Nile basin, which is typically defined as the tributaries that arise in the Ethiopian Highlands – primarily the Blue Nile, Tekeze–Atbara, and Baro–Akobo–Sobat – together with the main stem Nile North of Khartoum (Satti, *et al.* 2015). The Eastern Nile tributaries collectively contribute over 80% of flow in the main stem Nile. The Eastern Nile Basin (ENB here onwards) also exhibits strong hydrological connectivity, in that upstream climate variability and development directly impact downstream resources in a manner that is not observed in the White Nile system, where lakes and wetlands serve as a buffer between the Equatorial-Lakes headwaters region and downstream water deficit areas in Sudan and Egypt (Blackmore & Whittington, 2008).

Figure.2. The Nile River and Its Tributaries



Source: Satti, Zaitchik & Siddiqui (2015)

A= Baro-Akobo-Sobat, B=Blue Nile, C= Tekese-Atbara basins, S= Sennar Dam, R= Roseries Dam, M=Merowe Dam and G= GERD.

As touched up on earlier, the political expression of the economic significance of the trans-boundary waters has characterized the tense relations between the upstream and downstream states in the ENB. The most entangled nations in the NB are Ethiopia and Egypt, for the obvious reason that Ethiopia is the provider of almost the entirety of the fresh water resources on which Egypt depends, and that there has not been an agreed upon mechanism to regulate the use and management of the Nile waters (Yacob, 2007).

In addition, the utilization of Eastern Nile waters has long been a source of trans-boundary tension, most notably between Egypt, which claims historical rights to the major share of Nile River water, and Ethiopia, which has a strong interest in developing the Eastern Nile tributaries for hydropower and other uses (Satti *et.al*, 2015). The Nile River is the principal artery of life in Egypt. In fact it is life itself. This basic fact does not apply to the same extent to the other riparian states (Hassan & Rasheedy, 2007).

The first civilization was the fruit of fortunate geographical marriage between Egypt and the Nile, hence if history was a father of Egyptians and Egypt was a Mother of the World the Nile is simply the great, great grandfather of human civilization. - Himdan (1987)

Naturally Egypt has never felt secure as long as the sources of the Nile are controlled by another state. A major objective of Egypt's foreign policy thus became the incorporation of the territories of the sources of the Nile (Yacob, 2007). No doubt one of the major strategic threats to Egyptian national security is in essence the existence of vital water sources lying beyond the Egyptian borders (Hassan & Rasheedy, 2007). The upstream-downstream entanglement has increased as the demand for water resources continues to increase in each state of the NB. In response to this, the downstream states have chosen to maintain a defensive stance, insisting that they have "natural" and "historical" rights, and conveniently explaining that their rights arise from the past agreements, as well as the here-to-fore appropriation on the ground. This argument has been especially accentuated from the Egyptian side. Now, this paper will look into the past agreements among ENB states, namely Egypt, Ethiopia and Sudan.

2.3.2. Agreements on the Utilization of the Nile Waters: Past and Present

Hamner (2009) argues that states are more likely to enter into water treaties during times of water stress, in particular during a shared drought. Tir & Ackerman (2009), too, examine under what conditions riparian countries enter into treaties dealing with water quantity and quality, highlighting the importance of neo-liberal explanatory factors, such as riparian states trade relationships, trade interdependencies and joint democracy (Tir & Ackerman, 2009).

The Nile River, being an international and trans-boundary one in nature, has been the subject of various agreements (Memar, 2013). However, there is no internationally agreed up on treaty on the management and utilization of the Nile River which secures the benefit of all riparian countries. Therefore, the legal instruments for the utilization and the management of the water consists disputed bilateral agreements concluded amongst the basin countries.

During the last decade of the 19th century and in the first two decades of the 20th century, the colonial powers negotiated among themselves over the Nile waters in the spirit of the Berlin Conference of 1884-85. But none of these negotiations took any cognizance of the inherent security, rights and interest in the basin countries themselves (Yacob, 2011). The previous agreements and negotiations that arose from the colonial powers were biased in favour of downstream countries such agreements have resulted in varying degrees of tension and hostility and in unsustainable assumptions about the use and management of the shared waters of the Nile (Yacob, 2011).

According to Yacob (2007) the treaties and legal regimes regulating the use of Nile River can be divided into three different categories. These are: (1) Agreements between colonial powers: this category consists of the Anglo-Italian protocol of 1891, The 1906 agreements, The 1925 Anglo-Italian agreement and the 1934 Agreement concluded between Britain and Belgium. (2) Agreements between colonial powers and regional states: this includes the 1902 Anglo-Ethiopian Agreement, the 1929 Agreement signed between Britain and Italy and the 1952 Agreement. (3) Agreements between independent states of the basin: In this category one can three treaties such as the 1959 Agreement signed between Egypt and the Sudan, the 1993 Ethio-Egyptian Agreement and the Comprehensive Framework of Agreement (CFA) signed among the seven basin countries in 2010. The bilateral agreements in the first and the second category signed were primarily initiated by the then colonial powers (Yacob, 2007).

Colonial Agreements

A. The 1891 Anglo-Italian Protocol

In this agreement, Great Britain and Italy demarcated their ‘respective spheres of influence in North-Eastern Africa’. This allowed United Kingdom to maintain control over the headwaters of the Tekeze (Atbara) River (Yacob, 2011).

B. The 1906 Tripartite Agreement between Great Britain, France and Italy

In 1906, there came a tripartite agreement between Great Britain, France and Italy, in which France and Italy completely ceded all Nile Basin interests to Great Britain (Yacob, 2011).

C. The Agreement between King Leopold II of Belgium and Great Britain

King Leopold II of Belgium, the then ruler of Congo agreed with Great Britain not to attempt any construction such as dams or other irrigation facilities on the Semliki and Isango Rivers (Yacob, 2011). These agreement and protocols gave Great Britain a controlling influence over the Nile waters. The Egyptians made it clear that they were inimical to British rule, a succession of United Kingdom governments continued to play a dominating role in the Nile Basin during the first half of the 20th century (Yacob, 2011).

D. The Anglo-Egyptian Agreement of 1929

In 1922, after Egypt gained independence from the colonial rule of Great Britain, the country recognized its historical and natural rights over the utilization of the Nile waters. In this agreement, Egypt had the right to access the flow and full access to the spring flood of the Nile waters (Haftendorn, 2000). According to Yacob (2007), the 1929 agreement between United Kingdom and Egypt also stated that Egypt would take all the waters of the Nile except the 4 billion CM to be retained in Sudan and also had the rights to supervise all water-related activities in the entire basin from source to mouth (Yacob, 2007).

E. The Egyptian-Sudanese Agreement of 1959

The coming of the 1959 agreement was inspired in the 1940s when the Sudanese rejected the 1929 Anglo-Egyptian agreement that allowed the Sudan to only use a limited access of the Nile Waters while Egypt has the right to fully access the Nile for its utilization. The 1959 agreement between Egypt and Sudan recognized the notion of acquired rights; especially Egypt’s right to use the Nile water as a shared water resource and stipulated that claims by other riparian countries be deducted

from the shares of both countries equally (Yacob, 2011). The terms of the agreement were that Egypt would be allocated a lion's share of the available 55.5 billion CM of water. Sudan was to be allocated 18.5 billion CM while evaporation was estimated to account for 10 billion cubic meters. In terms of this particular agreement, no proportion of the waters of the Nile was legally recognised for the use and ownership of the other upstream countries in which all the waters of the Nile arise (Yacob, 2011).

The Nile River basin has a singular history when it comes to treaties and agreements regarding its waters. The past agreements of the Nile waters among Egypt, Ethiopia and Sudan have generally affected other riparian countries and have particularly created negotiations among the downstream countries. In most international river basins, upstream countries are able to control the runoff because they have the superior geographical location, but the case among the Nile riparian states is different (Martens, 2011). Hydro politics in the Nile Basin generally have been dominated by Egypt. The Nile's water even became an issue of national security when Anwar Sadat, president of Egypt in 1979, confronted by Ethiopian plans on constructing dams, declared that the only matter that could take Egypt into war again was water. Between 1967 and 1992, attempts were made to develop multilateral cooperation among the Nile riparian states. These attempts failed at bringing all of the riparian states into one regime (Casção, 2009).

Ethiopia's Reaction to the 1929 and 1959 Agreements

Looking at the failure of the 1929 and 1957 agreements, these agreements became controversial since it was regarded as exclusive of the upstream countries of the Nile Basin. The 1929 and 1957 agreements were biased in favour of Egypt and Sudan and overall intension of the colonial powers in signing the agreements was to exploit the resources to the extent possible for their colonial project. Ethiopia, being independent from any of these colonial rules rejected the 1929 agreement mainly for two different reasons (Memar, 2013). The first reason as such is, Ethiopia as an independent state has a sovereign power to decide on its domestic and external matters and utilize the Nile waters and does not obey to any colonial rules. This reason is well supported in the Trans-boundary Water Resources Management Principles of Theory of Limited Territorial Sovereignty. The second reason -which is more actual is that Ethiopia was never consulted on the signing of this agreement; therefore, the 1929 agreement has no obligatory rights over Ethiopia in the utilization of the Nile waters (Memar, 2013).

Similarly, the 1959 agreement showed invalidity and bias against the upper Nile riparian countries. Ethiopia rejected this agreement on the basis of the 1969 Vienna Convention on the Law of Treaties, Article 11 that states: “The consent of a state to be bound by the treaty may be expressed by signature, exchange of instruments constituting a treaty, ratification, acceptance, approval or accession, or by any other means is so agreed” (Memar, 2013). This is to imply that Ethiopia was not a signatory of the agreement neither did the state have any consent on the signing of this agreement. Thus, due to the aforementioned reasons the 1929 and 1959 agreements failed to form a platform for mutual benefit and negotiations among Egypt, Ethiopia and Sudan.

The Nile Basin Initiative

Putting their interests aside, the Nile riparian states started to look for means of cooperation. On their attempts in seeking cooperation and agreements over the Nile waters and under the donations of the World Bank, the UNDP and others, on February 22, 2011, a mechanism of a formal setting for cooperation among the Nile Basin riparian known as the Nile Basin Initiative (NBI) came to formation (Salman, 2013). The Nile Basin Initiative member states are Burundi, DRC, Egypt, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania and Uganda (NBI, 2012). All riparian states of the NB are included in the NBI, except for Eritrea, which has observer status (Martens, 2011).

The NBI is established as an intergovernmental organization and has been viewed as a transitional arrangement to foster cooperation and sustainable development of the Nile River for the benefit of the inhabitants of riparian countries (Salman, 2013). It was able to bring together for the first time the (at that time) 10 riparian states at the ministerial level. The NBI is a partnership initiated and run by the riparian states of the Nile River through the Council of Ministers of Water Affairs of the NB states (NBI 2010).

On a positive note, it is indeed encouraging to note that all the riparian states agreed to accept the NBI as an interim organisation that has the authority and means to facilitate a more permanent legal and institutional arrangement for the regulation of the Nile basin (Yacob, 2011). It is guided by a shared vision “to achieve sustainable socio-economic development through equitable utilization of, and benefit from, the common Nile Basin water resources” (NBI 2012).

The NBI is a temporary and transitional institution established until a permanent legal institution- the Nile Basin commission (NBC) established following the Cooperative Framework Agreement

(Yacob, 2007; Zerihun, 2011). According to NBI (2013) the main objectives of the institution are to develop the NB water resources in a sustainable and equitable way to ensure prosperity, security, and peace for all its peoples; to ensure efficient water management and optimal use of the resources; to ensure cooperation and joint action between the riparian countries; to seek win-win gains; to target poverty eradication and promote economic integration; and to ensure that the program results in a move from planning to action. In addition, it also aims to conclude a cooperative framework agreement that would incorporate the principles, structures and institutions of the NBI and that would be inclusive of all the Nile riparian states (NBI, 2013).

Nile Basin Cooperative Framework Agreement

Work on the Nile Basin Cooperative Framework Agreement (CFA) started immediately after the NBI was formally established in 1999 and continued for more than 10 years (Salman, 2013). The CFA negotiations were conducted under the leadership of the Council of Water Ministers of the NB states and they involved protracted phases of negotiation (Yacob, 2011). The NBI represents a highly successful mechanism to promote technical cooperation between the NB riparian countries. However, it has been facing a political deadlock over the finalisation of the CFA and in particular Article 14 (b) about the competing rights of riparian countries to use the trans-boundary water (SFG, 2013). The process of CFA entered into major challenges as a result of the resurfacing and inurement of the respective positions of the riparian over the colonial treaties, as well as the Egyptian and Sudanese claims to what they see as their acquired uses and rights of the Nile waters (Salman, 2013).

On May 2010; six riparian states namely: Ethiopia, Tanzania, Uganda, Rwanda and Kenya (5 days later) signed the CFA, also referred to as the “Entebbe Treaty” or “Entebbe Agreement” (signed at Entebbe, Uganda) in which almost a year later Burundi joined the agreement (Salman, 2013). The CFA lays down some basic principles for the protection, use, conservation and development of the NB. CFA establishes the principle that each NB state has the right to use, within its territory, the waters of the Nile River Basin, and lays down a number of factors for determining equitable and reasonable utilization. In addition to the factors enumerated in the United Nations Watercourses Convention, CFA includes the contribution of each basin state to the waters of the Nile River System, and the extent and proportion of the drainage area in the territory of each basin state (Salman, 2013).

As a general rule, the lower riparian states favour the no-harm rule, since it protects their existing uses against impacts resulting from activities undertaken by upstream states. Conversely, upper riparian states favour the equitable utilization principle because it provides more scope for states to utilize their share of the watercourse for activities that may impact downstream states (Salman 2013). Egypt and Sudan demanded and insisted that Article 14 of the CFA shall include a specific provision, to be added at the end of the article, which would oblige the basin states “not to adversely affect the water security and current uses and rights of any other Nile Basin State”. Thus, the position of Egypt and Sudan revived the longstanding disputes related to the treaties discussed above, namely Egypt’s veto power and Egyptian and Sudanese claims to their existing uses of and rights to the Nile waters under the 1959 Nile Agreement. Besides the issue of water security, Egypt and Sudan demand that CFA shall include explicit provisions on the notification of other riparian states of planned measures which may cause significant adverse effects to other riparian states (Salman, 2013). Ethiopia opposed notification of other riparian states because of its concerns that such notification may be construed as recognition of the 1902 treaty. As discussed, Egypt claims that the treaty granted it veto power over projects on the Nile in Ethiopia. Ethiopia further claims that it was not notified by Egypt and Sudan of any project affecting the Nile, and so it is not obliged to notify them. In support of their claim, Egypt and Sudan demand that provisions on notification of other riparian states in line with those included in the World Bank Policy for Projects on International Waterways and the Watercourses Convention be included in the CFA (Salman, 2013).

2.4. The Grand Ethiopian Renaissance Dam (GERD)

Before discussing the Grand Ethiopian Renaissance Dam (GERD), it is important to discuss the past history of dam building in Ethiopia. Ethiopia is one of the countries that are classified as rich in water resources. Its renewable water resource exceeds 122 billion CM/ annum with a per capital of 2,000 CM, making it the richest water resource endorsed country in Africa next to DRC. However, despite its richness in water resources, Ethiopia has been one of the least developed countries with the lowest per capital water storage and electricity production in the world (Salman, 2011).

Generally, the Nile River remains largely underdeveloped with exception of the two downstream countries of Egypt and Sudan. This is rapidly changing as Egypt and Sudan, which are largely

dependent on the Nile River; have to no visible alternative water resource from which to support agriculture, electricity generation, irrigation and domestic water supplies (Whittington et al, 2014). Egypt and Sudan have made use of Nile River resources for economic development through dam construction for hydroelectricity generation, irrigation for small-scale and cash crops, low-season flow regulation, and flood prevention. Upstream NB countries, such as Uganda and Ethiopia, have started acting on development plans for harnessing the shared natural resources (Wolf et al., 2003).

Historically, Ethiopia has been interested to build on the Lake Tana during the reign of Teferi Mekonnen in which, in 1927, he invited the American J.G White Engineering Corporation for the agreement. As such, Ethiopia's history with hydroelectric power dates back to 1932 when the first dam was erected on the Akaki River with a mere 6 MW capacity. Also the studies undertaken in 1950s and 1960s indicate that out of the total estimated potential of Ethiopia, about two-third of the amount was from Blue Nile system (Abraham, 2004).

As a result of relative peace, improvement relation with the west and considerable increase in the world coffee prices, Ethiopia launched a very ambitious development programme to build a number of large dams in the country such as; the Fincha Dam on the Blue Nile (80MW), Koka Dam on Awash river (40MW), Melkawakena Dam on Wabe Shabelle River (150MW),Tsis Abbay Dam (first and second) at Lake Tana(75MW) and the Sur Dam on Baro (40MW). These development programmes were facilitated mainly due to the discovery of natural gas in Ogaden region and the emergence of China as a dam builder and financier (Salman, 2011). As such, Ethiopia constructed three consecutive dams on the Omo river, which are; Gilgel Gibe I (180 MW), in 2004, Gilgel Gibe II (400MW), and Gilgel Gibe III (n.d). Most recently, under the GTP I, Ethiopia is currently undertaking massive hydropower development activities in different river systems within the country, one of this mega projects being the Grand Ethiopian Renaissance Dam (GERD here onwards).

On 2nd April 2011, at Guba; the regional state of Beneshangul Gumuz, over the Blue Nile River/ Abbay, the late Ethiopian Prime Minister H.E. Melese Zenawi formally launched the largest engineering mega project ever attempted in Ethiopia. At first, the project was named the Grand Ethiopian Renaissance Hydropower Dam Project (GERHDP), it was then later renamed to the Grand Ethiopian Renaissance Dam (GERD).

The GERD project is located near the border between Ethiopia and Sudan. Standing tall at 151 meters, the dam on its completion is expected to be the largest hydroelectric power plant in the African continent, producing an estimate 6000MW and sought to create a reservoir with storage capacity of 74 billion MC (Tadesse, 2013).

Figure.3. An overview of the GERD



Source: Adopted from Daniel (2011)

When Ethiopia diverted the first stretch of the Nile in May 2013 in anticipation of the dam's construction, tensions reached unprecedented heights and led Egyptian politicians to publicly threaten military action (Goitom, 2014). Under this pressure, Egypt, Ethiopia and Sudan came to recognize the necessity of water resources present for diplomatic opportunities with the high importance of cooperation between the countries for peaceful international negotiations. The attempt of Ethiopia to use the Nile waters not only threatened the hardliners but also has caused the moderate state leaders and intellectuals to consider using the Nile waters in collaborative manner. As such, a first step towards a more official institutional approach to future NB development was reached on the GERD when Egypt, Ethiopia and Sudan signed an agreement in March 2015 referred to as the Declaration of Principles.

2.4.1 Agreement on the Declaration of Principles

After many decades of struggles, tension and potential negotiations on 23rd March 2015, the three member states of the NBI: Egypt, Ethiopia and Sudan signed the Agreement on Declaration of Principles (DoP here onwards) on the GERD in Khartoum (NBI, 2015). This was a major step in the history of cooperation on the Nile and changed the Nile politics. Besides being a common ground of understanding, the DoP is a sign for potential economic cooperation and understanding of the three ENB countries.

According to a press release from EIPSA (2015), the DoP is a breakthrough and a historically significant phenomenon for Egypt, Ethiopia and Sudan mainly for five major reasons (EIPSA, 2015). The first reason is, besides being the very first consensus reached among the three countries, the DoP signals a fundamental change of course into a convergence of interests of the three countries on the management and utilization of the Nile waters. Second reason, this agreement disregards the so-called previous treaties of 1929 and 1959 that denied Ethiopia's natural right to use its waters. In addition, the three countries agree to the basic principles of international water laws principles such as 'equitable and reasonable utilization' and 'no significant harm'. Thus, all riparian states have the right to utilize the Nile waters for any purpose. Third reason, Egypt which has launched massive diplomatic opposition and denial of Ethiopia's right to utilize the river has on the DoP finally agreed and accepted Ethiopia's right to utilize the Nile waters on the construction of the GERD. The fourth reason, the DoP symbolizes trust and confidence building which fosters a high potential for peace and development among the three countries.

Thus, the significance of this agreement is that Egypt, Ethiopia and Sudan have realized that cooperation, peace and sustainable economic benefits are the way forward (EIPSA, 2015). As such the next chapter of this thesis will emphasize on the budding ways for peace and development among Egypt, Ethiopia and Sudan on the construction of the GERD.

CHAPTER THREE

Data Presentation, Analysis and Discussion of Findings

3.1. Data Presentation and Analysis

In this section of the thesis, the gathered empirical data are analysed and presented. Arguments and findings are discussed and organized into themes. First the primary data is organized

thematically and analysed along with the ideas of literature revised. Furthermore, the relevant data for the study are organized into three major headings aiming at discussing and answering the research questions.

3.1.1. Challenges and Tensions in the Nile Waters

As an initial argument of this chapter, it is important to primarily discuss and analyse the challenges and tensions in the Nile waters. In relation to this, it is also essential to view the perspectives of Egypt, Ethiopia and the other riparian states in the Nile Basin. As such, the following theme of the analysis deals with the challenges and tensions over the Nile waters in the Eastern Nile Basin specifically in seeking to answer how those challenges and tensions affect the peace and development process in the basin for the eastern Nile riparian states.

The Nile River basin has possessed several challenges for several decades, these challenges range from environmental to socio-political factors (NBI, 2010). Similar to the environmental and geopolitical factors affecting the region, the Nile Basin region is geographically prone to conflict, as the basin is mainly located in the horn of Africa where rising conflicts have simmered for decades. It is also important to notice that the focus of the study is on the Eastern Nile Basin countries namely Egypt, Sudan and Ethiopia. Water use conflicts between these countries of the Nile Basin have been there for decades.

The riparian states of the Eastern Nile Basin have pursued unilateral and conflicting approaches to the utilization of the otherwise shared water resources avowedly driven by their respective national interest. The political expressions of these national interests have resulted in disagreements and tense relationship between Ethiopia and the two downstream neighbours of Sudan and Egypt (Yacob, 2007). Furthermore, as Yacob (2007) stated, due to lack of adequate upstream-downstream water utilization and management, the three riparian countries of Eastern Nile have been challenged by various complex problems such as excessive erosion and soil loss in the upper stream Ethiopia; flood and silt accumulation in the midstream Sudan and excessive water loss through evaporation in downstream Egypt.

A. Water Challenges in the Eastern Nile Basin

According to Rhumiro (2006), water is a scarce natural resource and is essential for sustaining a balance in the ecology and is essential for human health, food production, and other economic activities. Water is a vital resource for all aspects of human existence; environmental, survival,

economic development, food security and even for good quality of life. Yet, globally fresh water represents only 2.5% and lakes shared by one or more nations (Rhumiro, 2006). The boundless demand for water is showing a rapid increase due to a rise in population growth and shifting consumption patterns. Rising demand and high population levels put increasing pressure on fresh water resources and the political, economic and social institutions governing their utilization (Luzi, 2007). As such, fresh water is increasingly become a scarce resources divided unevenly between nation states.

One of the scholar informants mentioned that:

Water scarcity is becoming an international concern, more specifically in the Nile Basin. Some studies predict that by 2025, it is expected that almost all countries of the Nile basin will experience water stress or scarcity.

Ibrahim (2012) states that one of the major challenges faced in the Nile Basin is population growth and poverty, which are also one of the main factors responsible for land degradation and environmental pollution in the Nile Basin. In addition, a rise in population together with globalization and industrialization has left a permanent streak on the earth's ecologies, producing extensive environmental destruction and scarcity in natural water resources. As the population of the Nile basin continues to expand, water scarcity threatens to be a vanguard of the regions problems. Despite the enormous potential of the Nile, abject poverty, food insecurity has been an enduring feature is also expected to diminish the future use of the Nile. Therefore, the demand for water in the Nile basin riparian states is likely to rise while the supply will decrease in the future (Ibrahim, 2012).

Table.2. Population Size and Densities of Eastern Nile Basin countries

Country	Area (KM²)	Population Size (2016)	Population Growth Rate (%)	Population Density (People/KM²)
Egypt	1,001,450	94,666,993	2.51	92
Ethiopia	1,104,300	102,374,044	2.89	99

Sudan	1,861,484	36,729,501	1.69	22
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Source: Reviewed from CIA – The World Fact-book (Accessed October 2016).

Despite the fact that, the Nile Basin is endowed with extraordinary natural resources, its inhabitants face a number of other considerable challenges. As mentioned above, the Nile Basin region is considered as one of the poorest regions in the world with most of its population depending directly or indirectly on agriculture as a major means of livelihood (UNDP, 2010). The pressures exerted by the growing population leads to increasing demands for natural resources leading to loss of forests and wetlands, land degradation, desertification, alien invasive species, over fishing and water pollution (NBI, 2010).

The challenges are further aggravated by regularity occurrences of climate change and natural shocks such as natural disasters (droughts, flood, desertification...etc). The other challenge is conflicts within the Nile Basin region. This region has been unfortunate when it comes to maintaining a sustainable peace process. The Horn of Africa is one of the conflict affected regions in the world. Moreover, these challenges pose significant threats to food security and the social welfare of the Nile Basin population (UNDP, 2010).

According to NBI (2012) the other cause of challenge in the Nile Basin and something that is taken for granted is the poor institutional structures and capacity for effective water resources management and the commonly over-burdened and poorly trained and under-resourced professionals and experts (NBI, 2012). Considering that the factors that enabled a large population to make a positive contribution to economic development are not well established in most of the Nile countries, the challenges posed by the rising population far outweigh its benefits, and threaten to prevent these countries from becoming middle-income economies by 2025 or 2030. In parallel to this, trans-boundary water courses crossing different states such as the Nile Basin, face challenges in terms of management as each country has a differing interest as per their national and local. In Egypt and Sudan, population is largely concentrated along the course of the River Nile, while in the upstream countries it follows the pattern of rainfall distribution (NBI, 2012).

An expert on water development commented about the threat of rapid population growth as such:

Growth in human population is the primary factor behind the escalating demand for water for various uses such as agriculture, domestic water supply, hydropower generation,

fisheries production, industrial production, and recreation. One of the major challenges facing the environment of the region is rapid population growth, not to forget that it is also a poverty indicator.

Shedding light on the bright side, the basin countries have collectively risen to the challenge of managing the valuable endowment of the river and its basin for poverty alleviation, resource conservation and mutually beneficial gains. In addition, most of these countries have recognized the importance of basin-wide and integrated management of the natural resources in particular. As a result, there have been treaties and institutions working to address the challenging factors that threaten the regions peace and development process. To elaborate more in relation to the challenges, it would rather be relevant to carefully examine and discuss the causes of conflict and tensions that led the countries to contention. Taking this argument into consideration, the following part of the thesis will present the analysis of conflicts and tensions that have simmered in the Eastern Nile Basin.

B. Conflict and Tensions in the Eastern Nile Basin

The Eastern Nile Basin states i.e. Egypt, Sudan and Ethiopia, are facing challenges over the past decades due to a number of factors such as rapid growth of population, poverty, land degradation, and food and water insecurity. Even though the ENB countries share the longest river in common, these states experience different agro-ecological extremities, varying from the highlands and wetland areas of Ethiopia to the deserts of Sudan and Egypt. Every riparian state has an entirely different capacity for using the Nile waters, which depends on a combination of geographical position, economic capacity, and the potential to develop resources (Martens, 2011).

Conflict in the Nile Basin is basically related to the allocation and uses of water among the riparian states. Historically speaking, all throughout twentieth century Egypt and Sudan were the sole beneficiaries from the Nile waters, basing their respective claim on ‘historical’ and ‘natural’ rights doctrine. Ethiopia, on the other hand, rejected the claim and the status quo established by colonial and post-colonial accords to which it is not a party, but also and in reaction to this, holds to doctrine of ‘absolute territorial sovereignty’ (Ibrahim, 2012). Ibrahim (2012) further states that the Nile River has served as the source of tension and mistrust in the two countries relations. It is rightly outlined that “deep distrust, suspicion, misunderstanding and even political and military confrontations have characterized their relations throughout history” (Ibrahim, 2012).

In addition, the challenge for regime formation in the Nile Basin is especially difficult due to historic water sharing agreements as most of the existing agreements between the Nile riparian states were made under the rule of colonial powers. In fact, there has been no legal agreement between all Nile riparian states, since the NBI, established in 1999, which does not yet have legal status.

One informant from the Water Institute in North America explains the relationship of the Eastern Nile Basin countries as such:

Knowing that Egypt and Sudan were one country many centuries ago and allies in most recent times, I seem to detect and think that there is more allying interest between Ethiopia and Sudan than between Sudan and Egypt. It has been difficult also because Sudan long resisted Egyptian domination and both Egypt and Sudan recently, and Ethiopia too were having cataclysmic political interests of their own. So I think that has made it a difficult situation to understand their relation as well.

The Nile riparian states of the ENB have pursued unilateral and conflicting approaches to the utilization of the otherwise shared water resources avowedly driven by their respective national interest. The political expressions of these national interests have resulted in controversies and tense relationship between Ethiopia and her two downstream neighbours; Sudan and Egypt (Yacob, 2007). By the 1990s, severe new challenges of water scarcity were added to these tense relations, as a result of increasing population growth in combination with unequal use of the fresh water resources among multiple users. As a consequence of global change and the subsequent demand for more fresh water, it is expected that tensions over water allocation will increase in the future.

As Martens (2011) puts it, since the 1990s, some studies have emphasized the link between resource scarcity and conflicts, arguing that an increased demand for fresh water resources would likely lead to conflict (Martens, 2011). Also, current trends indicate an increase in the demand for fresh water in the Nile Basin, and therefore an increasing potential for conflict.

Generally, the potential conflict in ENB is expressed by Yacob (2007; 224) as:

.....ideally, one would expect hydro political interdependence to induce upper-downstream cooperation. So that hydro political tension in the basin originates from;

downstream insecurity versus upper stream action, lack of legal institutional frame work, unilateral development of water resources, latent military threat and Afro-Arab divide.....

Likewise, Deng (2007) stated that most worrying of all, is not uncommon or experts and scholars to identify the Nile basin as one of hotspot where violent conflict could break out over the shared water resources because of various political intricacies that it involves. As such, the intricacies that may lead to conflict include: an alarming population growth, the injudicious and incomprehensive legal relations, inequitable use of water resources, inter states that are marred with suspicion and misunderstanding, emphasis on military solution on the part of some riparian states and unilateral appropriation of Nile (Deng, 2007).

In order to approach the possibilities for cooperation and to avoid new potential conflict, a sound strategy will be required to satisfy the water needs and demands of all riparian countries. Thus, the need for action is acute to prevent tension and conflicts in the future. Egypt and Sudan have the most to lose as they highly depend on the Nile Waters for their economies and thus the most to gain from cooperation. In this regards a diplomat from MoFA commented that:

In order to avoid potential conflicts in the future, a multilateral agreement is of high importance for a more sustainable in addressing the Basin's future water supply and to tackle the challenges faced in the basin. The past agreements and treaties in the ENB between Egypt, Ethiopia and Sudan have played their part in creating tensions and conflicts which has hindered the peace and cooperation process of the ENB. Taking this into account, learning from the past the Nile Basin riparian states can now move onto a better negotiation process and agreements, as it is a crucial step for building a better ground for the peace and development of each nation and in the region.

Perceiving the Nile River from the Lenses of Egypt, Ethiopia and Sudan

Kum (1990) clearly states that perception of parties about a reality can lead them to conflict. The relation of parties and their likelihood of ending up with conflict are determined by how they perceive each other and the issue between them (Kum, 1990). The perception of Egypt, Ethiopia and Sudan has also created hesitation and tensions when it comes to cross-cultural communication and building cooperation over the Nile waters. The disagreement and contention between these

countries, especially between Ethiopia and Egypt emanated from the disparity of the perception of the two countries. For instance, Egypt perceives Ethiopia's attempt of utilizing the river as a threat. On the other hand, Ethiopia perceives Egypt as if it is denying its right to use the water resource of Nile River. As such, it is important to look at the perception of these three Eastern Nile Basin countries since it affects in shaping the relation of these countries.

Egypt and the Nile

Historically, Egypt has depended up on the Nile waters from the times of antiquity. The renowned Greek philosopher and historian Herodotus termed Egypt as '*the gift of the Nile*' because the Nile River annually flooded its banks in ancient times, creating fertile farm fields for people to plant their crops. Egyptian leaders, using Herodotus as their hegemonic narratives, have always been industrious in ensuring a monopoly over the waters of the Nile. Also, since the Nile is the longest river in the status of being the '*mother of the world*' (Deng' 2005 and Ibrahim, 2010).

Abraham (2004) clarifies that Egypt has made a greater use of Nile River than all the riparian countries. This is due to geographical, historical, and economic circumstances which have been obtained in Egypt. In fact about 98% of the population lived in the Nile valley. In another aspect, Nile River was the only water supplier for Egypt in which the people have settled in the gorge of the Nile and invented a new method of controlling the water for utilization and the flood from destroying life and poverty of the people. Thus, the Nile River has been not only the life saver of the Egyptian people but also the source of Egyptian civilization (Abraham, 2004). Moreover, Former Egyptian president-Anwar Sadat- in his speech of 1978 mentioned that Egypt will go for war if any party attempts to interrupt the flow of the Nile River as Egyptians fully depend on it. This Egyptians point of view has been endured for long time and is still persisting in the twenty-first century (Okoth-Owiro, 2004). Egyptian perception about the Nile in general is that they claim the totality of the Nile water for unitary utilization. Yacob (2007) indicates that Egyptian perception of the Nile is that:

"...the country became convinced that there was no power on earth that could delay or divert the direction of the Nile waters... upstream nations should stay away from any substantive use of the water resources" - Yacob, 2007 (p.199).

Moreover, hydro-politics of the Nile is dominated by Egyptian hegemony played out in the spirit of controlling and owning the Nile rather than that of regulation and cooperation. Due to Egypt's monopoly over the Nile and the fact that Ethiopia is the most voluminous contributor to the water of the Nile, the real politic of the river has mostly been played out between the two states and to some extent with Sudan (Ibrahim, 2010).

Ethiopia and the Nile

The Abbay river in Ethiopia, is believed to be ‘the father’ of all rivers and symbol of the nation (Yacob, 2007). The traditional Ethiopian perception of Abay; the main tributary of the Nile River, is unique and encompasses much more than just the physical body of water. It accounts spiritual reverence and a sense of prestige and identity. Songs, poems, folk stories, ritual performance and religious shrines are attributed to the river. It is indeed personified as the great father of rivers and there were times when the Abay was perceived as an instrument of diplomacy or political leverage to check on certain behaviour of the downstream states (Yacob, 2007).

Accordingly, as it was stated in (Yacob, 2007; 70):

Excerpt from verses of an Ethiopian poet laureate; Tsegaye Gebremedhin, about the river Abay, explain the relationship of the river to ‘Cush’, the ancient stock of people believed to inhabit Ethiopia, Sudan and Egypt. According to him, the Abbay or Nile is the cradle of the black race and ‘the blood of Ethiopia and mother of Cush’.

Sudan and the Nile

The Nile River traverses the entire land of the Sudan and indeed, the Blue Nile and White Nile meet in Khartoum to form the Nile River, which flows north ward to Egypt until it pours its waters into Mediterranean Sea. Thus, like Egypt, the Sudan claims absolute territorial integrity rights to the Nile River. Besides, it also argues that most of its land is either arid or semi-arid as opposed to the lands of upstream countries, which have a high rate of rainfall and thus capable of maintaining rain fed agriculture (Deng, 2005).

Sudan is the second country that has made greater use of the Nile waters next to Egypt in the Nile Basin. In Sudan the problem of water is closely linked to economic development. Firstly, Sudan has the twin needs of irrigation and the hydroelectric power generation coupled with the need to

protect it's near the bank of the Nile from annual rainy season floods in the highlands of Ethiopia. Sudan's reservoirs are small and the floods from upstream have, at times lead to sedimentation and silt. Secondly, although in the past Sudan had hoped to be the breadbasket of the region, the discovery of oil might lead to a decrease in the importance of agricultural sector and oil exploitation in the southern Sudan (Tesfaye, 2005).

In sum, considering the challenges stated in the earlier analysis and the literatures reviewed in the process, it is now fair to answer the question - Does water cause conflict? The logical answer is YES! On the contrary, we can also analyse that if watercourse are properly dealt with and efficiently managed in sustainable manner, water can be a means of cooperation. And cooperation is a prerequisite of sustainable development.

3.1.2. Peace and Development Implications of the GERD for Egypt, Ethiopia and Sudan

Under this theme of the thesis, the nature of the GERD, its prospect and the impact it has on the Egypt, Ethiopia and Sudan is presented and analysed. Furthermore, the cooperation and peace implications of the dam are further presented and analysed. The development implications of the GERD for Egypt, Ethiopia and Sudan will also be discussed.

A. Nature and Prospects of the GERD

Successions of Ethiopian leaders have either sought to assert their right to an equitable share of the Nile waters or to carry out various projects in different parts of the country. Their dream became a reality on April 2nd, 2011 as the late Prime Minister of Ethiopia, H.E. Meles Zenawi announced to the world that Ethiopia was about to construct Africa's first and world's tenth largest dam on the Blue Nile. The project was originally named "project X", it was later referred to as the 'Millennium Dam'. The dam was referred to as 'Millennium Dam/Hidase Dam' as it aimed at becoming the largest dam in Ethiopia and in the continent upon its completion. Furthermore, the name "renaissance" or "hidase" was coined out to convey Ethiopia's aspiration to reclaim its ancient glory and global status, thus it was reasoned out that the dam should be called renaissance dam as it is an important component of it (Daniel, 2012). Further, on 15th April, 2011 the Ethiopian Council of Ministers renamed the project again as the Grand Ethiopian Renaissance Dam (GERD) or the Grand Ethiopian Renaissance Dam Project (GERDP).

The dam is currently being constructed on the Blue Nile River on the northwest part of Ethiopia in the Benishangul-Gumuz Regional state. Bordering Sudan in the east, the GERD is a gravity dam

and is estimated to be 145 meter high and 1780 meters long with a reservoir capacity of up to 66 BCM of water which occupies 1,680 KM² (Temesgen 2011; Daniel, 2012). In March 2012, the Ethiopian government announced to upgrade the power plant's design by increasing it from 5,250 MW to 6,000 MW, pushing Ethiopia to have a potential of producing a total of 45,000 MW of hydropower (Tadesse, 2013).

A US\$4.8 billion contract was awarded to Salini Construction; an Italian construction company with 70 years of experience and has been renowned for constructing an estimate of 20 dams in Europe, Asia and Africa. This construction company is also the contractor for Ethiopia's other hydroelectric power houses such as GilgelGibeII and Tana Beles dams and is also in charge of the on-going constructions of GilgelGibeIII (Mwanalushi, 2011). As local and international experiences demonstrates that such construction should not go without environmental concern and contractor focused on the use of clean technology. Salini stated that: "we can achieve without major environmental impact, because the area is scarcely populated, therefore no major resettlement is necessary, and with positive effects on the downstream agricultural land (Mwanalushi, 2011).

According to Mwanalushi, (2011), the dam was scheduled to start delivering electricity in September of 2014, but due to financial constraints the project has been extended to be completed in July 2017 (Mwanalushi, 2011; the Economist, 2011). In relation to this, the Ethiopian government has stated that it intends to fund the entire cost of the dam by itself and by its society. As a result, it has issued a bond targeted at Ethiopians in the country and through the diaspora abroad till the completion of the dam. Furthermore, the government of Ethiopia desires at raising funds through the selling of treasury bonds to be purchased by domestic banks, individuals and public at home and the diaspora living abroad (The Economist, 2011).

One interviewee with a trans-boundary water expertise in North America commented on the final aspect of the construction of the GERD as such:

Self-financing of such mega project is a good way to go for Ethiopia. However, self-financing is challenging and it becomes difficult to complete the project and sometimes there is a seductive propensity to cut corners on the environment or with dislocating people and so forth. It is still hard to maintain integrity and go with the project in which Ethiopia will

have a lot of pressure to fill out the dam quickly, which could be unhealthy for the security implication of the GERD.

International donors such as the World Bank have not provided loans to the project due to the issue of regional geo-strategic interests (Hagmann, 2013). As the dam requires huge amount of financial capital and since international financial institutions, for instance, WB and IMF are not willing for the support of the dam, to cover all the costs domestically it would be very difficult and because of this we would challenge financial crisis internally (Aschenik, 2013). In relation to this, another interviewee; a Hydro engineer, commented that:

The global financial institutions such as the World Bank and others are in a very precarious position these days because they have been sort of controlled over the years to setting up minimal environmental labour human rights safeguards. You can't get the money from the WB to build a major infrastructure project especially a dam, unless you have environmental safeguards, labour safeguards and socio-political sequels.

The GERD faces external challenges mainly coming from the lower riparian states of Egypt and Sudan. According to Whittington (2014) and Veilleux (2014), the GERD that is commissioned starting in 2017, threatens to control 60-80% of the water resource that Sudan and Egypt receives from the Nile river and challenges the existing waters allocation (Veilleux, 2014; Whittington, 2014). Having highlighted the nature of the GERD and its prospects, in what follows we will look into the development implications and the means for peace and cooperation of the GERD for the ENB countries.

B. Development Implications of the GERD for Egypt, Ethiopia and Sudan

According to the United Nations (2015) report, the Nile basin countries' population have more than doubled within the last two and a half decades. In parallel to this, violent conflicts, political unrest, displaced communities, high incidents of disease, lack of infrastructure and economic underdevelopment persist. The economies of all but two (Egypt and Kenya) of the basin countries are among the least developed in the world, appearing on the United Nation's Least Developed Countries list (UN, 2015). However, the Nile Basin riparian states have vast interest to use the river for poverty reduction and socio-economic developments. Similarly, despite all the challenges

faced in the Nile Basin, shifts in global economics are providing new sources of foreign investment for essential infrastructure; changes in national and regional policy are focusing on national development and changes in land use from subsistence to cash crops. Some of these development changes are focused on Nile basin resources (Veilleux, 2015). As a result, the GERD is one of these development project designed to harness hydropower from the Nile River.

The GERD has gained a special development importance highly pronounced by the Ethiopian government. As Kunama (2011) stated, on the completion of the dam, it will accelerate the path way to ‘a green economy’ in Ethiopia in which already the Green Development Strategy designed for a country that embedded in GTP I under which the country move towards achieving a sustainable development and poverty eradication by improving human wellbeing and social equity through reducing environmental risk and ecological scarcity (Kunama, 2011). Additionally, on a report made by the Ethiopian local newspaper; Reporter (2013), writes that *‘Ethiopia hopes that the ambitious hydroelectric project, scheduled to be completed in 2017, will throw the country out of poverty. [...] to achieve the growth and development goals it has set’* (Reporter published on June 03, 2013).

Moreover, Aschenik (2013), points out that the GTP recognizes that sustainable development in Ethiopia and can only be achieved if development is pursued in the social, economic and environmental areas in a balanced manner and ensuring that benefits accrued are equitably shared among the citizens of the country (Aschenik, 2013).

From a historical point of view, Egypt and Sudan have made use of Nile River resources for economic development through dam construction for hydroelectricity generation, irrigation for small-scale and cash crops, low-season flow regulation, and flood prevention throughout decades as both countries claim protected rights to the Nile water under the 1929 and 1959 Nile treaty (Whittington, 2014; Veilleux, 2015).

To date there exists no legal international institution to govern the development of water resources across borders in the Nile River basin beyond the Nile treaty, which is contentious for many of the Nile basin countries because it is exclusive (Veilleux, 2015). However, the governments of the three ENB countries have held closed-door discussions from 2013 to early 2015, when they reached an agreement and signed the Declaration of Principles (DoP) on the GERDP on 23 March, as a first step towards more official institutional approach to future Nile basin development.

According to Belachew (2013), the GERDP will play a vital role for East African countries as well as for Egypt in securing electric supply. The GERDP will generate electric power within stalled capacity of 6000MW, with an annual energy production of 15,130 GWH/year, and balance the demand/supply difference that the country has been facing as a result of its expanding development (Belachew, 2013). The developmental benefits of GERDP are not limited with power supply to Ethiopia only as it will also benefit the downstream countries of Sudan and Egypt (Belachew, 2013). Furthermore, according to Veilleux (2014), the GERD is also important for regional economic development and stability. Contracts have been signed to supply neighbouring countries, such as Djibouti, which currently runs on mostly diesel generation with electricity generated from the GERD (Veilleux, 2014).

An informant, an Ethiopian government official mentioned that:

If power can be generated and traded in key times, everybody gains; it is a huge mutual gain in generating electricity which is the obvious benefit for Ethiopia and its neighbouring countries. I think also there is a general factor that arise in the economic tides and raises all ships. Ethiopia is long overdue for a steamed economic development such as this, but this has changed due to the construction of the GERD and the mutual benefit gains it will bring to the region.

According to the World Bank (2016) Ethiopia, Sudan and Egypt have generated 894MW, 1591MW and 2800MW from the Nile River respectively. The power demand of Ethiopia has been growing at an average rate of 25% per year during the last five years and the demand forecast for the next five years is estimated to be 32 per cent per annum as per Ethiopian Electric Power Corporation (WB, 2015). In addition to this, the GERDP will increase the current Ethiopian electricity supply by triple (Master Resources, 2016). The power will also be exported to other East Africa countries to improve the coverage of the electricity of the region, as such; the GERDP will be a hub for clean and renewable energy supply for Ethiopia and other African countries at cheaper prices. In effects it will be a catalyst for people-to-people relation as well as the trade among the countries in the region (Belachew, 2013).

According to Belachew (2013), besides hydropower generation, the GERDP will also have multiples developmental benefits for Egypt and Sudan. Studies have indicated that semi-arid and arid regions are mostly affected by climate change rather than a change in temperature (Belachew,

2013). The same writer further describes that hydrological events including the alternation of droughts and flooding are most likely caused by climate change. The GERDP will allow water regulation and flood control for Egypt and Sudan. In addition to this, the GERDP will allow for regulated and a sustainable minimum flow level in the dry season. Sustainable and regulated flow of water will also allow for increased agricultural production for Egypt and Sudan (Belachew, 2013).

Similarly, the GERDP benefits for the downstream countries in trapping sediment that otherwise shortens the lifetime of dams downstream, controlling flow through the rainy and dry seasons, and potentially storing water as the Nile loses about 70% of water resources to evaporation along its course (Swain, 2011; Whittington, 2004). According to Belachew (2013), it is estimated that between 157.2 and 207.2 million tons of sediments are transported annually from the Ethiopian highlands along the Nile sub-basins of Sobat, Tekeze and the Blue Nile (Belachew, 2013).

Moreover, the Nile Research Institute (NRI) estimated that more than 6.285 billion tons of sediment was accumulated in Aswan High Dam between 1964 and 2008, with this having large spill over effect in terms of economic costs for Sudan and Egypt (NRI, 2008). Thus, when the GERD works in full fledge, the sedimentation in the Nile Basin flowing to the downstream countries of Egypt and Sudan will be reduced by up to 86%. As such, Sudan and Egypt will as such benefit from cost reduction for dredging of canals. Ethiopia can also benefit more by avoiding and further decrease sedimentation flooding on the Ethiopian highlands by using irrigation and other soil and water conservation practices such as reforestation, plantation and using screening (Belachew, 2013). In relation to this an Egyptian official working for the Embassy of the Arab Republic of Egypt commented that:

I personally believe that Ethiopia and Sudan will benefit more economically than Egypt in this regard. Ethiopia will generate hydropower and will greatly benefiting from this dam. Ethiopia will also benefit the other upper stream riparian states of the Nile Basin, as the country also aims at trading hydropower energy. Since Sudan has been suffering from flooding over the past decade, the dam will regulate the flow of water for Sudan which will support the economy mainly through irrigation and agriculture.

According to the two Egyptian authors, Shaltout and El Housry (1997), it is estimated that 14.3 billion CM and 4.7 billion CM of water evaporates from the Aswan High Dam and other dams in

Sudan annually respectively. Coming to a rescue, the GERDP will minimize the evaporation loss from dams located in the arid and semi-arid parts of the ENB, particularly in the deserts of Egypt and Sudan. Additionally, the development of GERDP will encourage the decommissioning of wasteful dams like Jebel Aulia in Sudan and reduce the operating level of the Aswan High Dam in Egypt, and other dams in both countries (Villiers, 2001). Villiers (2001) further elaborates that the best way for Egypt and Sudan is to store Nile water in the Ethiopian highlands by making more reservoirs, where evaporation rates would be far lower than they are in Lake Nasser behind the Aswan High Dam which is located in the middle of the desert, resulting in losses of 2 meters high every year to the sun (Villiers, 2001).

Apart from the development welfares of the GERDP for the ENB countries, on the contrary like every mega development project there are some bottlenecks of the construction of the GERD. Thus, has drawn the attention for a number humanitarian and crisis group organizations. For instance, large dam projects eliminate the possibility of continued resources use for subsistence communities by completely altering the river system. Unresolved issues of compensation for displaced communities persist on almost every major dam project over the world (Veilleux, 2015).

Riverine subsistence communities are reliant on river systems for economic and socio-cultural activities; all aspects of their life are centred on the river's ebbs and flows (Veilleux, 2014). They are adapted to live in river systems; their entire knowledge base is about the seasonality and subtleties of when and where to fish, plant, dig for gold, cross, wash, and drink. There is no solid example of a displaced community from a dam project that had wonderful results in retraining and resettling (Veilleux, 2014). Hence, construction of dams adversely affects the livelihoods of small-holder farmers inhabiting the basin.

According to McDonald (2009), dam construction in the general sense will displace local communities and technological fixes cannot be mitigated for the displaced communities. For instance, The Chinese-funded Merowe Dam in Sudan displaced 50,000 people (McDonald, 2009). In addition, the recently Chinese-funded heightened Roseires Dam in Sudan displaced a collective total of 110,000 people (ICG, 2013). The Aswan High Dam displaced over 100,000 people, mostly the Nubian ethnic minority (Fahim, 2013).

The GERDP has been estimated to displace approximately 20,000 people, mostly the Gumuz ethnic minority of Ethiopia (Veilleux, 2014). Despite this, the issue has been handled closely in

Ethiopia with consistent communication about relocation community plans with the Gumuz villagers. The Ethiopian government has designed comprehensive plans for resettlement and trainings to modernize the now very traditional Gumuz community (Veilleux, 2015). Of course, apart from formal plans to modernize the life of the displaced people, dam construction related activities have already created quite a large number of opportunities for the local people.

C. Peace and Cooperation over the Nile Waters

Trans-boundary watercourses can either be a source of conflict or means of cooperation between riparian states (Zerihun, 2014). The Nile river dynamics are an example of how resources should create opportunities for diplomatic cooperation. Cooperation between Egypt, Ethiopia and Sudan is encouraging considering the challenges that exist in the region and highlights the importance of peaceful international negotiations that trans-boundary water resources necessities (Veilleux, 2015).

Logically speaking, although countries located upstream in a river basin are normally in a privileged situation, this however is unfortunate and untrue for the Nile basin. This could be explained by the different treaties and agreements between the riparian states of the Nile Basin, especially between the ENB countries of Egypt, Ethiopia and Sudan. Therefore, before proceeding to cooperation over mega projects such as the GERD and the importance of cooperation for the utilization of the Nile Basin for Egypt, Ethiopia and Sudan, it is important to account the historical negotiations and treaties and why those have failed. Subsequently, the past histories of negotiation and agreements between the ENB countries are discussed.

Cooperation over the Nile Waters: Past to Present

Egypt and Sudan were under the British colony from the late 19th century until 1937 for the former and from 1899 until 1956 for the latter (Swain, 2011). Other active colonial powers in the region such as Italy, Belgium and France also had great interest over the Nile waters. Britain who was a great colonial rule in the region during that period tried to protect the water flow to Egypt for its own strategic reasons. In addition, Egypt's fear about the exploitation of the Nile River started to grow (Swain, 2002). Following this, after the construction of the Aswan Dam in 1889 the first treaty of the Nile River was signed between the colonial powers of Britain; on behalf of Sudan and Egypt and Italy; on behalf of Ethiopia, to control the river's discharge. Under this agreement, it

was stated that Italy had no rights to start any irrigation projects that would affect the flow of the river (Nicol, 2003).

Egypt's supremacy under the absolute authority of Britain was once again proven in the 1902 treaty, where the British government and Ethiopia signed another agreement on the Nile waters. Similar to the 1889 treaty, Ethiopia were not allowed to implement any projects in the Nile River. Exceptions were only possible by permission of the government of Anglo-Egyptian Sudan and Great Britain (Nicol, 2003).

The first water sharing agreement came about in 1929 due to Egyptians suspiciousness towards the increased cotton production in Sudan by the British government. This agreement did not survive, mainly because the most important supplier of the Nile river; Ethiopia, refused the acknowledgement of this agreement as the country was not a part of it (Cascão, 2009; Swain, 2011). In 1959, the independent states of Sudan and Egypt replaced the 1929 Agreement by the 1959 Agreement for the full Utilization of the Nile Waters (Cascão, 2009; Swain, 2011). Under this agreement Egypt and Sudan had the right to use of the Nile waters. However, Egypt was the one who could access more utilization of the river than Sudan (Swain, 2011).

This was displeasing news for the upper riparian states of the Nile Basin as the treaty failed to include the upper Nile Basin countries. In fact, the agreement was highly unfair and the upper riparian states protested against their exclusion from the treaty and criticized the convention's bilateral character (Cascão, 2009; Swain, 2011). However, these critiques did not deteriorate the relationship between Egypt and Sudan. On the contrary, during the period that followed after the 1959 Agreement, the relationship between Egypt and Sudan became stronger and more cooperative. The goal of their cooperation was mainly to maintain their domination in the Nile basin and to protect their shares of the river flow (Swain, 2011). On the other hand, the 1959 Agreement caused a lot of tension between Egypt and Sudan and the other Nile riparian states of the basin and some attempts were initiated to establish basin-based cooperative initiatives since the late 1960s (Cascão, 2009; Swain, 2011).

In 1967, in cooperation with the United Nations Development Programme (UNDP) and World Meteorological Organization (WMO) the Nile riparian states of Egypt, Sudan, Kenya, Tanzania and Uganda launched a project referred to as the Hydroment Project. This project aimed at evaluating the water balance of Lake Victoria's catchment in order to ensure control and regulation

of the lake level and the discharge of the Nile River (Schoeters, 2010; Swain, 2002, 2011). Later, the other two riparian states of Rwanda and Burundi joined the alignment of the project. Unfortunately, due to lack of results the UNDP withdrew its support to this project. Thus, the participating countries were left to finance the activities of the project by themselves. After 25 years of existence, the project barely yielded result and failed in developing basin-wide cooperation and was put to rest (Swain, 2002; 2011).

In 1983, the Undugu Initiative was initiated by Egypt through which the country tried to convene other riparian states of the importance of basin-wide cooperation. The initiative involved the participations of the riparian states of Egypt, Sudan, Uganda, the Democratic Republic of Congo and Central African Republic while the states of Kenya, Ethiopia and Tanzania were invited as observers (Schoeters, 2010). The goal of this initiative was to create an informal platform to discuss the economic developments in the White Nile region. Generally, the initiative was of in creating the commencement of cooperation between the riparian states (Schoeters, 2010). In 1992, the Undugu Initiative was later reorganized and renamed as Technical Committee for the Promotion of the Development and Environmental Protection of the Nile Basin (TECCONILE).

TECCONILE initiated a basin-wide action plan called the Nile River Basin Action Plan (NRBAP) which was supported by the Canadian International Development Agency (CIDA) (Nicol, 2003; Schoeters, 2010). Parallel to the NRBAP, a series of conferences, named the Nile 2002 Conferences, were organized. These meetings of technical experts from all basin countries started in 1993 and continued until 2002. The conferences aimed at providing a forum for scientific discussions and informal dialogue, and exchange of views between external organizations and riparian states and among the riparian states mutually (Nicol, 2003; Swain, 2002, 2011). According to Cascão (2009), these cooperative initiatives were limited and failed to succeed mainly due to two reasons. First, they did not include all the Nile Basin countries, and secondly due to their focus on technical issues rather than dealing with legal challenges (Cascão, 2009).

In the late 1990s, the increasing water demands combined with a more variable spatial and temporal distribution of the available water made cooperation and coordination among the Nile riparian states a necessity (Swain, 2011). In 1998, an agreement was reached over the sharing of the Nile waters during a meeting of the Council of Ministers of Water Affairs of the Nile Basin (Swain, 2011). In February 1999, the then eight out of ten Nile riparian countries formulated the

establishment of the Nile Basin Initiative (NBI) replacing the former NRBAP and TECCONILE (Cascão, 2009; Matthews et al., 2012; Schoeters, 2010; Swain, 2002, 2011).

The NBI came to be known as the first cooperation initiative in the Nile basin which included all riparian countries of the Nile Basin namely Burundi, Democratic Republic of Congo, Egypt, Ethiopia, Kenya, Rwanda, Sudan, Tanzania and Uganda, while Eritrea maintains its status as an observer (Cascão, 2009; Swain, 2011). The NBI aimed to achieve sustainable socio-economic development through the equitable utilization of, and benefit from, the common Nile basin water resources (Cascão, 2009; Matthews et al., 2012; Schoeters, 2010; Swain, 2011). To reach its goals, NBI included two types of programs. The first program was the Shared Vision Program (SVP), targeting to build trust and an environment enabling investments of common interest to support the second program. The second program was the Subsidiary Actions Program (SAP), which consists of specific investment programs for the two sub-basins, called the Eastern Nile Subsidiary Actions Program (ENSAP) and the Nile Equatorial Lakes Subsidiary Actions Program (NELSAP) (Cascão, 2009; Federal Democratic Republic of Ethiopia Ministry Of Water Resources, 2002; Swain, 2011). The initiative was financed by contributions paid by the Nile countries themselves, the World Bank, UNDP and CIDA (Jönsson, n.d.; Schoeters, 2010).

In 2007, a new legal and institutional program was established and was named the Cooperative Framework Agreement (CFA). The aim of this program was to deliver a permanent status for the cooperative institution and, therefore, the replacement of the water agreements between Egypt and Sudan (Cascão, 2009; Jönsson, n.d; Matthews et al., 2012; Swain, 2011). Furthermore, the desire of a permanent river basin organization was expressed and the temporal NBI was expected to be replaced by the permanent Nile Basin Commission (NBC) (Cascão, 2009; Matthews et al., 2012; Swain, 2011). Despite the will for cooperation on basin-wide scale, water demands were still rising and the riparian states were still promoting unilateral large scale projects. This led to a breaking point, on which Egypt and Sudan boycotted the signing of the CFA (Jönsson, n.d.; Swain, 2011).

Although CFA was rejected by Egypt and Sudan, in 2010 the seven of the Nile riparian countries namely Ethiopia, Uganda, Tanzania, Rwanda, Kenya, Burundi and the Democratic Republic of Congo decided to proceed with its signing and ratification process (Swain, 2011). The same author indicated that, the increasing insecurity of future water availability caused by climate change, has pushed the Nile riparian states further towards the implementation of their own water development

projects. The acceleration of these unilateral programs was facilitated by the changing geopolitical situation in the basin (creation of an independent South Sudan, Egyptian uprising) and the possibility to raise alternative financial and technical support (Matthews et al., 2012; Swain, 2011). A good example of one of these unilateral projects is becoming of the GERDP on the Blue Nile in 2011 by the Ethiopia government. The next sub-section discusses the GERD as an opportunity of fostering cooperation among the ENB countries namely Egypt, Ethiopia and Sudan.

The GERD: Can it be a Catalyst for Cooperation between Egypt, Ethiopia and Sudan?

Generally, since the GERD was never included in one of the development plans of the NBI, CFA or other bilateral agreements it received a lot of resistance by the countries downstream the project site (Jönsson, n.d.). In 2012, the Nile Tripartite Committee (NTC), an international committee of experts, was established to evaluate the impacts and benefits of the project in Ethiopia and in the countries downstream of the dam site (Bakheit, 2013). The committee was composed of four international experts and two representatives for each of the three countries (Ethiopia, Egypt and Sudan). The results of the panel were presented in May 2013 (Jönsson, n.d.). According Doss (2013) states that the panel's conclusion was released well after construction began, and due to the inconclusive statements, this created more controversy in the media and became the focus of nationalist sentiment and recorded threats from former Egyptian President Morsi and his cabinet (Doss, 2013)

A series of diplomatic talks between Egypt, Ethiopia, and Sudan re-started in 2013 following the panel's results. The talks still continue but recently resulted in all three countries signing the Declaration of Principles (DoP); an official step toward negotiating cooperation about the dam and the Nile's shared water resources (Veilleux, 2015). However, the processes of the negotiations between the three governments have taken place behind closed doors, which left room for speculation. Between 2013 and the signing of the Declaration in 2015, the Nile basin was being labelled as a stage for water war. Nonetheless, no violent conflict across borders has occurred over the GERD to date as the project is said to hold potential benefits for downstream countries. The negotiations represent a change in regional dynamics.

Major media coverage on the GERD has highlighted the potential for conflict, largely ignoring the actual process of negotiation. This negotiation persistently continued through Egyptian political

upheaval and subsequent changes to leadership, regional economic changes, the death of Ethiopia's prime minister in 2012, and Sudan's on-going internal conflict (Veilleux, 2015).

However, according to Veilleux (2015), the governments of downstream countries of Sudan and Egypt have taken the diplomatic hand extended by Ethiopia to work together and cooperate, creating benefits out of the project for the region. Through this diplomatic commitment, the three countries have met regularly to discuss the project since 2013 and emerged with signing of the DoP agreement in 2015. However, this was not a transparent process, and it was not undertaken within a previously designed institutional framework (Veilleux, 2015).

Similarly, the example of how GERD has been handled by regional governments in the Nile basin is one of cooperation over water. This negotiation did not take outside or third parties forcing the conversation. This was not done through an existing institutional framework. This was not done with exhaustive or accurate scientific and engineering research. This instead appears to be an example of mature political diplomacy and official dialogue between neighbouring countries (Veilleux, 2015). The result is a focus on regional benefits and cooperation, shared visions for the future. This example can serve as how a patient and persistent dialogue can succeed in moving negotiations forward about water resources.

However, the resulting decisions come at a cost, not to be ignored, to local subsistence communities as mentioned in the development implications and its hampers. According to Veilleux (2015), for national and international contexts, other trans-boundary river basins facing uncoordinated development challenges can see the GERD dialogues as an example of direct coordination and negotiation over water. The coordination has led to, at least for the moment, encouraged peace and potential economic regional development. Perhaps, current national-level negotiations between the three countries can eventually extend to local communities (Veilleux, 2015)

In relation to this, an informant a water expert informant commented that:

There are two competing camps in the world; those that see water as a source of war, and those like myself, that believe optimistically that water is the catalyst for peace. Water is life and is so critical. Water causes tension and might steer up conflict. On the contrary there is a real hope and real possibilities for cooperation over water shared water resources. From

my personal findings I believe, the Grand Ethiopian Renaissance Dam exemplifies changes in the Nile basin and exemplifies cooperation over water rather than as a cause for conflict among the ENB countries.

When the construction of the dam was announced to the world; Egypt and Sudan voiced their opposition to the project and demanded copies of studies for the project to ascertain its effects (Salman, 2011). However, later on, on 29th April 2011, when the Egyptian delegation arrived in Ethiopia to discuss this issue it was underlined that the building of the dam will not cause problem either to Sudan or Egypt. It was also well noted that the past historical agreements of 1929 and 1959 were not fair and equitable to the riparian states in general (Salman, 2011)

The expectation of politicians in Sudan and government is positive towards the dam in which the realization of dam will provide Sudan not only cheap electric power but also irrigation as well as prevent flooding and siltation that caused much havoc (Salman, 2011).

The Ethiopian government and the public perceive the construction of the dam on the river as a crucial and critically important project. It is perceived by Ethiopians as a purely economic project intended to alleviate the problem of poverty. Thus, it is a national priority issue which will not be compromised with the interest of any local political party and/or any international entity (Muindi, 2013). In addition the construction of GERD is perceived as part of Ethiopian's aspiration to put the long-lasting poverty to sleep. Thus, it is also looked as an aspiration of fighting poverty and sustaining development in the country and that there is no intention of hurting Egypt, Sudan or any other Nile Riparian states in the process of the construction of the GERD.

In sum, the Nile River is complex and poorly understood as a holistic system but has potential to be managed for development at an international scale through official cooperation. The basin has seen little significant water development upstream of Egypt and Sudan, but due to the diversity of the country economies, policies, and governance in its watershed, regional economic development and population increases, and climate change, this is changing. The GERD is one such significant change that has a positive outcome as of 2015. Although this mega project has been implemented outside of any official institutional agreement, communication between the Ethiopian government and its downstream neighbours has remained consistent since potential conflict erupted in 2013 (Veilleux, 2015). Thus, these countries need to put to rest the misperception that has lived with

them throughout centuries and make a change via cooperation and building trust amongst each other. In addition cross-cultural communication is highly essential to sustaining peace and development among Egypt, Ethiopia and Sudan.

3.1.3. The Role of the GERD in Sustaining Peace and Development among Egypt, Ethiopia and Sudan

Having looked at the important literatures and empirical finding to answer the two major research objectives of this study above, it is now essential to respond to the third research question which is to examine the role of the GERD in sustaining cooperation and development for the ENB countries. Hence, under this theme of the analysis, the thesis will look into the general drive of the GERD in bringing a sustainable peace/cooperation and development for the ENB states of Egypt, Ethiopia and Sudan.

According to several scholars and authors, it has long been argued that building dams on the Blue Nile would generate benefits to the river and to Eastern Nile countries. Scholars have demonstrated the role of these dams in regulating the river flow, controlling floods, sedimentation and siltation, producing hydropower that can be traded with other riparian states, and reducing water losses by moving storage in areas with lower evaporation rates upstream (Swain, 2002).

According to the Ethiopian Electric Power Cooperation (EEPCo) (2011), the construction of several hydro dams in Ethiopia can promote relations and cooperation among countries of the region. Ethiopia attempts for the integration of regional states economically and latter politically (EEPCo, 2011). Thus, the hydro dam projects of the country are not aimed at only satisfying the domestic interest of the state, rather it farther aimed at strengthening neighbouring countries economic integration. Healy (2011) demonstrates this argument by stating that the hydro dam projects of the country are not aimed at only satisfying the domestic interest of the state, rather it is farther aimed at strengthening neighbouring countries (Healy, 2011). This fact makes Ethiopia to use its hydro power production as means of cooperation with its neighbouring countries.

Therefore, the hydro dam constructions can play a pivotal role in making harmonious relations and cooperation with its neighbours. As EEPCo's External Communication Officer (2013) stated the hydro dam constructions and production of electricity are not targeted solely to satisfy domestic demands rather they are also planned to make good relations with all the neighbouring countries. This shows that the planning and undertaking of hydro dam projects is by taking into consideration

the interests of other neighbouring countries and the economic cooperation and integration of the region. To this end, it has been projected to export electric power generated from hydro dams to the neighbour countries (Healy, 2011; Minister of Water Resources, 1996; EEPCo, 2011). In addition, Sudan has indicated that it will not be harmed by the implications of building the Grand Ethiopian Renaissance Dam on the Blue Nile. The Sudanese minister of Foreign Affairs, Ibrahim Ghandour said Khartoum is convinced that the country would be safe from any environmental implications of the dam being built in the northeast of Ethiopia (Star Africa, 2016).

Ethiopia and Sudan: GERD as a Kin Booster

The relation of Ethiopia and Sudan was known to be hostile in the past, this however has changed and good relations have been established (Verhoeven, 2011; Healy, 2011; Yacob, 2007). According to Healy (2011), these two countries are now becoming very interdependent economically. Ethiopia is exporting electricity to Sudan since 2010 and Sudan is also supplying petroleum product to Ethiopia and providing port service to export Ethiopia's agricultural product (Healy, 2011). It has also imported significant amount of oil in the recent years from Sudan (Verhoeven, 2011). Several roads have also been constructed that connects Ethiopia with Sudan. This infrastructural development will contribute for the advancement of the two countries economic as well as social and political relations. Thus, it is safe to argue that Ethiopia's GERD will be mutually important for both countries. Furthermore, the production and export of electric power in exchange for Sudan's oil will further promote both countries' mutual interest and diplomacy. From this, one can deduce that the two countries economic relations become a source of cooperation on the area of peace and security and development as well as other spheres of activities.

GERD for Egypt

Egypt highly rely on the waters of the Nile for several purposes such as drinking, washing, agriculture, transportation and energy and it is unthinkable without Nile (Yacob, 2007). Looking at this fact in relation to the construction of the GERD in the Blue Nile, it seems hard and

unthinkable for Egypt as there is a perception amongst Egyptians that the GERDP will disrupt the process of the flow of the Nile waters.

Nevertheless, according to EEPCo (2011), the GERDP will provide Egypt with an opportunity to directly benefit from highly regulated outflows. Besides the function of reducing the over flooding, the dam also helps to trap sediment (EEPCo, 2011). EEPCo's External Communication Officer also stated that the reservoir will not be filled at once, rather it takes time not to deny water supply to downstream countries, and the water will be reserved in the summer season when the water outflows. In addition to this, Yacob (2012) stated that the dam has no significant adverse effect on downstream countries since the project is not for irrigation purpose (Yacob, 2012). The International Panel of Experts IPoE also came up with no significant impact of the GERD on Egypt and Sudan as water flow of the dam will get back to its course after generating electricity.

Therefore, from these explanations we can state that there is no as such significant change in the amount of water flow to downstream countries even it provides additional and regular water during the winter season. Furthermore, Ethiopia intends to export power to Egypt, which would integrate both countries economically and diplomatically. Thus, GERD makes Egypt beneficiary. This is best articulated by EEPCo's External Communication Officer (2013) that, "if it was based on the benefit that would be gained, the dam has to be constructed by all the three countries jointly". Meaning that, they all are beneficiaries. Similarly, Egypt's irrigation minister Hossam Moghazi said to a local Egyptian media that, although Egypt is "worried" about Ethiopia's Grand Renaissance Dam, it does not view it as a "threat" (Ahram Online, 2016).

Generally, on the basis of the above discussion it is possible to boldly say that the full realization of all the dam projects will have significant role for domestic interests of the country, as well as the demands of neighbouring countries thereby promoting economic cooperation and friendship. In the long run, it has the prospect to further strengthen social and political relations among Egypt and Ethiopia. These combined reasons show that there are great possibility of creating cooperation and strong relations with Egypt on the basis of the construction of the GERD.

GERD for Egypt, Ethiopia and Sudan

According to Teshome (2011), from project site when the late Prime Minister laid the corner stone for GERD and said: "*Among other concerns we factored in when we decide to build the Nile dam is not only to avoid any negative environmental and socio-economic can consequence to our*

neighbours, but to positively benefit them from this dam and forge a lasting partnership between all riparian countries” (Teshome, 2011).

As it was cited in the weekly bulletin called *A Weak in the Horn* by Daniel (2012), the Sudanese Ministry of water resources, Professor Seif Eldin Hamad Abdulla, stated: *‘Even if some dam were built in Ethiopia without prior consultation, in the end they all served Sudan’s interest, by reducing the flow of mud that accompanies Nile waters, improving the possibilities for river navigation, and electric production, and helping control of floods’*. He also emphasized that the water storage capacity of the dams in Sudan will benefit from dams in Ethiopia (Endalcachew, 2014)

In consistent to above mentioned fact the dam will greatly reduce the problem of silt and sediment that consistently affect the dams in downstream countries. Along this, the dam also expected to minimize the evaporation loss of dams located in the less favourable downstream countries desert settings. It will reduce about 19BCM of water vapour from Aswan High dam and Aulia dam in Egypt and Sudan, respectively (Temesgen, 2011).

The project also mitigates drought and flood in which communities along the river bank and surrounding area, particularly in Sudan, will be permanently relieved from flooding problem (Belachew, 2013). The other use of the dam for lower riparian states was sediment management in which most of the dams in Sudan are affected by silt which lost about 50% of their normal storage capacity (Temesgen, 2011).

Regarding energy power production, the lower riparian states have the opportunity to obtain increased power supply at competitive prices. It also promotes regional power trading between the three states and expanded integration for trade and cooperation by being as cornerstone for mutual benefits (Endalcachew, 2014). Besides, the GERD also increases the amount of water resources available, by reducing the wastage from evaporation which has been one of the other serious problems of downstream countries. The dam will, in fact, ensure a steady year round flow of Nile, which in turn has a potential to solve the differences which currently exist among riparian states over the issue of equitable utilization of resources of Nile River (Endalcachew, 2014).

Generally, the above raised points would allow us to argue that the full realization of the GERD will satisfy the domestic interests of Ethiopia as well as the demands of the neighbour countries of

Egypt and Sudan. It is the trust of the writer of the thesis that the GERD will lead to strong economic cooperation, understanding, and diplomacy among Egypt, Ethiopia and Sudan.

3.2. Discussion of Findings

The Nile River has provided many African generations life. In recent years, as many people have come to highly depend on the resource, this river has come under pressure and has come about to face several challenges. These challenges mainly emanate from factors like population growth, climate change and deep rooted poverty. These challenges have affected the ENB countries to think of a better coping mechanism by putting in place development projects.

For Ethiopia, the Nile is providing economic development and is held to transform the country into a regional power hub by constructing the GERD. The present research observations reveal that Ethiopia will not be the sole beneficiaries of this project for which the project, since the GERD will also provide electricity generated by the dam for neighbouring countries.

The findings reveal that most of the water challenges faced in this Nile region are due to extreme poverty, rapid population growth, food insecurity and climate change induced disasters such as drought, flooding and desertification. Poor management and lack of a sustainable utilization of the river water is another challenge facing the Eastern Nile Basin countries of Egypt, Ethiopia and Sudan. As such, these challenges have led to tensions and potential conflicts in the region. The study however, implies that there has not been an obvious outburst of conflict over this shared resource.

Another finding in this research is that the past treaties and agreement on the Nile River mainly included the lower riparian states of Egypt and Sudan and excluded the other riparian states of the Nile River. As such, the relationship between the Nile River riparian states have not been positive and with no success during the past centuries. Moreover, tensions have flared between the ENB countries ever since Ethiopia announced the construction of the GERD on the Blue Nile in 2011.

The data presented in this chapter implicates that the construction of the GERD on the Blue Nile Basin is Ethiopia's major step in fulfilling in the development of its water resources. Although under construction, this massive project is believed to be one of the largest hydroelectric plants in the African continent. The data presented has proven that the construction of the GERD will bring

its own developmental benefits. It is expected that ENB countries that are mostly affected by the GERD will benefit from it and their socio-economic integration would be strengthened.

In order to bring a sustainable peace and development, the ENB countries have put their own political and socio-economic interests to side and act as one. As such, the GERD has brought the three countries as one to discuss the potential outcomes of the GERDP and has led to the signing of the DoP among Egypt, Ethiopia and Sudan in earlier 2015.

CHAPTER FOUR

Conclusion and Policy Implications

4.1 Conclusion

One of the major challenges in the Nile Basin is rapid population growth and extreme poverty. These challenges come with their own problems. Population growth has led to an increasing demand for resources among the Nile riparian states. These problems are compounded by natural such as droughts, floods and desertification. Each country in the basin has their own political interests to utilize the river and the lack of institutional structures and mutual agreement/negotiations among these countries has led to the poor utilization and management of the Nile River which adds up to the other challenge that exist in the Nile River basin.

Population growth and the other challenges discussed in the study have been a cause for erupting tensions among the ENB countries; namely Egypt, Ethiopia and Sudan. Most of these tensions have been caused due to conflicting interests of the lower riparian states, particularly Egypt to utilize the Nile River for the country's own benefits and excluding the rest of the riparian states. The study reveals the past treaties between the ENB countries have caused tensions among themselves. For instance the Nile treaties of 1929 and 1959, were biased and favoured the lower riparian states since the agreements were bilateral agreements between Egypt and Sudan whereby it excluded the rest of the riparian states particularly Ethiopia. It is well known that Ethiopia contributes a great deal of river flow to the Nile River through the Blue Nile River. The study also reveals that many writes and trans-boundary water experts have predicted and concluded that

sharing of such watercourses like the Nile River are the cause of conflict. They also state that Nile Basin is a hotspot for violent conflict due to the several reasons that characterize the region. However, there has been no actual conflict between the riparian states of the Nile River are induced by the utilization of the river. In addition, the misperception and mismatch of interests among the countries is also another factor that leads to contention and tension among them.

The Nile Basin countries have several interests to use the river for socio-economic development that will help in poverty reduction. In view of this, the Ethiopian government announced its plan to construct the GERD on the Blue Nile in April, 2011. As the idea of the project was announced rumours flared amongst the world and the lower riparian states of Egypt and Sudan were left with doubts and speculations. The findings of this research indicate that, Ethiopia will be achieving a sustainable development and poverty will be reduced considerably partly contributed by reliable power production towards achieving the GTP goals. Furthermore, it has been assured by the Ethiopian government that the GERD will have multiples developmental gains for not only Ethiopia but also for the whole region. As such, Ethiopia will become a regional power hub and will secure the region with electric power. Likewise, Egypt and Sudan will have economic benefits from hydropower generation by the GERD.

The GERD will also be advantageous for the economies of Egypt and Sudan as it will regulate the flow of the river and control flood, especially for Sudan as the country has been suffering from floods. The other benefit for the three countries is sedimentation management. The GERD upon its completion will decrease the sediments accumulated in the dams of Sudan and Egypt and will reduce costs and create less damage for the dams in these countries. The GERD will also be a means for water conservation, and will decrease the great loss of water of the river through evaporation.

The GERD will also be expected to act as a catalyst for cooperation among the ENB countries. In March, 2015, the three countries have come under one and have signed an agreement on the GERD known as the Declaration of Principles (DoP). This agreement is a step forward to eradicate the tensions and challenges among the countries in the utilization of the Nile River. In addition, the signing of this agreement proves that Egypt, Ethiopia and Sudan have agreed in a diplomatic manner to achieve peace and cooperation to bring a sustainable development in the region.

Furthermore, this is a stepping stone for the achievement of a better utilization and management of the Nile River.

The study also indicated that cooperation over multiples beneficial projects such as the GERD is a necessity to achieve economic growth and sustainable development. As a final conclusion, the study justifies that the full utilization of the GERD will satisfy the domestic interests of Ethiopia as well as the demands of the neighbouring countries of Egypt and Sudan. Moreover, this will lead to strong economic development, cooperation, and better diplomatic relationships. As such, the construction of the GERD plays a significant role in making further harmonious relations and cooperation with its neighbours.

4.2 Policy Implications

As the GERD is a mega-project and for the dam to symbolize and sustain peace, cooperation and development among the ENB countries of Egypt, Ethiopia and Sudan, the research implies the following practical and future research recommendations:

- All three countries should establish a permanent and grounded institution which works in managing of the GERD and aids in implementing open dialogs for the benefits of all three countries. This will also help Egypt, Ethiopia and Sudan on trust-building, cooperation and to sustain development among them. Egypt, Ethiopia and Sudan must discuss the technical issues of the GERDP and how to optimize the on-going construction of the dam for the benefit of the three countries instead of arguing in trivial issues. In addition to this, they need to develop a means which will support the collaboration on agreed principles by the three riparian states. As such the GERD can be a living proof for a sustainable development and cooperation in the Nile Basin region.
- Since the Nile is a big hydrological system; shared among eleven riparian countries; the three countries need to involve other riparian countries to bring in neutral facilitation and augmentation. It is important to keep the other riparian countries in the equation as they can also help in the process and keep the lines of communication.
- Since the GERD is under construction, it will attract a lot of research endeavours with regards to its effects on biophysical environment, socio-economic transformation of the locality, as well as technical issues related to hydroelectric power generation and dynamics of the dam itself.

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Appendix

Questions for Informants

Dear esteemed informants,

My name is Beza Degefa Tolossa and I am a postgraduate student at the Institute for Peace and Security Studies, Addis Ababa University. I am currently doing my MA research entitled ‘The Grand Ethiopian Renaissance Dam (GERD) in Sustaining Peace and Development Between Egypt, Ethiopia and Sudan’. Thus, the main purpose of this study is to examine how the GERD will ensure peace and development for the three signatories of the declaration of political principles of the Eastern Nile Basin, namely Ethiopia, Egypt and Sudan. As such, I am collecting relevant primary data that can aid my study to a better understanding of the issues at hand. So, your genuine expertise and knowledge of the subject is highly appreciated and of valuable for the achievement of the study. In addition, I would like to assure you that confidentiality and anonymity of your comments will be respected as the research is for academic purpose only. I thank you for your willingness, time and cooperation. Thank you!

- What is your reflection on the historical accounts of international relationship between Ethiopia, the Sudan and Egypt when it comes to the utilization of Nile River?
- How much have the three countries benefited from Nile River before launching of the Grand Ethiopian Renaissance Dam (GERD)?
- Do you believe Ethiopia started the construction of the dam at a right time (in terms of facilitation of regional cooperation and other factors)? And why do you think that the global and regional financial institutions were not willing to give loans for the construction of any dam in the Nile basin except for the downstream countries?
- How do you perceive Ethiopia’s capacity to construct and finalize the dam as per schedule set? In terms of finance and how do you assess the progress of the dam construction so far?
- What major economic benefit will Ethiopia gain from the dam? Does this have a multiplier effect for Egypt, Ethiopia and Sudan?
- The agreements reached between the three countries in the past are not showing progress in terms of implementation of the construction as expected. Thus, what do you think are the major bottlenecks?
- Some people doubt that the GERD will not bring about sustainable peace and cooperation between the three riparian countries. They argue it could even be a source of conflict between the countries. What is your reflection on this issue?

- If you disagree, in what ways does the construction of the dam can contribute to sustainable peace and development in the region?
- What should be done to maintain peace and security between the riparian countries in using the Nile water?

Declaration

I, Beza Degefa Tolossa, hereby declare that the work presented in this thesis is original. It has never been presented to any other University or Institution. Where other people's works have been used, references have been provided and in some cases quotations. It is in this regard that I declare this work as originally mine.

Candidate

Name _____

Signature _____

Supervisor

Name _____

Signature _____

Date of Submission _____