

**THE ROLE OF SHARED NATURAL RESOURCES IN PROMOTING
INTERNATIONAL CO-OPERATION; THE CASE OF NILE BASIN**

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DECLARATION

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

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DEDICATION

This study is dedicated to my Father Peter and my Mother Anastasia, my brothers George, Edwin and Linus, my sister Grace and my daughter Danielle.

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First and foremost, I would like to thank God for his blessings.

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ABSTRACT

This study sought to evaluate and determine whether the natural resources at Nile River Basin can be a source of cooperation and debunk the common myth that it is and can only be a cause of conflict. Specifically, there were three objectives sought which were to examine the discourses on shared resources as sources of conflict and cooperation, to interrogate the existing and potential conflict over the Nile River Basin resources and to examine the prospects, opportunities for Nile Resources as a source of international cooperation. The Study used the theory of Liberalism by asserting that democratic states are highly unlikely to go to war with each other, often leading to a higher capacity for co- operation with each other. To achieve these objectives, the study employed a descriptive research design and used questionnaires as the main data collection tool.

Results pointed out that poor distribution of Basin resources resulting to poverty, rapid urbanization which increases the use of Basin resources, season with low rainfall that pile pressure on the Basin resources resource as well as modernization and industrialization which leads to increased need for Basin resources are what bring about conflict or cooperation. Additionally, it was revealed that disputes concerning environmental and resource issues, dams, reservoirs, and other large-scale projects coupled with economic and social instability are other contributors to conflict in the regions with natural resources around the world. An interrogation into the existing and potential conflict over the Nile River Basin resource revealed that conflict is mainly caused by poverty, destruction of the health-supporting infrastructure of society, diversion of human and financial resources as well as forced migration. Finally, the prospects and opportunities that can lead to international prosperity were found to include proactive cooperation among countries or groups within countries is a prospect and opportunity that can be used as a source of international cooperation. Furthermore, promoting nonviolent approaches to resolving conflicts over basin resources should be encouraged.

Based on the conclusion, the study recommended building programs of institutional capacity building, developing treaties that have appropriate criteria for allocation and acknowledging the benefits of cooperative natural resource management.

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LIST OF ACRONYMS

BCM	Billion Cubic Meters
CFA	Cooperative Framework Agreement
DCR	Democratic Republic of Congo
FAO	Food and Agricultural Organization
GERD	Grand Ethiopian Renaissance Dam
MDG	Millennial Development Goals
NBI	Nile Basin Initiative
NBTF	Nile Basin Trust Fund
UN	United Nations
UNDP	United Nations Development Program
WMO	World Meteorological Organization

Chapter One

Introduction to the Study

Background and Introduction to the Study

The different natural resources that exist around the world have played a major role in shaping the society into what it is today. History beckons that it is through these natural resources that man manages to earn a living. However, it is also through the same resources that conflict arises. Being the longest river in the world, the Nile is definitely a key natural resource to man. For a long time, it has been at the center of water debate alternatively shaping the political histories of notably Sudan and Egypt alongside other African countries located along the Nile Basin.¹ The Nile basin transverses the largest number of countries of any basin in Africa making it a shared water resource that offers varying degrees of importance among the riparian territories. In total, the drainage basin of the river covers eleven African Countries which include Egypt, Republican of Sudan, Uganda, Eritrea, Ethiopia, South Sudan, Tanzania, Burundi, Rwanda, Democratic Republic of Congo and Kenya.

Over the years, Egyptian civilizations and Sudanese kingdoms have relied on the Nile resources since ancient times, and nearly all the cultural and historical sites of the Egyptian people are located along the river banks while most of its populations also lie along the northern Section.² Meanwhile, considering the river is a transboundary resource shared by eleven countries it has been a considerable source of conflict between countries with varying interests sourced from the benefits the river provides and constant claims of mismanagement.

¹ Carlson, Andrew. (2013) "Who Owns the Nile? Egypt, Sudan, And Ethiopia's History-Changing Dam." *Origins* 6, No. 6

² Paisley, Richard K., and Taylor W. Henshaw. (2013) "Transboundary Governance of the Nile River Basin: Past, Present and Future." *Environmental Development* 7: 59-71.

In essence, the river has substantially served Nile Basin countries for very long and overly proved beneficial especially in various sectors. The water resource is an indispensable source of water, energy, and food which are all useful in population growth, sustaining livelihoods, reducing poverty and sustainable development among others. The Nile River has been a sustainable source in the hydroelectric and agricultural sectors with large dependence among the countries sharing its basins. Most notably is that the Nile delta has provided a home for millions of people mostly in Egypt especially with the rapid growth in agricultural activities. For over 5000 years, people have been intensively farming on the Nile River Basin giving rise to significant populations and cities and prompting the use of the Nile resources for irrigation, household activities and industrialization. Additionally, the Nile avails the most patent source of power for nations with territories over the watershed which has triggered continued creation of hydroelectric power plants in Africa. An example is the Naluubale Hydroelectric power station formerly known as Owen Falls Dam which is a hydroelectric power station that lies across the White Nile near to the source at Lake Victoria in Uganda. The river serves Uganda for not only its power source but also the other countries along its basin which prove its high efficacy in promoting well-being, industrialization among other direct and indirect benefits.³

The importance of the Nile in the Horn of Africa was also brought to light. Although fresh water may not be the leading cause of conflict especially considering the oil, weapons and the influx of refugees, he believed that it also represents an obstacle in the pursuit of future peace. Therefore, it is evident that Egypt's self-declared right to control other basin states' utilization of the water has internationalized internal wars. Every country has its personal national interests with regard to the Nile and decisions to pursuit national interests in relation to accessing this natural resource

³ Mumma-Martinon, C. A. (2013) "Efforts towards Conflict Prevention in the Eastern African Region: *The Role of Regional Economic Communities and Regional Mechanisms*." Occasional Paper, Series 1.

have caused hard feelings within the region. The constant push and pull between Sudan and Egypt further hinders the implementation of the comprehensive peace agreement.

While interpreting the 1929 Treaty and its Legal Relevance and Implications for the Stability of the Region, Lumumba⁴ asserted that the rising conflict between Egypt and Sudan boiled down to two factors. He believed that due to an approximately 160 million people depending on the river (a population that is expected to double in 25 years), and other challenges such as poverty, recurring droughts and famine, natural disasters, instability in the regions and other environmental factors, the region will continue to face conflict. Egypt and Sudan have been exclusively exploiting the river for their irrigation and hydropower generating activities, therefore, other states demanding a share of the resource has raised concern. The study also refers to that the 1959 agreement between Sudan and the United Arab Republic for the full exploitation of the river as the source of every conflict in the region. Other states such as Kenya, Tanzania, Uganda, Eritrea, Ethiopia and the DR of Congo have realized the potential of the Nile basin resources that remain untapped in their jurisdictions, therefore, the signing of the new treaty has played a huge role in rising tensions between all the involved stakeholders.

Notwithstanding the numerous benefits accrued from the existence of the Nile River, the water source does promote conflicts of interests among states sharing in its territories. Nothing best illustrates the huge role it has played in supporting the growth of countries in the basin as most of them depend heavily on the Nile which explains why each state want a considerable share of the water. Most especially in Egypt and Sudan, people are aware of the vast support the Nile renders

⁴ Lumumba, Patrick Loch Otieno. (2007) "The Interpretation of the 1929 Treaty and its Legal Relevance and Implications for the Stability of the Region." *African Sociological Review/Revue Africaine de Sociologie* 11, no. 1.

to their states as conflicts and controversies transverse along its use and ownership.⁵ In essence, the extended dependence instigated by the rapidly rising growth in population also prompts countries to seek a sustainable source to support livelihoods and the overall economy accrued from such areas as agriculture and industrialization.

1.1 Statement of the Research Problem

Natural resources play a significant role throughout the world. Indeed, resource abundant economies thrive more than those with fewer resources as demand from rapidly growing economies increases and as supplies of non-renewable resources decline and renewable resource harvests approach maximum sustained yield levels.⁶ The Nile River Basin contains a vast amount of resources including water, fish and fertile land for settlement which serves as an important economic factor for the eleven countries that share it. By coming together to manage the shared resources, countries in this region can collaborate and seek corporative solutions rather than war because the fair distribution of Nile River basin resources require shared management and most of all international cooperation. However, issues of conflict still arise over the Nile resources and are of great concern because they raise tension that might potentially spread economic, social and political instability.

Some of these issues emerge over ownership and the fair utilization use of the natural resources with the notion that some nations lack equitable access. For instance, the downstream countries believe that their interest in the shared water is undermined by the activities of the upstream nations with fears that they may construct dams without their consent. In principle, the countries of the Nile basin believe that the all resources, including water should be shared equitably which

⁵ Jafari Shalamzari, Masoud, and Wanchang Zhang. (2018) "Assessing Water Scarcity Using the Water Poverty Index (WPI) in Golestan Province of Iran." *Water* 10.8: 1079.

⁶ Pinilla, Vicente, Marc Badia-Miró, and Henry Willebald. (2015) "Introduction: Natural Resources And Economic Development—What Can We Learn From History?" *Natural Resources and Economic Growth*. Routledge, 1-25.

is one reason why there have been various cooperative agreements in place over the years to facilitate this. Through such agreements, nations come together and seek a legal and acceptable framework for the equitable management of the resources to avoid future conflicts. Indeed, natural resources have been known to be a familiar source of conflict mostly over control and usage and are primarily expected to escalate when in a peripheral region or shared among diverse parties.

Over the years, Nile has been viewed as a lucrative fuel for growth in the Basin countries and alternatively a vital source of conflicts among the nations. On the other hand, considering that it is a shared natural resource this could mean it has instigated cooperation among the Nile Basin territories in efforts to nurture equitable and sustainable use. Therefore, this study sought to evaluate and determine whether the natural resources at Nile River Basin can be a source of cooperation and debunk the common myth that it is and can only be a cause of conflict.

1.2 Study Objectives

1.2.1 To examine the discourses on shared resources as sources of conflict and cooperation

1.2.3 To interrogate the existing and potential conflicts over the Nile River Basin resources.

1.2.3 To examine the Challenges, Prospects and Opportunities for Nile Resources as a source of international cooperation.

1.3 Study Questions

1.3.1 What are the discourses on shared resources as sources of conflict and cooperation around the world?

1.3.2 How can the existing and potential conflict over the Nile River Basin resources be resolved?

1.3.3 How can challenges, prospects and opportunities for Nile Resources be a source of international cooperation?

1.4 Hypothesis

The following will be the main hypothesis for this study;

1.4.1 River Nile can be a significant resource for international cooperation among the riparian states

1.5 Justification and Significance of the Study

A study on the effects of natural resources on internationalizing internal wars is beneficial to a number of stakeholders.

1.5.1 Academic Justification

Research facilitates the discovery of knowledge and makes it possible for further information to be sought. It is very important to point out that knowledge pertains facts based on objective insights which have to be processed by the human brain.⁷ As such, participating in research provides a foundation for knowledge, which can then be acquired by understanding this study. Furthermore, research is also important because of its contribution to knowledge development, practical improvement, and policy information.⁸ This proves to be very crucial to the academic field especially because the quest for knowledge is the basic principle behind research. Therefore, the quality of research work directly translates to the quality of teaching and learning in the classroom, thereby benefiting the students, the society and the country. Additionally, the promotion of research in huge and diverse countries those found in Eastern and Northern Africa

⁷ Carter, Michael. (2016) "Value Arguments in Science Research Articles: Making the Case for the Importance of Research." *Written Communication* 33.3 : 302-327.

⁸ Dincer, Ibrahim. (2017) "Importance of Research, Innovation and Commercialization for Technological Success." *International Journal of Research, Innovation and Commercialization* 1.1: 8-22.

as addressed by this research will help them evolve as a knowledge reservoir in the international arena.

It is well-accepted that academic research has contributed enormously to find solutions to many problems faced by our society and industries. There have been multiple instances throughout the world when industries have turned to academics for finding solutions to vital issues. As such, the need for sharing knowledge between research institutions and industry has become increasingly evident.⁹ Therefore, to the academia, the results obtained from this study can serve to improve on the available literature. It will not only provide a better overview of the topic of study but also relate the latest information available. Other researchers can also use the results as points of references and the areas of further studies suggested at the end of this study will also provide them with an opportunity to expand on what was not covered.

1.5.2 Policy Justification

There are several differing policy goals set by each government throughout the world and the use of research to make decisions about them is vital. This is because research influences policy in several ways. First, evidence-based research is a key pillar in the foundation of public policy. Its impact can be far-reaching and can help inform decisions being made right now.¹⁰ Secondly, improving the public's understanding of the issue is a key challenge for the research community, especially for research on the economics of policy and other issues. This becomes increasingly important because economics affects most aspects of life, yet economic concepts tend to be poorly understood, including at the highest levels in government and industry. Therefore,

⁹ Ghandi, K., et al. (2015) "Engagement: The Importance of Research-Intensive Experiences." *New Ground: Pushing the Boundaries of Studying Informal Learning in Science, Mathematics, and Technology*: 47.

¹⁰ Berry, Frances Stokes, and William D. Berry. (2018) "Innovation and Division Models in Policy Research." *Theories of the policy process*. Routledge, 263-308.

conducting research provides valuable information and makes it possible to help those who need to understand these concepts better.

Secondly, this study will be critical in as far as policy formulation is concerned. Indeed, the Nile has always been viewed as the main source of conflicts among states that share its water resources. These conflicts are often based on key differences about who should use the resources and to what extent. Those living downstream have always complained about the usage of those living upstream. Other countries in the Nile Basin have also been affected one way or another. However, as is the aim of this study, this natural resource can be transformed into a source of international cooperation. All these can only be achieved by setting up better policies which will foster co-operation instead of brewing conflict.

1.6 Limitation of the Study

During the execution of the study, the researcher encountered two limitations. First, most respondents were reluctant to fill in the questionnaires stating that they would be breaching confident information that could implicate their companies. However, the researcher handled this limitation by making it clear to them that this research was mainly for academic purposes, and that the information required to be filled would not compromise them in any way.

Secondly, most of the respondents also had busy working schedules that forced the researcher to increase the amount of time allocated for them to fill in the questionnaires. Indeed, this worked out well in that all the questionnaires were filled dully and submitted for analysis. It should also be noted that the accuracy of the data collected was mainly dependent on what was provided by the respondents. As such, there was need for the respondents to answer the questions honestly and accurately. The researcher therefore handled this limitation by providing guidance in the event that the respondents did not understand the question.

1.7 Research Gap

Based on the literature review conducted above, there is no denying that numerous studies have been done on the River Nile as a natural resource in the region identified. Most studies revealed that the main issues surrounding the resource include ownership and how to distribute the resource equally. While those downstream depend on it economically, those upstream feel that they have a right to use the basin resources. This has often brought about conflict among the communities, more so between in Egypt and Sudan, and now between Egypt and the millennium dam in Ethiopia.

Indeed, it is true that the river is a major source of conflict and the studies have given enough proof backed up with several reasons why. However, it is observed that very few studies have viewed the resource as a source of international cooperation. For a long time, communities have been fighting over who owns the basin resources and to what extent instead of using the resources as a unifying factor. This study therefore intends to explore this gap by finding out the discourses on shared resources as sources of conflict and cooperation, interrogating the existing conflict over the Nile River and finally examining the prospects, opportunities and challenges for these resources and as a source of international co-operation.

1.8 Theoretical Framework

Human beings have for a long time battled with establishing liberal democracy in their undertakings, especially when politics, the rule of law and the protection of civil liberties is concerned. Over the years, this has come to be identified as liberalism. This term is largely identified as a defining feature of modern democracy and has developed into an entity on its own in as far as International relations is concerned. It contains a variety of concepts and arguments about how institutions, behaviors and economic connections contain and mitigate the violent

power of states. In their book titled *Liberalism in international relations*, Doyle and Recchia¹¹ compared it to realism and asserted that it adds more factors into our field of view, especially a consideration of citizens and international organizations. Indeed, liberalism has been the traditional foil of realism in international relations theory primarily because it offers a more optimistic world view.

The theory of liberalism is founded on a simple basis; that ensuring the right of an individual person to life, liberty and property is the highest goal of government.¹² Liberals are of the view that the well-being of an individual is the fundamental building block of a just political system. It follows that a political system that is characterized by certain characteristics of unchecked power, including dictatorship and monarchy will certainly not protect the liberty of its citizens. Therefore, the main concern of liberalism is to construct institutions that protect individual freedom by limiting and checking political power. It should be considered that although these issues may be inherent in the states, activities that a state engages itself in abroad often have an impact on the liberty at home. For instance, militaristic foreign policies lead liberals to be concerned that while war requires states to build up military power, having such power not only means that the state will be able to defend itself, but that it can also be used to oppress its own citizens.¹³ For this reason, political systems rooted in liberalism often limit military power by such means as ensuring civilian control over the military.

¹¹ Doyle, Michael, and Stefano Recchia. (2011) "Liberalism in International Relations."

¹² Jones, Branwen Gruffydd, Ed. (2006) *Decolonizing International Relations*. Rowman & Littlefield.

¹³ Burley, Anne-Marie Slaughter. (2017) "International Law and International Relations Theory: A Dual Agenda." *The Nature of International Law*. Routledge, 11-46.

Another concern that liberals often raise is wars of territorial expansion, which has been a major source of international conflicts around the world.¹⁴ When states seek to build empires by taking territory overseas or seek a natural resource, say water, several factors often come into play. For instance, expansionist wars strengthen the state at the expense of the people and also require long-term commitments to the military occupation and political control of foreign territory and peoples. This often disrupts the international relations that people hold.

However, strong contributions to liberalism in the form of the democratic peace theory provide a solution to such issues. The theory asserts that democratic states are highly unlikely to go to war with one another. This is because democratic states are characterized by internal restraints on power and tend to see each other as legitimate and unthreatening, thereby reducing the chances of conflict. This instead means that they have a higher capacity for cooperation with each other than they do with non-democracies. Indeed, after World War II (1939-1945), the world took a liberal path whose international structure fosters democratic association with each other. While this has been put to test from time to time, its effectiveness still prevails.

1.9 Research Methodology and Design

The research design that was adopted by this study was descriptive in nature. Lewis¹⁵ defined a research design as the overall strategy that is chosen by a researcher to integrate the different components of the study in a coherent and logical way, thereby, ensuring that the research problem is addressed effectively. It is what constitutes the blueprint for the collection, measurement and analysis of the data collected to answer the research questions or address the objectives. This study intends to adopt a descriptive research design. As indicated by Creswell

¹⁴ Baylis, John, Steve Smith, and Patricia Owens, Eds. (2017). *The Globalization of World Politics: An Introduction to International Relations*. Oxford University Press.

¹⁵ Lewis, Sarah. (2015) "Qualitative Inquiry and Research Design: Choosing Among Five Approaches." *Health Promotion Practice* 16, No. 4: 473-475.

and Creswell¹⁶ a descriptive research makes it possible for subjects to be observed in a natural and unchanged environment. It also allows for gathering in-depth information that may be either quantitative in nature as in surveys or qualitative in nature as in observations or case studies. This allows for a multifaceted approach to data collection and analysis.

For purposes of data collection, the study used both secondary and primary data questionnaires. Secondary data was obtained from secondary sources which mainly includes the internet. Specifically, the World Development Indicators Website was used to obtain secondary data on various natural resources in the Nile resources basin.

Primary data on the other hand was obtained using a questionnaire. It comprised of closed questions which were used to gather the responses of the respondents regarding the role of shared resources in promoting international co-operation in the Nile basin. Various statements on how the resources can be a source of co-operation was devised for respondents to indicate how they relate to them based on a five point Likert scale in two of the three sections. Section A was used to collect demographic information about the individuals while section B will be used to collect information about conflict, its impact and how it can be used as a source of corporation (the independent variables) while section C comprised of questions regarding the international cooperation (independent variable). The researcher targeted professionals in leadership positions in various government and non-governmental organization from countries in the Nile Basin. This is because these are the people in the best position to answer the questions that will be presented to them in the questionnaire. Once all the questionnaires have been submitted, they were analysed using Statistical Packages for Social Sciences (SPSS, version 22) using both descriptive statistics and regression analysis. Results were presented using graphs.

¹⁶ Creswell, John W., and J. David Creswell. (2017) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage Publications.

Chapter Two

Discourses on Shared Resources of Conflict and International Cooperation

Introduction

In an effort geared towards understanding the importance of natural resources in the modern world, it should be considered that the world's population currently stands at 7.2 billion and will double in ten years' time according to statistical reports.¹⁷ Consequently, the pressure on the available resources will double. Many nations are therefore trying to put in place all the measures to protect their countries from the crisis that might arise as a result of the depletion of the available natural resources. The most shared resources by countries globally include water, air, oil, natural gas, minerals, wildlife, land and forests. Most of these resources are so important in sustaining human life that there will be no survival without them. For instance, air is fundamental for the survival of all living things and so is water.

Furthermore, the degradation of natural resources and climate change are putting everyone around the world at risk of depleting some of these important natural resources. This increased demand and scarce availability could potentially result in two scenarios; conflict or peace through co-operation. Choosing co-operation means that countries involved form agreements depending on many other factors ranging from political, economic, historical, and cultural practices.¹⁸ For example, the conflicts resulting from the sharing of the basin resources of river Nile are largely defined in history whereby, the most share of the water was given to Egypt by

¹⁷ World Bank Group. (2014) *World Development Indicators 2014*. World Bank Publications.

¹⁸ Tietenberg, Thomas H., and Lynne Lewis. (2016) *Environmental and Natural Resource Economics*. Routledge.

the colonial governments during the pre-colonial periods. However, many riparian countries of the Nile have rejected the earlier agreement.¹⁹

There are other resources however that have made it difficult for the countries to share. As a result, countries involved have been involved in conflicts and wars. For instance, oil has resulted in wars in many countries, especially in Africa and the Middle East.²⁰ Many other natural resources have also resulted in conflicts between countries. For instance, fights for fishing rights and those against environmental pollution and the need to control and contain climate change have rocked China.²¹ These cases have resulted in many conflicts, most of which have ended up as valuable collaborations and co-operations. In such instances, countries form co-operations that allow for significantly equitable sharing of the resources for their mutual benefits. As a result, they form both governmental and non-governmental agencies that are be used to put in place measures that ensure an equitable sharing of the natural resources without affecting others. Furthermore, scientist and researchers have collaborated with nations around the world regarding the sharing of the resources for the benefits of all the humanity.²² As a result, they have put in place measures to be followed by every nation of the world in using of the resources in a manner that it will protect the environment and prevent depletion.

2.1 Shared Resources as a Source of International Cooperation.

There are several natural resources shared by countries around the world. Sharing these natural resources is more of a necessity because they are categorized as resources that are provided for

¹⁹ Young, Oran R. (1989) International cooperation: *Building Regimes for Natural Resources and the Environment*. Cornell University Press.

²⁰ Asal, Victor, Et Al. (2016) "Political Exclusion, Oil, and Ethnic Armed Conflict." *Journal of Conflict Resolution* 60.8: 1343-1367.

²¹ North, Ryan. (2017) "Traditional Fishing Rights in International Law: The South China Sea Arbitration." *U. Tas. L. Rev.* 36: 101.

²² Venables, Anthony J. (2016) "Using Natural Resources for Development: Why Has It Proven So Difficult?" *Journal of Economic Perspectives* 30.1: 161-84.

accordance with nature or relating to or concerning nature, meaning that some of them do not run out.²³ These include water, air, oil, natural gas, minerals, wildlife, land and forest. The fact that some of these resources occur naturally in different parts of the world yet have to be shared by all brings about conflict.²⁴ For instance, many countries have come into agreement on the need to cooperate in matters of oil. They have attempted to separate energy issues from political issues with the aim of achieving peace and sustainability in the regions. Specifically, Middle East countries have created neutral programs and business forums that have allowed them to achieve equality in the oil markets. They have also been able to establish long-lasting peace and dependability in the regions.²⁵ Experts have considered the impact of the unconventional oil and gas sector on geopolitics and energy markets. They found out that a good agreement and cooperation between nations would help offset the oil burdens of the said countries. As an example, they noted that the demands from Asia would offset the oils from the United States. In addition to these, the Middle East countries would remain the major suppliers of oil at low costs to the whole world.²⁶

Water is also another natural resource that is shared by many countries. This is by far the largest resource available to man given the number of water bodies around the world. As such, there is a great need for countries to cooperate in international basin resources. The United Nations water convention of 1997 indicated that most countries agree on the need for international cooperation. The said convention has called for equitable and reasonable uses of shared water, peace between countries, environmental protection standards, sharing of information related to water and the

²³ Rees, Judith. (2017) *Natural Resources: Allocation, Economics and Policy*. Routledge.

²⁴ Carley, Michael, And Phillipe Spapens. (2017) *Sharing the World: Sustainable Living and Global Equity in the 21st Century*. Routledge.

²⁵ El Mallakh, Ragaiei. (2015) *Qatar (RLE Economy of Middle East): Development of an Oil Economy*. Routledge.

²⁶ Ross, Michael L., and Erik Voeten. (2015) "Oil and International Cooperation." *International Studies Quarterly* 60.1 (2015): 85-97.

establishment of the connections between underground and surface water.²⁷ This convention further established a reasonable platform to solve the problem of sharing international water for many years. The consequence of these has been long-lasting peace and harmony in the riparian nations. Nations have formed treaties to effect long-term cooperation in the international watercourse.²⁸ Additionally, the countries involved have signed agreements which outline the proper ways of sharing the water and clear measure to solve conflicts should they occur. The said treaties have also been used in developed countries including the United States and Canada for many decades. Furthermore, countries have come to use international agreements in the use of water. Many nations have been able to achieve peace from their shared basin resources. They have been in a position to provide their populations with food, clean water, and enough water for their industries. This has stabilized the economy of the whole region. It has also improved the standards of living for the people while at the same time providing good relationships for trade and cooperation in other sectors of the economy.²⁹

Air is also another natural resource that is required by every living organism for survival. Its pollution results in devastating consequences that could potentially kill living organisms. Furthermore, air pollution knows no boundaries. It has forced many nations to come together for its conservation, an effort that has resulted to so many treaties and agreements. They have also

²⁷ United Nations. *Agenda 21: (1997) Programme of Action for Sustainable Development; Rio Declaration On Environment and Development; Statements of Forest Principles; The Final Text of Agreements Negotiated by Governments at The United Nations Conference On Environment and Development (UNCED), 3-14 June 1992, Rio De Janeiro, Brazil*. United Nations Department of Public Information.

²⁸ McCracken, Melissa, Laura ER Peters, and Aaron T. Wolf. (2018) "Megatrends in Shared Waters in 2030 and Beyond." *Assessing Global Water Megatrends*. Springer, Singapore, 105-123.

²⁹ Tietenberg, Thomas H., and Lynne Lewis. (2016) *Environmental and Natural Resource Economics*. Routledge.

formulated laws and regulations that govern many industrial activities in order to minimize harmful emissions that pollute air.³⁰

Another natural resource sought after by human beings are natural minerals. These include valuable rocks such as marble, diamond, gold etc. A good example of how these have brought about co-operation can be found in Africa, where many mining companies have established peace in many parts, from roads constructed in the region to the sharing of the profits obtained from the minerals which has resulted to peace, and harmony have been established. Furthermore, they have been able to connect the countries for better trade and connections. The said countries have tried to keep on cooperating for the more benefits they obtain from the same.³¹

2.2 Shared Resources as Sources of Conflicts

Shared natural resources have also brought about many conflicts. Some of them have led to wars and further destruction of the remaining ones. These resources may include water, air, oil, minerals, natural gas, fishing grounds, and general environment. River basins cover more than 45% of the land surface of the entire earth. Consequently, many countries share particular river basins. These basin resources provide the riparian land with electricity, food from irrigation and fishing, water for their industries and domestic use and a means of transport. However, there are no rules to be followed for sharing these basin resources and instead, many countries choose to protect their national territorial sovereignty. In so doing, they claim all the rights over, use and control of the natural resources located within their boundaries (Harmon Doctrine). The countries end up allowing less water to pass for countries downstream hence an automatic conflict. The increasing world population has resulted in a corresponding demand for more

³⁰ Schnelle Jr, Karl B., Russell F. Dunn, and Mary Ellen Ternes. (2015) *Air Pollution Control Technology Handbook*. CRC Press.

³¹ Addison, Tony, Amadou Boly, and Anthony Mveyange. (2016) Mining and Economic Development: *Did China's WTO Accession Affect African Local Economic Development?* The World Bank.

water. As a consequence, there is a need for more food, more agricultural products and more water for domestic and industrial use. As a result, water sharing has become a big problem as the available amount is not enough to sustain everyone satisfactorily. Additionally, little rainfall has complicated the situation making many people to over-depend on the existing rivers.³²

A study on the efforts towards conflict prevention in the East African Region³³ believed that water, fish and settlement land is integral in overall regional development. As a conflict expert herself, she went on to state that the issue of conflict in international shared resources is highly political in nature and should be accorded the international attention it deserves. In regard to the case on the Nile conflict, she believes that the signing of the New Nile Treaty which was protested by both Egypt and Sudan will lead to serious peace and security implications in the region. She also believes this move to sign a new treaty could bring cooperation in the region and lead to reduced conflict as the parties in this resource-scarce region unite to manage the shared water resource.

Another study³⁴ focused on the impact natural resources have on the East African community. The researcher focused on Lake Victoria and since it is the source of the River Nile, it has direct impact on R. Nile's situation between Egypt and Sudan. He established that most conflicts in Africa are due to the diversity and complexity of the land. These conflicts range from internal, some reflect the dynamics of certain sub-regions while others represent a wider international dimension. Since these natural resources are shared among two or more countries, they therefore have significant roles to play in the economies of these countries. The Nile is important to both

³² Jafari Shalamzari, Masoud, and Wanchang Zhang. (2018) "Assessing Water Scarcity Using the Water Poverty Index (WPI) In Golestan Province of Iran." *Water* 10.8: 1079.

³³ Mumma-Martinon, C. A. (2013) "Efforts towards Conflict Prevention in the Eastern African Region: *The Role of Regional Economic Communities and Regional Mechanisms*." Occasional paper, series 1.

³⁴ Labu, Peter Kamalingin Bhatia. (2012) "The Impact of Shared Natural Resources on East Africa Community: A Case of Lake Victoria." Phd Diss., University Of Nairobi, Kenya.

Egypt and Sudan in maintaining food and livelihood security, hence continued struggle over the control of the river basin.

While air is a very critical resource for all living things, its pollution will put many lives in danger and eventually extinction. Many human activities have resulted in the development of air quality disaster. As a result, many nations are vigilant on all the factors that contribute to air pollution. They, therefore, put on the restrictive measure to prevent other countries from carrying out activities that might pollute the air. However, some of the restricted activities are important to the economies of some countries. These countries ignore the restrictions to go on with their industrial operations and hence keep on conflicting.

Minerals are also a source of conflict as witnessed by the existence of many ongoing conflicts in various parts of the world. Taking, for instance, the eastern parts of the Democratic Republic of Congo, it is evident that many people, both local and non-locals have benefitted a lot from mining as they continue to contribute to the violence and the war in the region. In addition to these, minerals found in boundaries have caused wars and conflicts in the said regions. As a result, many border disputes have emerged in the countries of Africa.

Another resource that has caused significant conflict around the world is oil. Indeed, it is the leading cause of war between states and nations that mine the valuable resource. Many conflicts resulting from oil grounds, oil markets, and boundaries have resulted in many disputes and wars. Oil is a non-renewable source of energy. As a result, many nations are fighting over them so that they may have the upper hand in conserving them for their future as well as supporting their already large and growing populations.³⁵ Additionally, the political climate has made it

³⁵ Falola, Toyin, And Emmanuel Mbah. (2016) "Oiling The Guns and Gunning for Oil: The Youth and Niger Delta Oil Conflicts in Nigeria Christian C. Madubuko." *Dissent, Protest and Dispute in Africa*. Routledge, 272-301.

difficult for countries in East Africa to collaborate on sharing the oils found in the borders of Kenya, and Uganda. The global energy crisis is also rising thus increasing the demand for oil more. As a result, many countries are fighting to obtain the best position in the oil market to sustain their economies.³⁶

In an analysis on the Nile River and Egyptian foreign policy,³⁷ it was discovered that even if the River Nile is deeply engraved in Egyptian mythology, its natural resources are also an important resource to several other countries, especially Sudan. Therefore, it is crucial that strategies are implemented that will manage them in a manner that fosters cooperation and general sustainable development in all the states involved. Professor Hassan hence suggested a stand against the rhetoric call for conflict over the Nile and advices rising above all the traditional hate in order to give chance to values of tolerance and dialogue that will ultimately promote and foster the common interests and benefits of all the states of the Nile Basin. Additionally, Ice Case Studies attribute the conflict surrounding the River Nile to the Irrigated agriculture particularly in Egypt and the Sudan. High population growth rates in all riparian countries and increased development-related water needs in Ethiopia are also other factors contributing to the conflict. The British High Commission in Cairo and the Egyptian government of the time had an agreement that highly favored Egypt by allocating it a whole 48 Billion Cubic Meters per year, 4 Billion Cubic Meters for the Sudan, while 32 Billion Cubic Meters per year was unallocated.³⁸

³⁶ Ross, Michael L., And Erik Voeten. "Oil and International Cooperation. (2015) "*International Studies Quarterly* 60.1: 85-97.

³⁷ Hassan, Hamdy A., and A. A. Rasheedy. (2011) "The Nile River and Egyptian Foreign Policy Interest." Cooperative Diplomacy, Regional Stability and National Interest: *The Nile River and Riparian States*: 131-152.

³⁸ Lonergan, Steve C. (2018) "Water and conflict: Rhetoric and reality." *In Environmental conflict*, pp. 109-124. Routledge.

2.3 Data Analysis and Results

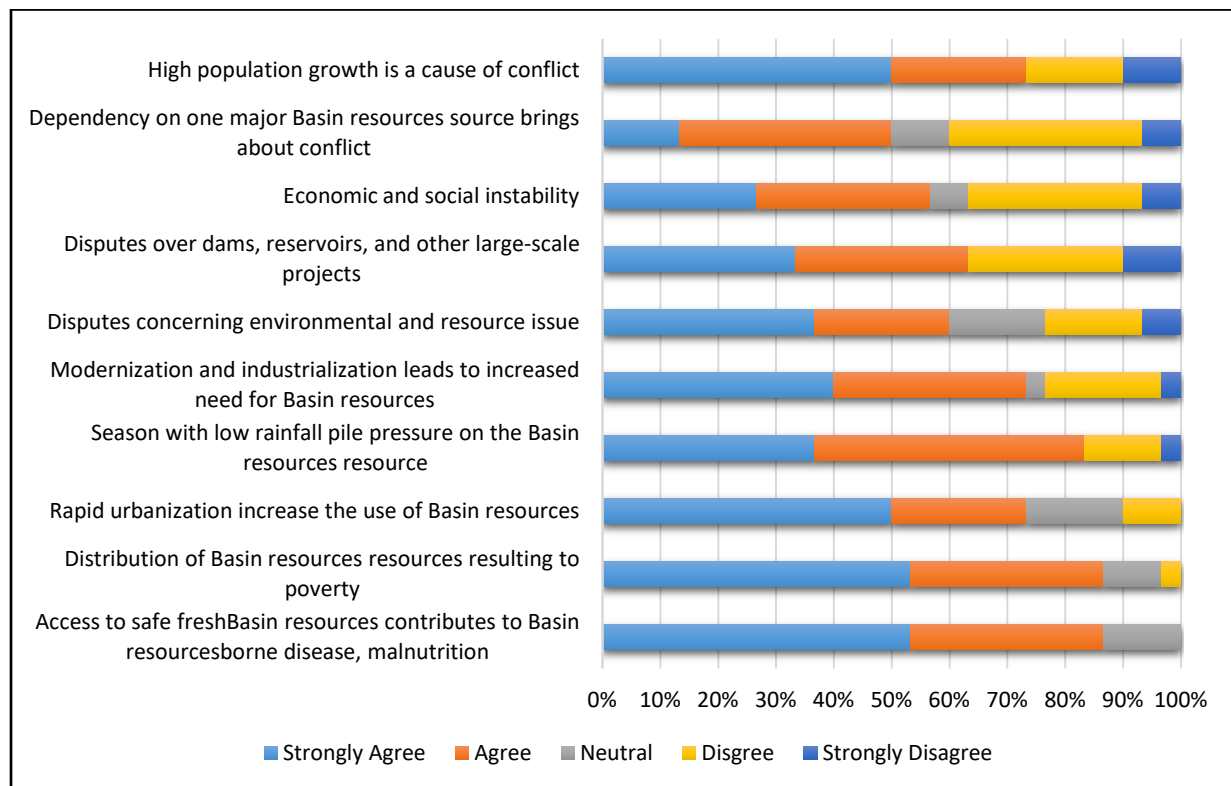
This section provided the result for the discourse on shared resources as sources of conflict and cooperation based on the answers that were given by the respondents as per the primary data that was collected. The respondents were asked to indicate the extent to which they agreed with various statements included in the questionnaire. Their responses were analyzed and results presented in figure 2.1.

From the result, majority of the respondents agreed that shared resources were a source of conflict and cooperation as well. According to the mean scores, the respondents agreed that access to safe freshwater contributes to waterborne disease, malnutrition etc., that poor distribution of natural resources results to poverty, and that rapid urbanization increase the use of natural resources. They also agreed that season with low rainfall pile pressure on the Basin resources resource, that modernization and industrialization leads to increased need for Basin resources and that disputes concerning environmental and resource issue They however were neutral on whether disputes over dams, reservoirs, and other large-scale projects can lead to cooperation, whether economic and social instability causes cooperation , whether dependency on one major Basin resources source brings about conflict and finally on whether high population growth is a cause of conflict

2.4 Conclusion

There is no doubt that natural resources are essential for the survival of living things. As a result, they can be sources of international conflicts when people fail to agree on how to share them but are potential spices for peace and co-operation. They vary from region to region while others are the same everywhere on the globe.

Figure 2.1 Discourses on Shared Resources



Source: Research Data, 2018.

With the population of the world increasing fast, the need to not only find ways to effectively share natural resources but also conserve it and refrain from misusing them is paramount. This increase will most certainly result in a corresponding increase in the pressure on the available shared natural resources. Therefore, nations have been forced to come to agreements on proper ways to share them. Furthermore, the countries need to establish peace for the good of their economies and their people. Hence, they will tend to cooperate.

Additionally, global warming and environmental pollution have also brought nations together to form alliances and co-operations for the good of their future generations. To achieve this cooperation and a clean environment, they have put in place measures, laws, and conventions to be followed by every nation for the benefit of all. However, there are challenges involved

including Non-compliance, political ideologies, and selfish interests. These have to be ironed out if peace and prosperity is to prevail. Furthermore, measures to control and manage natural resources should be put in place. These measures, however, should be universally accepted and similar to avoid any conflicts. They should outline laws, and rules that will govern pollution, pollution control and the sharing of all the international natural resources properly and equitably for the benefit of humanity. Properly guided use of natural resources will enable us to avoid the risk of extinction as we properly manage our air, water, minerals, and all the other shared resources. Furthermore, humanity will be able to avoid conflict and the possibility of a world war

III.

Chapter Three

Existing and Potential Conflicts over Sharing Nile River Basin Resources

Introduction

This chapter presents the existing and potential conflicts over sharing the Nile river basin resources. Through this objective, the study sought to determine some of the potential conflicts caused by sharing of River Nile River basin resources. The Nile river resources have been a source of conflict for most of the 20th century.³⁹ Political tensions as well as low-intensity conflicts have been witnessed among the three major riparian countries; Ethiopia, Sudan and Egypt. Despite efforts in the late 1990's to help the situation, challenges are still prominent, with most of them proving to be potential sources of conflict themselves.⁴⁰ This has further been fueled by an ever increasing demand for water resources even though the supply is decreasing. Additionally, other factors, both natural and man-made, have only served to worsen the current situation. For instance, global climate change has threatened to complicate the situation further and this is anticipated to result in long-term changes in the volume and pattern of runoff in the Nile River system. On the other hand, China's political influence in the basin has also facilitated a number of unilateral initiatives for large-scale water development projects. This chapter aims at focusing on these potential conflicts by providing the facts and figures as to why the researcher believes them to be potential conflicts.

³⁹ Swain, Ashok. (2011) "Challenges For Water Sharing In The Nile Basin: Changing Geo-Politics And Changing Climate." *Hydrological Sciences Journal* 56.4: 687-702.

⁴⁰ Berndtsson, Ronny, Et Al. (2017) "The Grand Ethiopian Renaissance Dam: Conflict and Water Diplomacy in the Nile Basin." *Water Diplomacy in Action: Contingent Approaches to Managing Complex Water Problems*. Anthem Press, Boston: 253-263.

3.1 The Nile Basin Facts and Figures

The Nile River is not only the longest river in Africa but also the most important source of water to the upstream Egypt and some parts of Ethiopia and Sudan. The water system covers around 6650 km from the headwaters to the Mediterranean Sea.⁴¹ The drainage area of the water system covers about 10% of the whole continent as the river runs through 11 countries. However, the surface water of the river is more unevenly distributed compared to other rivers like the Volta and even Zaire.

In as much as Egypt is at the furthest upstream end of the river, it obtains almost 97% of its water for daily uses from the river. The country has constructed a system of canals that it uses to irrigate farmlands and even reclaim other farms from the desert. This reliance on the river has seen Egypt sign a number of agreements since the colonial era to secure an exclusive right to the waters of the Nile. In 1929, Egypt entered a deal with Britain, which was the then colonial power in the greater East African region that granted Egypt an exclusive right to approximately 80% of the total cubic meters of the river's waters.⁴² However, as the wave of independence swept through the African continent, the Arab Republic had to update the agreements in order for the daily usage in the country to not be interrupted. In 1959, Egypt signed a deal with Sudan that allowed it to utilize about 55.5 km³ of the 84 km³ annual flow that was freshly computed.⁴³ On the other side, Sudan was to use the remaining 18.5 km³ after a further 10 km³ had been subtracted to cover the mean annual evaporation.

⁴¹ Negm, Abdelazim, Mohamed Elsayhaby, and Kamal Ali. (2017) "A Satellite Remote Sensing Approach To Estimate The Lifetime Span Of Aswan High Dam Reservoir." *The Nile River*. Springer, Cham, 57-77.

⁴² Salman, Salman MA. (2017) "Agreement on Declaration of Principles on the GERD: Leveling the Nile Basin Playing Field." *The Grand Ethiopian Renaissance Dam and the Nile Basin*. Routledge. 41-60.

⁴³ Kimenyi, Mwangi, and John Mbaku. (2015) *Governing the Nile River Basin: The Search for a New Legal Regime*. Brookings Institution Press.

The Egypt-Sudan agreement of 1959 allowed the Egyptian government to embark on an ambitious project that culminated into the Aswan High Dam. The dam has an installed hydropower of 2825 megawatts against a potential output of about 3,210 megawatts. However, as more riparian countries around the Nile ecosystem gained independence, there arose fresh issues around the usage of the basin resources. Some countries wanted to build dams for irrigation and power generation that would spur their economic growth. To avert imminent conflict, the 11 countries signed the Entebbe Agreement that allowed all the riparian countries to construct dams whenever they deemed necessary.⁴⁴ With the exception of Eritrea which has negligent hydropower potential, all the other riparian countries have an installed hydropower capacity that is way below the potential megawatts that the renewable resource holds. Recently, Ethiopia embarked on a dam project that promises to build one among the 8 largest dams in the world.⁴⁵ Although the Grand Ethiopian Renaissance Dam (GERD) seems very controversial, the process is in advanced stages.

Table 3.1 Potential Hydropower Capacity

Country	Hydropower potential (MW)	Hydropower installed (MW)
Burundi	1, 366	36
D. R. Congo	530,000	2829
Egypt	3,210	2825
Eritrea	N/A	N/A
Ethiopia	162, 000	378
Kenya	30, 000	611
Rwanda	3, 000	59
Sudan	1, 900	225
Tanzania	20, 000	339
Uganda	10, 200	155

Source: World Energy Resources Hydropower, 2016.

⁴⁴ Sowers, Jeannie. (2016) "Governing the Nile River Basin: The Search for a New Legal Regime by Mwangi S. Kimenyi and John Mukum Bmakuwashington, DC: The Brookings Institution, 2015. Pp. 131. \$32 (Pbk)." *The Journal of Modern African Studies* 54.1: 180-181.

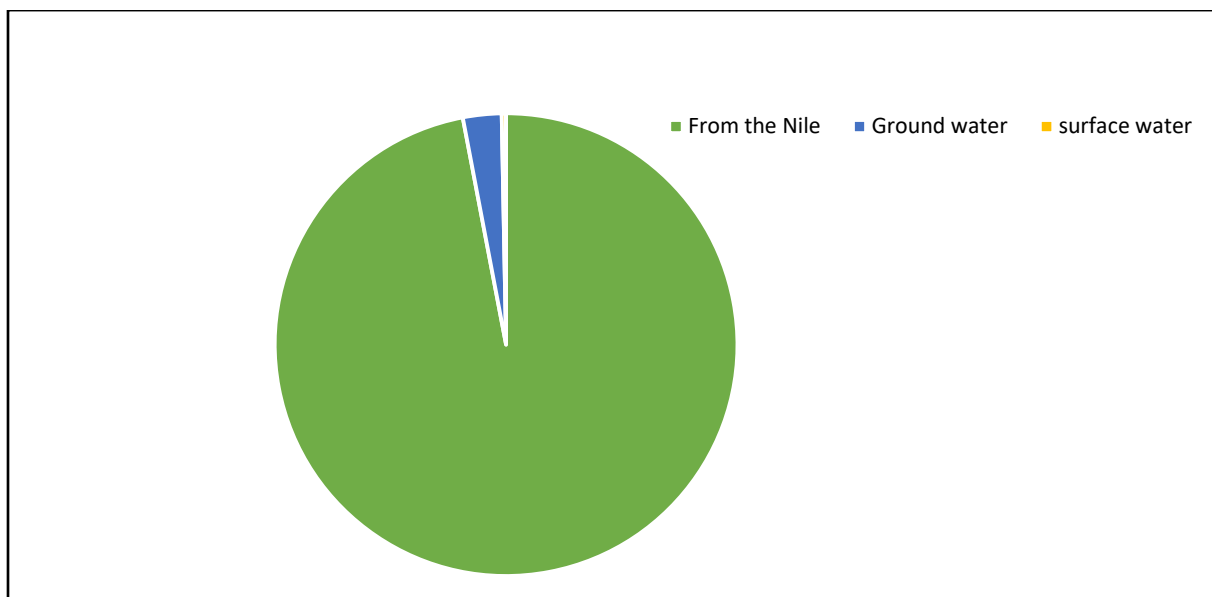
⁴⁵ Salman, Salman MA. (2017) "Agreement on Declaration of Principles on the GERD: Levelling the Nile Basin Playing Field." *The Grand Ethiopian Renaissance Dam and the Nile Basin*. Routledge, 41-60.

Table 3.1 illustrates the potential hydropower capacity in the various riparian countries against the installed capacity.

3.2 Water Demands in the Basin

As earlier noted, Egypt relies on the Nile for more than 96% of its water supply. Ground water is in very small quantities while the surface water is almost of negligible amounts.

Figure 3. 1 Water Sources in Egypt



Source: Research Data, 2018.

Figure 3.1 illustrates the share of the water resources in Egypt.

A 2011 report by the Food and Agriculture Organization (FAO) of the United Nations indicates that more than 86% of the water goes to agricultural uses. There are approximately 31,000 km of public canal systems that drain agricultural farmlands across the country. The canals are drained by 560 pumping stations that rely on electric power drained from the Aswan High Dam.

There has been a marked increase in the water demands in the country probably due to an increasing population that requires more food. Although Egypt is currently the world's largest

importer of grain, it has improved its production from the levels of the previous years. Analysts agree that the 70% efficiency level of the utilization of the water resources is worrying and that a lot of water is being lost. Since the year 2000, over 1,189,000 ha of land has been reclaimed from the desert with a further 4,434,000 ha planned for reclamation in the coming years.⁴⁶ This will bring the total managed area that is under irrigation to around 12 million ha in the years ahead. This implies a higher need for water in the country that will put more pressure on the already over-utilized Nile basin.

Further, the water demand in and around the basin is expected to climb higher considering the burgeoning demographic numbers in the region. This coupled with the number of hydroelectric power projects that are coming up along the course of the Nile will push up the usage of the water. Ethiopia is the second largest user of the Nile basin resources. The GERD project is massive and takes up a large amount of the Blue Nile's water.⁴⁷ National statistics indicate that Ethiopia's population is expanding at a rate higher than that of Egypt. Obviously, the aftermath is a higher need for water for domestic use and an increased rate of food production to feed the new mouths. With the increased agricultural production, the quality of water is deteriorating. A 2009 United Nations-FAO reports points to a depreciating quality of water occasioned by the number and magnitude of dam projects that are going up in the basin. The salinity of the water has shot up to unprecedented levels which have negatively impacted the agricultural production of the soils in the basin.

Another major concern that is expected to adversely impact the water in the basin is climate change. As the water usage rises, increasing global temperature threatens higher rates of

⁴⁶ Kimenyi, Mwangi, And John Mbaku. (2015) *Governing the Nile River Basin: The Search for a New Legal Regime*. Brookings Institution Press.

⁴⁷ Attalla, Rania A. (2015) *Grand Ethiopian Renaissance Dam (Gerd)*. Diss. Worcester Polytechnic Institute.

evaporations that will see the net amount of available water fall. However, there is another narrative by other reports that point towards natural disasters in the basin that might come about in the aftermath of climate change. The reports claim that the increased temperature leads to higher rates of melting of polar icebergs that increase the amount of moisture in the atmosphere. As a result, heavier than normal rains may be experienced with the obvious effect of floods and destruction of the irrigation equipment and systems in place in the basin.

3.3 Existing Conflicts

Egypt had a fairly peaceful time back in the colonial days where it struck deals with the British government. The Britons needed their ships to pass through the Suez Canal while the Pharaoh Nation wanted to use as much water as possible from the Nile. The deals were not complicated because the Brits did not really rely on the water from the Nile, and the Egyptians did not have much use of the Suez Canal.⁴⁸ The 1929 deal was favorable to both of them. However, with the up and coming newly independent nations of the Nile basin, the Nile started being a hotbed that nearly ended in chaos on more than one occasion. Before other countries begun being much of a problem, Sudan was mostly opposed to the water sharing arrangement that existed between the British government and Egypt. This changed after the coming onto power by the military junta in 1958 that was enabled by Egypt. The new deal with the new leadership in Sudan gave even more volume of the Nile resources to the Egyptians. The 1959 deal is one of the major enabling factors that brought about the Aswan High Dam. On the other hand, Sudan was able to embark on its own projects on the Blue Nile that included the building of the Roseires Dam.

⁴⁸ Salman, Salman MA. (2017) "Agreement on Declaration of Principles on the GERD: Levelling the Nile Basin Playing Field." *The Grand Ethiopian Renaissance Dam and the Nile Basin*. Routledge, 41-60.

At the same time, the deteriorating relations between Egypt and the West brought in a new player into the power play of the Nile basin.⁴⁹ The United States, through the Bureau of Reclamation assisted Ethiopia to lay down the foundation of several hydroelectric power projects as well as irrigation projects. Despite the not so good relations between Sudan and the Egyptians, the Sudanese administration supported Egypt against the “American sabotage.” However, the warm relations between Egypt and the Sudanese government ended with the exit of the sitting government at the hands of a military coup. The new administration in Sudan revised most of the agreements as it needed more water for ambitious projects it had in the pipeline. The government put in place irrigating programs that were aimed ramping up the food production of the country to cater to the rising needs.

3.4 Potential Conflicts

Sudan insisted, and with the help of a string of threats, that it had the right to use as much water as the farms needed.⁵⁰ The bilateral relations that had existed during the reign of the Sudanese President Numayri deteriorated to ugly levels. At the height of the conflict, Sudan is alleged to have made an attempt on the life of the Egyptian President Hosni Mubarak who was visiting Ethiopia. The heat of the conflict saw the Sudanese authorities threaten to change the flow of the Nile. Water had become a tool of manipulation in the hands of the Sudanese. They wanted to use the water “stick” to beat the Egyptians and probably obtain concessions for the authorities in Cairo. However, the Sudanese fire was returned by the Egyptian fire. The Egyptian President warned the Sudanese not to use water as a weapon. The 1990s tension led to many commentators predicting a “water war” that would break out in the Nile basin.

⁴⁹ Kalpakian, Jack. (2017) *Identity, Conflict and Cooperation in International River Systems*. Routledge.

⁵⁰ Kimenyi, Mwangi, and John Mbaku. (2015) *Governing the Nile River Basin: The Search for a New Legal Regime*. Brookings Institution Press.

Meanwhile, Ethiopia was coming up from the ashes of the civil war that had ravaged the country for a long time.⁵¹ With financial and technical support from Western powers, Ethiopia initiated bold moves in the thick of the Sudan-Egypt conflict. The burgeoning population coupled with a new realization that they could utilize the Nile basin resources for irrigation to increase food production, the Ethiopian authorities launched the development of numerous small dams that straddled the course of the Nile. Against the background of vicious objections and threats from Sudan and Egypt, Ethiopia constructed dams and irrigated its lands without fear. The government had diplomatic support from Western powers and probably military support in case of an offensive from the neighbors.⁵² Recently, the government has set in motion one of the largest projects ever undertaken by the country. The Grand Ethiopian Renaissance Dam is estimated to cost in the region of \$5 billion. The move sent panic up the Egyptians' spine at the time of announcement. However, there seems to be a deal on how the logistics will be worked out.

3.5 Data Analysis and Presentation

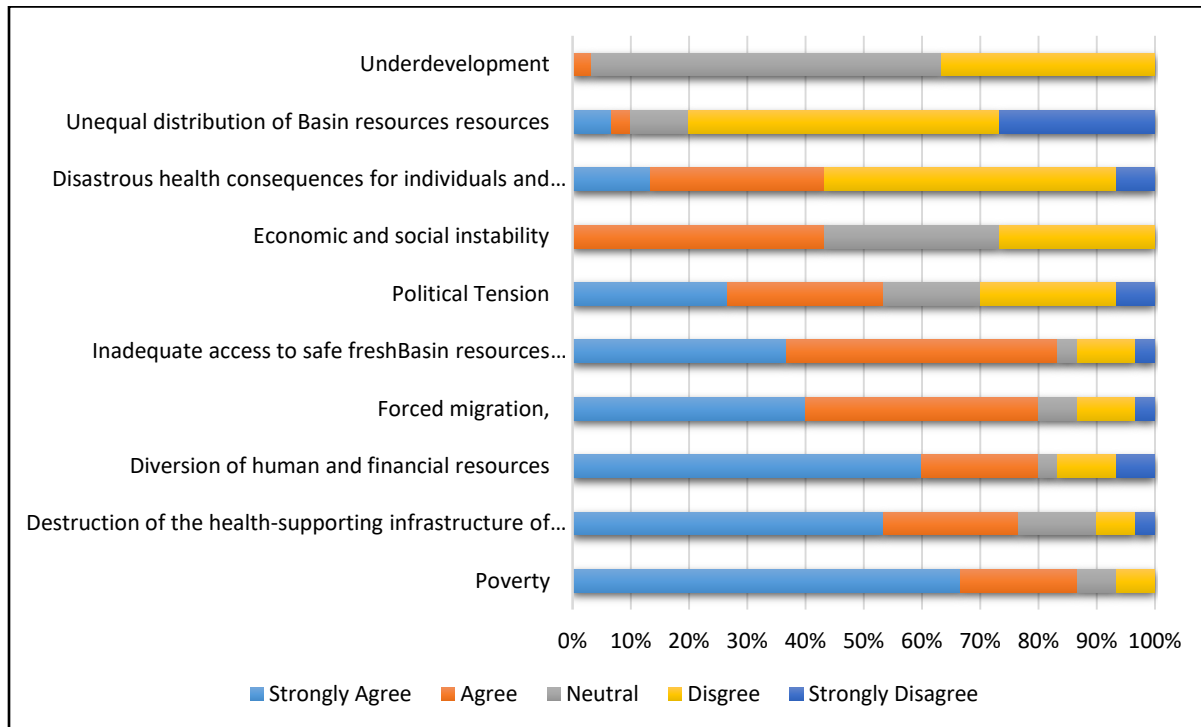
In order to establish the potential and existing form of conflict, the respondents were asked to respond to statement on existing and potential conflict over the Nile River Basin resources. The results were presented in figure 3.2. Results indicated that existing and potential conflict is mainly caused by poverty, destruction of the health-supporting infrastructure of society, diversion of human and financial resources as well as forced migration. Others agreed that inadequate access to basin resources, malnutrition, political tension, economic and social instability, disastrous health consequences for individuals and populations and also unequal

⁵¹ Kalpakian, Jack. (2017) *Identity, Conflict and Cooperation in International River Systems*. Routledge.

⁵² Link, P. Michael, Juergen Scheffran, and Tobias Ide. (2016) "Conflict and Cooperation in the Water-Security Nexus: A Global Comparative Analysis of River Basins under Climate Change." *Wiley Interdisciplinary Reviews: Water* 3.4: 495-515.

distribution of basin resources as well as underdevelopment are the other factors that contribute to conflict.

Figure 3.2 Existing and potential conflicts



Source: Research Data, 2018.

3.6 Existing Nile Resource Sharing Arrangements

Of the nearly 500 million citizens of the Nile basin nations, approximately 200 million rely on the Nile for a source of livelihood.⁵³ Be it for fishing or using the waters for irrigation, the issue needed urgent attention by policy makers so that to avert any conflict that could arise. An exponential rise in the rate of population growth in the region is another more crucial reason for the leaders in the region to find ways through which the Nile can foster peace even as it feeds households and national economies. In light of the mid-1990s boiling conflicts, there was need to

⁵³ Said, Rushdi .(2013) *The River Nile: Geology, Hydrology and Utilization*. Elsevier.

find a consensus that would guide the manner in which the water of the Nile can be shared.⁵⁴ This is after the realization that there was no way a downstream country would deny upstream countries use of the resource. The same applied to the upstream countries. Leaders of the relevant ministries of the Nile basin countries came together to find the way out that would regulate and guide the manner in which the Nile would be used. With the increasing threat of many Nile basin nations being declared ‘water scarce by 2050’ the importance of the rationale for the usage of the Nile could not be overstated.⁵⁵ Such issues are what informed the Council of Ministers of the region in their deliberations on the rationale for sharing the basin resources of the Nile.

The Nile Basin Initiative (NBI) is the culmination of the deliberations. An intergovernmental initiative, the NBI was established in 1999. It includes all the countries that make the Nile basin with Eritrea as an observer member. At the core of the initiative is an agreement that defines the manner in which the member countries of the Nile Basin can make use of the Nile basin resources without infringing on the rights of the other member states of usage.⁵⁶ The initiative undertakes to ensure that all the nations benefit from the resource. Among the objectives of the NBI is to ensure the sustainability of the resource even as the members share it equitably. The initiative also seeks to ensure that the water resource is properly used and allocated to the uses that give the most benefit. It helps member countries to implement projects that are aimed at mitigating the adverse effects of hunger and poor economic state of the member states.

⁵⁴ Salman, Salman MA. (2017) "The Nile Basin Cooperative Framework Agreement: Disentangling the Gordian knot." *The Grand Ethiopian Renaissance Dam and the Nile Basin*. Routledge, 7. 18-40.

⁵⁵ Degefu, Dagmawi Mulugeta, Et Al. (2016) "Water Allocation in Transboundary River Basins Under Water Scarcity: A Cooperative Bargaining Approach." *Water Resources Management* 30.12: 4451-4466.

⁵⁶ Hissen, Nina, Declan Conway, And Marisa C. Goulden. (2017) "Evolving Discourses on Water Resource Management and Climate Change In the Equatorial Nile Basin." *The Journal of Environment & Development* 26.2: 186-213.

In recognition of what an important step the NBI is, the World Bank created a platform that brought together donors who raised money that would go towards supporting the NBI financially. The initiative was a major step by the member states towards averting conflict and ensuring that they cooperate to properly use the Nile to kick poverty away from the region. The international interest is important in such a way that donors help to plug financial shortages that may be encountered in the implementation of the initiative.

The initiative notwithstanding, the Nile basin nations have a lot on their plate. The Food and Agriculture Organization estimates a higher demand for food and other water-related basic needs in the region in the next 20 years.⁵⁷ The expanding population, coupled with the widespread signs of climate change is going to be posing a big challenge to any water sharing initiative in place going forward. At the same time, most of the nations in the basin are still economically underdeveloped and are in the race to gain economic independence and to be able to lift populations out of poverty. Therefore, countries will still undertake controversial projects like the Grand Ethiopian Renaissance Dam project that is intended to boost the manufacturing sector of Ethiopia. In response, upstream countries will want to respond with threats in an effort to protect the volume of water that is needed. Since Egypt is estimated to need more water in future, projects that threaten to reduce the water flow to the country will be viewed as a direct threat to the economy of the country. These are real issues that the NBI and the Nile Basin Trust Fund (NBTF) will be faced with and must rise above. The donor fund under the NBTF and the NBI authority will be tested to greater lengths. Importantly, the member states should perhaps be encouraged to move their source of livelihood and economic progression from agriculture.

⁵⁷ Hissen, N., Conway, D., & Goulden, M. C. (2017). Evolving Discourses On Water Resource Management and Climate Change in the Equatorial Nile Basin. *The Journal of Environment & Development*, 26(2), 186-213.

3.7 The Existing Nile Agreements

Indeed, the long-standing conflict among the riparian states of the Nile River over the use of its resources is increasingly being blamed on the lack of authentic information on the mundane issues concerning the conflict. This has over the years developed into a looming concern that has called for political interventions. These interventions have resulted to agreements which have served different purposes over the years. This section discusses the 1929 and 1959 agreement between Egypt and Sudan and what this meant for the countries sharing the Nile River Resources.

3.7.1 The 1929 Egypt/Sudan Nile Agreement

The 1929 Agreement between Egypt and Britain signing on behalf of Sudan and its East African colonies was realized on the 7th May 1929 in Cairo and came into force the same day. As a result of increased tension between the countries over the use of the Nile resources, a Nile Waters Commission was set up in 1925 to come up with recommendations on the best way forward. It included representatives from both countries involved and was chaired by a Briton, and an Egyptian member. It is important to point out that this meant that other riparian countries had little or no representation. Efforts to include these nations were further jeopardized by Sudan's political instability, owing to the civil war, at that time. The agreement was therefore a temporal one in principle depending on the future political and socio-economical unfolding in Sudan.

At the time of making this agreement, no major utilization of the Nile waters would take place without consultations with Egypt. Additionally, most riparian states were under colonial powers and so retain was their mediator. Concerns over Britain's impartiality arose as it was feared that it favored Egypt over Sudan. Indeed, these concerns were true as this agreement had restrictions

that meant that the riparian states in not mentioned in this treaty would depend on Egypt' good-will which were not forthcoming.

3.7.2 The 1959 Egypt/Sudan Nile Agreement

The 1959 Egypt/Sudan Nile Agreement was brought about by Egypt's plans to build Aswan High Dam, which meant that the country would collect the entire annual flow of the Nile water. It was also regarded as a review of the 1929 agreement after Sudan gained its independence in 1956. Sudan insisted that the previous agreements that were unfair and this led to the 1959 agreement between Sudan and Egypt. Again, this time, other riparian countries were not included. The agreement tatted that Egypt had the authority to utilize up to 87 per cent while 13 per cent was awarded to Sudan. This omission has caused a lot of discomfort amongst the sidelined states and has termed the Treaty invalid. It is the conviction of most experts in conflict resolution that a good agreement should involve all concerned partners. Nonetheless, the two treaties failed to address the issue of all-inclusiveness of stakeholders and equity in the management and distribution of the Nile waters. They have remained bi-lateral treaties that have been the reasons for the stalemates witnessed in the prior negotiations.

Chapter Four

The Challenges, Opportunities and Prospects for the Nile Resources as a Source of International Co-Operation

Introduction

Being the longest river in the world, with a length of 6670 km, River Nile flows through 10 African countries namely; Burundi, Rwanda, Kenya, Uganda, Democratic Republic of Congo, Tanzania, Eritrea, Ethiopia, Sudan and Egypt.⁵⁸ It is the major source of renewable energy in the region, especially to the major riparian countries including Sudan, Ethiopia and Egypt.⁵⁹ Political tensions and conflicts have existed in the three major riparian countries for many decades. This conflict is expected to extend to all the riparian countries as the need to use the water from the Nile by each country arises.⁶⁰ However, since the late 20th century, the international communities have encouraged and supported the Nile basin countries to establish cooperative institutions in the regions.

Climate change and increasing demand for water from the Nile has also resulted in decreasing supply of water sources in the basin. This has brought about severe stress to the process of collaboration and engagement of these countries. As a result, several attempts to form cooperation have failed. For instance, the Hydromet project, which involved Egypt, Kenya, Sudan, Tanzania, Uganda together with the United Nations Development Program (UNDP) and

⁵⁸ Said, Rushdi. (2013) *The River Nile: Geology, Hydrology And Utilization*. Elsevier.

⁵⁹ Mohamoda, Dahilon Yassin. (2003) *Nile Basin Cooperation: A Review of the Literature*. No. 26. Nordic Africa Institute.

⁶⁰ Pearce, Fred. (2015) "On the River Nile, A Move to Avert a Conflict over Water." *Yale Environment 360 Report*.

the World Meteorological Organization (WMO) failed after 25 years of efforts and attempts to come up with an effective cooperation in the Nile basin.⁶¹

New water demands in the basin have increased considerably over the years and are becoming the major problem in the region. Increased population, increased agricultural works and the need for power generation have resulted in a significant increase in the demand for water from the Nile. Each country is now carrying out water projects on its own. Ethiopia, for instance, is initiating the construction of Africa's largest hydroelectric power plant along the Blue.⁶² The efforts to form cooperation between all the countries in the Nile basin is the only way that will help this region on how to share the water without conflicting. This will only be effective if all the countries involved are ready to agree on sharing the water so as each of the benefits. The three major riparian countries, Egypt, Sudan and Ethiopia should be ready to accommodate the idea that all the countries should share the basin resources of the Nile.⁶³

4.1 Challenges in the Nile Resources as a source of International Cooperation.

4.1.1 Increasing Demand in Egypt

Egypt depends entirely on the water from the Nile. It obtains up to 97% of the water it uses from the Nile. The fact that the Egyptian population is growing rapidly and the possible sharing of the water by all the other riparian countries poses Egypt to a possible future scarcity of water. In fact, this could make Egypt run out of the water by 2025 (UN). All the agricultural products in Egypt are obtained through irrigations or importation as it is geographically located in a desert. And as the population is increasing, more food will be required and consequently, more and

⁶¹ Swain, Ashok. (2011) "Challenges for Water Sharing in The Nile Basin: Changing Geo-Politics and Changing climate." *Hydrological Sciences Journal* 56.4: 687-702.

⁶² Taye, Meron Teferi, et al. (2016) "The Grand Ethiopian Renaissance Dam: Source of Cooperation or Contention?" *Journal of Water Resources Planning and Management* 142.11: 02516001.

⁶³ Zeitoun, Mark, Et Al. (2017) "Transboundary Water Interaction III: Contest and Compliance." *International Environmental Agreements: Politics, Law and Economics* 17.2: 271-294.

more water for irrigation will be needed. The population of Egypt is expected to be 140 million by 2050 which is about double the current population. These will double the demands and needs for water. Also, Egypt imports most of its food especially grains and this puts it at a risk of global hikes of food prices and shortages in supply, and Egypt is mitigating this risk by reclaiming land in desert areas. This requires large amounts of water and thus further strain on the existing supply from the only source, the Nile.⁶⁴

Demand for electricity is will also increase with the increasing population. Aswan High dam alone produces 10% of the electricity to be used in Egypt. This amount will have to double when the population doubles in order to maintain the supply. Egypt still gets the largest allocation of the water, but it is still not enough for its current population. This situation will worsen when the geostrategic alliances among the nations upstream are put in place. Egypt should, therefore, embark on putting in place strategies to save water for its population as well as obtaining other sources of water such as tapping from other places in order to avoid the easily foreseeable conflicts with its neighbors that will result from water scarcity.⁶⁵

4.1.2 Development in the upstream countries

The countries in the Nile basin are experiencing population growth rates ranging between 2.9% and 3.1% per annum. This growth rate is rather high and will increase the demand for water to be used in the industries, households, and agriculture. The economies of these countries are also growing rapidly resulting to development of infrastructure, and thus, several projects have to be developed along the Nile. Projects such as irrigation schemes, piping of water and production of

⁶⁴ Swain, Ashok. (2011) "Challenges For Water Sharing In The Nile Basin: Changing Geo-Politics And Changing Climate." *Hydrological Sciences Journal* 56.4: 687-702.

⁶⁵ Mohamoda, Dahilon Yassin. (2003) *Nile Basin Cooperation: A Review of the Literature*. No. 26. Nordic Africa Institute.

electricity through are among the many other areas that demand a lot of water, and the Nile is the major water source in the region, it has to be touched. Ethiopia's economy is growing at an average rate of 7.5% per year for the last four years and is demanding a lot of use of the water from the Blue Nile.⁶⁶ It is constructing a US\$4.7 billion dam along the Blue Nile, which is expected to be Africa's biggest man-made lake with the capacity of between 62 to 74 billion cubic meters, and will generate up to 6000 megawatts of power as illustrated in the figure below. This could reduce the flow rates for downstream countries which are Sudan and Egypt, and thus the two countries have been constantly protesting against the construction of the dam, the concern is the fact that about 3 billion cubic meters of the Nile resources will be evaporating from the lake every year. This could also reduce the flows for downstream countries and thus, limit them from developing projects that demand a lot of water.⁶⁷

The newly emerged country, South Sudan has forced reallocation of the resource and several sites have been chosen along the Nile for infrastructure development such as the construction of dams and irrigation schemes. This will greatly reduce the volume flow rate to the downstream riparian nations majorly Egypt.

4.1.3 Environmental Pressures

Climate change, environmental pollution, and degradation of land are the major environmental factors that pose pressure to the Nile. Climate change will probably result in flooding, reduced volume flow of the river, droughts, and diseases. Dam building results to land degradation and displacement of people, moving thousands of people from the fertile banks of the Nile to the

⁶⁶ Veilleux, Jennifer C. (2013) "The Human Security Dimensions Of Dam Development: The Grand Ethiopian Renaissance Dam." *Global Dialogue* 15. 2: 1-15.

⁶⁷ Taye, Meron Teferi, et al. (2016) "The Grand Ethiopian Renaissance Dam: Source of Cooperation or Contention?" *Journal of Water Resources Planning and Management* 142.11: 02516001.

deserts. The high population growth rates in upstream nations will also result to increase in size of the cities and town areas, increased industrial and agricultural activities and thus more pollution to the water of the Nile. The use of agricultural chemicals by the huge populations will contribute greatly to the already existing problem of the salinization of the Nile delta. This will limit the agricultural activities in these areas and will probably spread further upstream. The overdrawing of water from the river by Egypt, for instance, to reclaim deserts will result in conflicts with the other riparian nations. Egypt makes use of Canals for irrigation, where water from the Nile is channeled through canals to the irrigation land and then the water is allowed to flow back into the river with chemicals such as fertilizers, which are majorly salts. This pollutes the water and poses a great danger to the already large population. As a result, Egypt will need more volume flow rate from upstream countries which will only bring conflicts as the demand for water is becoming crucial for all countries. Nations in the Nile basin must be ready to effectively govern, and educate their populations on the need to control population and carry out developments plans that are meaningful and not wasteful so as to minimize food shortage and water insecurity. Also, the development of infrastructure should be in accordance with the agreement between all the nations in order to avoid conflicts and problems that could lead to wars.

The need to increase food production in Ethiopia could make them need to irrigate their land and will, therefore, use the water of the Blue-Nile, one of it is few natural resources to carry out irrigations. This volume flow of water could be substantially reduced when such an initiative is

put in to practice. Ethiopia has sovereign rights to utilize its natural resources within its borders to curb the economic crisis it faces.⁶⁸

4.1.4 Potential for Interstate Conflict

While there are ten countries on the riparian of the Nile, there exists no set agreement on sharing the water. But for thousands of years, Egypt has depended on the water to the extent that they claim it is theirs, and no one upstream should use the water. However, the countries upstream are developing, and the population increase, climate change among other things has increased the demands for water from the Nile. For starters, Ethiopia is building the Grand Ethiopian Renaissance Dam (GERD) which would become the largest manmade lake in Africa and perhaps the eighth largest in the world.⁶⁹ Egypt has in the past threatened to go to war with any nation upstream which has a bigger dam as it could result in a disastrous outcome to Egypt's economy. The colonial government's treaty gave Egypt the largest share of the water of the Nile. Another small share was given to Sudan. However, the other eight riparian countries do not recognize this colonial government treaty as it did not include them in sharing of the water. As a result of these, six of these riparian countries signed for redistribution of the water during the Entebbe agreement. The emergence of the new nation, South Sudan, brings in more complications to the colonial agreement. The question that remains is what will Egypt give up and decide to share the water with all the riparian nations? Currently, Egypt is pushing South Sudan encouraging it to assert its entitlement to a share of the Nile with a motive of buying the share from the New country. This indicates possibilities for further conflicts in the future.

⁶⁸ Zeitoun, Mark, Et Al. "Transboundary Water Interaction III: Contest and Compliance." *International Environmental Agreements: Politics, Law and Economics* 17.2 (2017): 271-294.

⁶⁹ Hammond, Michael. "The Grand Ethiopian Renaissance Dam and the Blue Nile: Implications for Transboundary Water Governance." *Global Water Forum*. Vol. 1307. 2013.

Another problem is that; it is quite difficult to determine the ratios in which the basin resources of the Nile will be shared by each nation. And even though someone might come up with a clear way, we cannot tell how much water will be left in the river, especially if we keep on living in the region, clearing forest, polluting the environment and doing all sorts of the thing that will impact negatively the volume of the water.⁷⁰

4.1.5 Interstate Conflicts

Interstate conflict is a primary challenge caused by sharing of River Nile among the states involved. There are evident disagreements between Egypt, Sudan, Ethiopia and Eritrea due to the significance of the Nile resource to all the countries. Such conflicts arise because of the Sudanese and Egyptian monopoly over the resource (Dinar et al., 2015). Disagreements arise because Sudan and Egypt have been in control of the river for a significant period of time. Due to this factor, the two nations signed an agreement in 1959 to define each country's share in the Nile. Egypt's refusal to re-evaluate the terms of the treaty sparked conflict in other countries that felt left out in the control of the Nile.⁷¹ It is essential to state that both Egypt and Sudan have controlled the largest share of the Nile for a long period. The practice has increased tension among countries that depend on the Nile for various resources and economic activities. Due to these factors, the sharing of the Nile triggers conflict between states that depend on the river for their activities.

⁷⁰ Swain, Ashok. (2011) "Challenges For Water Sharing In The Nile Basin: Changing Geo-Politics and Changing Climate." *Hydrological Sciences Journal* 56.4: 687-702.

⁷¹ Dinar, Shlomi, et al. (2015) "Climate Change, Conflict, and Cooperation: Global Analysis of the Effectiveness Of International River Treaties In Addressing Water Variability." *Political geography* 45: 55-66.

4.1.6 Political Conflicts

Political conflicts are a primary occurrence resulting from the sharing of the Nile by countries situated in the horn Africa. Politics plays a primary role in creating disagreements among the countries that strive to have the largest share in the control of the river. Egypt in particular, is linked to the Nile due to various factors. A connection that is organic in nature exists between the Egyptian civilizations and the Nile.⁷² This factor makes Egypt the primary beneficiary of the Nile using symbolic factors. In this case, the construction of the Aswan high dam triggered political involvements that sought to create the dam for both economic and domestic purposes.⁷³ Unlike Egypt, Ethiopia's intentions to create the Grand Renaissance Dam wrecked political havoc in Egypt and Sudan which caused conflicts. In this case, the creation of the dam increased threats to Egypt because the country occupies a large share of the Nile. Ethiopia's GERD project benefits the country to a large extent although political involvement creates conflict among the nations. For these reasons, the sharing of the Nile contributes to conflict in major countries utilizing the river.

4.1.7 Economic Conflicts

The sharing of the Nile has resulted into economic conflicts between Egypt and Ethiopia regarding the GERD project facilitated on the Nile by Ethiopia. Economic interests between both countries trigger disagreements about the utilization of the Nile. Notably, Ethiopia believes that the project is a primary development in improving the country's economy.⁷⁴ Egypt on the other hand, feels that the project is detrimental to the country's survival because much water is stored

⁷² Abdelhady, Dalia, et al. (2015) "The Nile and the Grand Ethiopian Renaissance Dam: Is There a Meeting Point between Nationalism and Hydro solidarity?" *Journal of Contemporary Water Research & Education* 155.1: 73-82.

⁷³ Chen, Huiyi, and Ashok Swain. (2014) "The Grand Ethiopian Renaissance Dam: Evaluating Its Sustainability Standard and Geopolitical Significance." *Energy Development Frontier* 3.1: 11.

⁷⁴ Abdelhady, Dalia, et al. (2015) "The Nile and the Grand Ethiopian Renaissance Dam: Is There a Meeting Point between Nationalism and Hydro solidarity?" *Journal of Contemporary Water Research & Education* 155.1: 73-82.

in the reservoir which leads to a deficiency. Also, the project is a major threat to Egypt because Egypt uses the Nile to solve a total of 98% of the nation's water needs. Therefore, due to economic factors; there is a conflict that arises because of sharing the Nile. Egypt largely relies on the resource for economic, domestic and agricultural purposes. For this reason, the country feels concerned about catering for its population adequately using the Nile.

4.1.8 Social Conflicts

The sharing of the Nile triggers the occurrence of social conflicts due to the primary resource being utilized. By studying the Nile, an individual comes to the realization that countries within the Horn of Africa occupy central positions in the control of River Nile. Egypt aims at utilizing the resource fully for historical, economic and agricultural purposes whereas Ethiopia is emphatic on the economic benefits of the GERD project in the Nile. In the first case, the rights considered to be historic regarding the Nile make Egypt a key beneficiary in the utilization of the natural resource. Unlike other riparian countries in the upstream, Egypt as a nation stands to gain fully from the Nile. Disagreements arise because one entity strives to be in full control of the resource as it utilizes it whereas the other wants to gain economically.⁷⁵ Due to these factors, the countries having the largest share in the control of the resource feel threatened in instances where other nations sharing the resource express different interests in the Nile. Therefore, the factors facilitate the occurrence of social conflicts in countries involving Egypt and Ethiopia.

⁷⁵ Dinar, Shlomi, et al. (2015)"Climate Change, Conflict, and Cooperation: Global Analysis of the Effectiveness of International River Treaties in Addressing Water Variability." *Political geography* 45: 55-66.

4.2 Prospects and Opportunities for the Nile resources as a Source of International Cooperation

Establishment of cooperation between Egypt and all the other riparian nation will provide Egypt with a greater security for its future water and hence stability. If the situation continues the way it is currently, the nation's upstream of the Nile will keep on claiming their share of the water and this means that there will be conflicts forever. Ever since the civil wars in Egypt, other riparian nations have been able to take steps to advance their development projects along the Nile, for instance, the construction of the great GERD in Ethiopia's the Blue Nile. Cooperation with Ethiopia and all the other riparian nations will be the only way to achieve a better way of utilizing the basin resources of the Nile without conflict and risks for future insecurity.

Despite the fact that the Ethiopian government declares that the dam they are constructing poses no harm to Egypt, Egypt fears that the construction will result in two major problems. The first problem is that while the dam is being filled, it will take almost a year, and this means that the volume flow from the Blue Nile will be stopped for over a year. This could significantly affect Egypt and could have further adverse effects if the years are dry.⁷⁶ The second problem arises from Sudan. Egypt fears that the GERD will allow Sudan to increase the amount of water they take from the Nile for irrigation massively because the dam would allow a continuous flow of water down the Blue Nile throughout the year, which will enable Sudan to consequently draw water continuously throughout the year. Irrigations result in massive water losses and thus reduce

⁷⁶ Okonkwo, Theodore. (2017) "Management of Transboundary Natural Resources." *Journal of Law and Conflict Resolution* 9.4: 42-52.

the volume of water to be passed further downstream. However, the countries have come to some agreement on the construction of the GERD and the construction is underway.⁷⁷

In the year 1999, the Nile Basin Initiative was established (NBI). This initiative improved the relationship between the countries in the region. The initiative has received support from many funding agencies including the World Bank. This initiative has brought almost all the riparian countries together and has greatly eased the tensions that existed earlier. The NBI is expected however to foster economic and social development within the basin by putting in place the joint benefits of sharing of the basin resources of the Nile while at the same time, considering the long-term environmental and ecological sustainability. However, this initiative has not been able to achieve its goals and expectations because, there has been disagreement among several countries including Egypt which takes and benefits from the largest share of the water from the river.⁷⁸

All the Nile basin countries have turned down the request by the NBI to ratify the Convention on the Law of the Non-Navigational Uses of International Watercourses. This convention states that all the countries should use the water sources equally and reasonably. It also defines a procedure to be followed when planning a scheme that may have adverse effects on the riparian nations. This convention will only solve the Nile basin water sharing disputes if it is given full support by all the nations involved. Due to this lack of full support, the NBI has ended up solving simple issues while postponing major ones which involve water sharing such as the dispute in the construction of the GERD dam in Ethiopia, which is opposed by Egypt and Sudan. The NBI also depend entirely on external funding, and this brings about doubts about its long-term

⁷⁷ Barnes, Jessica. (2017) "The future of the Nile: Climate Change, Land Use, Infrastructure Management, and Treaty Negotiations in a Transboundary River Basin." *Wiley Interdisciplinary Reviews: Climate Change* 8.2: e449.

⁷⁸ Barnes, Jessica. (2017) "The future of the Nile: Climate Change, Land Use, Infrastructure Management, and Treaty Negotiations in a Transboundary River Basin." *Wiley Interdisciplinary Reviews: Climate Change* 8.2: e449.

sustainability. The world bank and other developed countries have put in place initiatives to support the region sharing of water and have even promised future support but the countries within the basin themselves have shown no commitment to the initiatives and as results, there has been very little if no any success. At this point, the NBI came to a breaking point.⁷⁹

In the year 2007, the Nile Council of Ministers formed the Cooperative Framework Agreement (CFA). During this time, they were intending to establish a permanent commission for the river basin. However, the basin countries did not cooperate fully. Instead, they showed their increased demands for water from the Nile, while intending to build more dams within their territories. The CFA was expected to be signed in the year 2007 and would have replaced the existing agreement between Egypt and Sudan on the sharing of the Nile basin resources. However, the two countries denied the agreement, stating that it would replace their historical position and power in the share of the water.⁸⁰

Attempts to come to an agreement on the CFA have failed. Egypt and Sudan have attempted to introduce new proposal to establish the Nile Basin Commission before reaching the final agreement on the CFA without success. Seven countries in the upper riparian regions of the basin agreed to go on with the CFA ignoring the complaints from Sudan and Egypt. These countries include Kenya, Uganda, Tanzania, Ethiopia, and Rwanda have already signed the agreement. Democratic Republic of Congo and Burundi are yet to sign this agreement, and this may result in the establishment of the Nile River Commission. However, the sharing of water issue will not be addressed unless the two lower riparian nations Egypt and Sudan agree with all the other nations in the regions. These two countries fear that the CFA does not protect their historic entitlement

⁷⁹ Okonkwo, Theodore. (2017) "Management of Transboundary Natural Resources." *Journal of Law and Conflict Resolution* 9.4: 42-52.

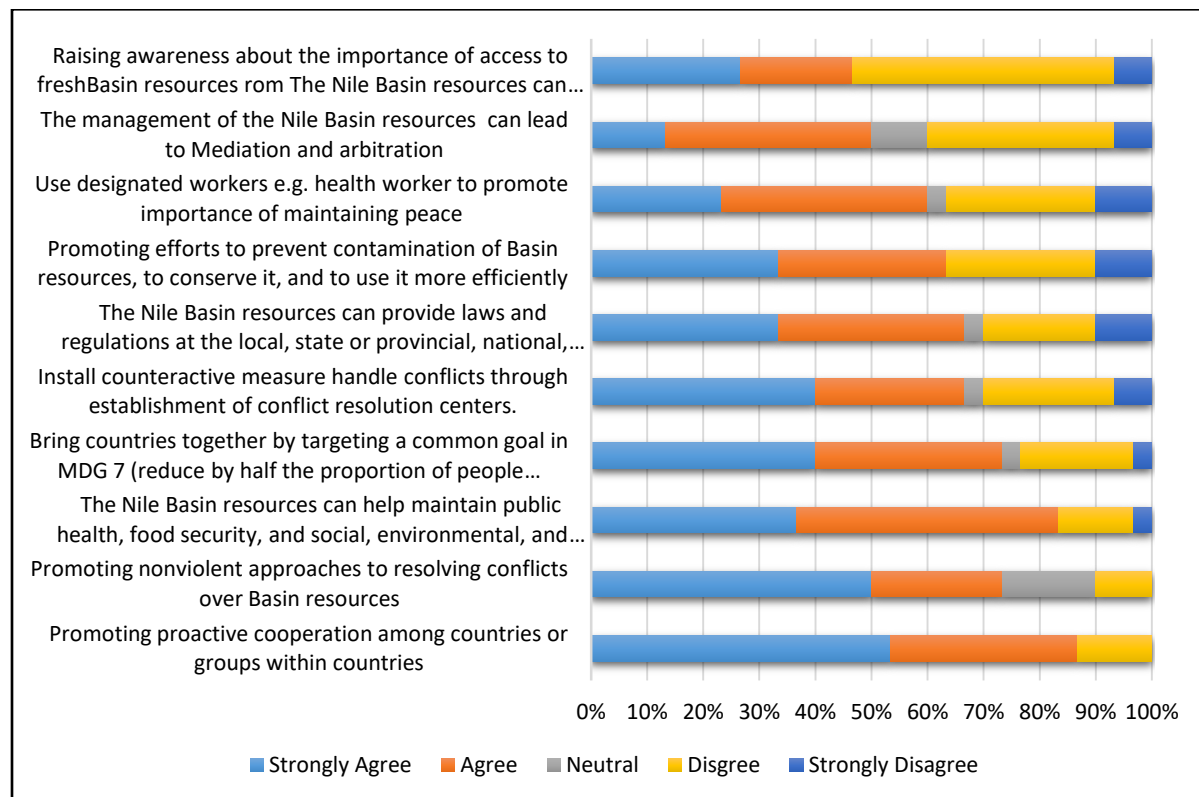
⁸⁰ Mekonnen, Mesfin M., and Arjen Y. Hoekstra. (2010) *The Green, Blue And Grey Water Footprint Of Farm Animals And Animal Products*. Vol. 1. Delft: UNESCO-IHE Institute for water Education.

on the sharing of the water. Most countries within the region are taking initiatives to protect their water for the fear of global warming and climate change. Ethiopia, Sudan, and Egypt have already laid down their initiatives. This country has gone this step further, in spite of the international community's support for cooperation in the management of the Nile resources.⁸¹

4.3 Data Analysis and Presentation

Finally, the study investigated the prospects and opportunities for the Nile River Basin to be a source of international cooperation. The analysis of the result is provided for in Figure 4.1

Figure 4.1 Prospects and Opportunities for Nile Resources



Source; Research Data, 2018.

The responses pointed out that promoting proactive cooperation among countries or groups within countries is a prospect and opportunity that can be used as a source of international

⁸¹ Okonkwo, Theodore. (2017) "Management of Transboundary Natural Resources." *Journal of Law and Conflict Resolution* 9.4: 42-52.

cooperation. Furthermore, promoting nonviolent approaches to resolving conflicts over Basin resources should be encouraged. The Nile Basin resources can also help maintain public health, food security, and social, environmental, and economic stability. Additionally, bring countries together by targeting a common goal in MDG 7 (reduce by half the proportion of people without sustainable access to safe drinking Basin resources and basic sanitation. They also agreed that installing counteractive measures to handle conflicts through establishment of conflict resolution centers will go a long way in bringing about cooperation. The Nile Basin resources can also provide laws and regulations at the local, state or provincial, national, or international level which when followed will lead to cooperation. Furthermore, promoting efforts to prevent contamination of Basin resources, to conserve it, and to use it more efficiently as well as using designated workers e.g. health worker to promote importance of maintaining peace are moves that can eventually lead to cooperation at the international level. Finally, the respondents also agreed that the management of the Nile Basin resources can lead to Mediation and arbitration and that raising awareness about the importance of access to resources from The Nile Basin can bring prosperity.

4.4 Impacts of the Conflicts

Interstate conflicts among the countries utilizing the Nile impact those involved through increased tension and destabilization of the countries. In the first case, the conflicts between the states lead to much tension within the countries sharing the resource. This factor arises because those occupying the largest share feel threatened in instances where other countries want to utilize the resource to maximum potential. Therefore, such moves create tension within the countries involved. In the second instance, conflicts among nations create instability within the countries that rely heavily on the Nile. There is destabilization of existing economies where the

GERD project of Ethiopia is halted.⁸² Such conflicts affect the involved nations adversely as they lead to severe outcomes. Due to such situations, many involved countries stand to lose a lot from disagreements with other nations. Consequently, the countries affected suffer from destabilized economies as they fail to fully cater for their increasing populations. In the long run; many lose a lot as a result of the interstate conflict.

Political instability and lack of cooperation are primary impacts that result from political conflicts regarding the Nile. Differing political interests about the Nile contribute to instability among various countries sharing the natural resource.⁸³ Basing on this factor, the occurrence of disagreements in countries that are dependent on the Nile leads to instability because there is no peace and harmony. Therefore, political tension occurs which makes majority of the countries insecure and unstable. Political conflicts hinder cooperation among countries around the Nile basin. There is no coordination of activities within countries because of political opinions that differ from each other. Due to political conflicts, the countries sharing the Nile fail to cooperate and coordinate activities among themselves.

Poverty is a primary impact of the economic conflicts existing among countries that share River Nile in the Horn of Africa. Due to the differing economic interests regarding the natural resource, majority of the countries strive to address their economic interests at the expense of other nations. This factor makes countries having the least share in the control of the resource poorer and less developed. In such a case, Egypt experiences much progress economically in comparison to Ethiopia and Eritrea. Also, research studies indicate that ten riparian countries

⁸² Melesse, Assefa M., Wossenu Abtew, and Shimelis G. Setegn, eds. (2014) *Nile River basin: Ecohydrological Challenges, Climate Change and Hydro Politics*. Springer Science & Business Media.

⁸³ Kalpakian, Jack. (2017) *Identity, Conflict and Cooperation in International river systems*. Routledge.

located in The Nile are among the poorest compared to others in other regions.⁸⁴ Therefore, increased economic conflicts because of the sharing of the Nile lead to poverty within the affected nations.

Social conflicts in the riparian nations within the Nile basin impact countries because they trigger the occurrence of Trans boundary water disputes in the affected countries. The sharing of the Nile among Egypt, Ethiopia, Eritrea and Sudan is a significant factor that largely contributes to the existence of such disputes.⁸⁵ It is essential to state that Egypt felt threatened by the GERD project initiated by Ethiopia in River Nile. This factor was evident where the Egyptian nation felt so because the country was afraid of losing the Nile as the only source of water. The control of water in the Nile impacts countries because it sparks numerous disputes regarding the control of the resource. Notably, the factor is practical in instances where the Egyptian and Ethiopian nations dispute on who should control the resource. In most cases, Egypt feels threatened because the GERD project is perceived to cut the water supply from the Nile into Egypt.⁸⁶ With such actions taking place, disputes regarding the resource happen frequently as countries struggle to have full control of River Nile.

4.5 Discussion and Conclusion

The population that depends on the water from the Nile is larger than the supply of the water can support. This population is increasing considerably and will double by the year 2050. This will pose pressure on the water, and it will reach a point where it will not be able to support the population. The demand for water is growing exponentially, the climate is changing as a result of global warming and therefore, as a consequence the volume of the Nile will decrease. The one

⁸⁴ Mirumachi, Naho. (2015) *Transboundary Water Politics in the Developing World*. Routledge.

⁸⁵ Chen, Huiyi, and Ashok Swain. (2014) "The Grand Ethiopian Renaissance Dam: Evaluating its Sustainability Standard and Geopolitical Significance." *Energy Development Frontier* 3.1: 11.

⁸⁶ Mirumachi, Naho. (2015) *Transboundary Water Politics in the Developing World*. Routledge.

and only solution to this problem is the cooperation within all the countries in the Nile Basin. The cooperation and coordination between all the riparian countries in the Nile basin is crucial as it is the only thing that can lead to better benefits from the river. Such benefits include a production of adequate food, production of adequate renewable energy from hydroelectric power production, enough and sufficient water for domestic and industrial use and many other benefits for the well-being and the development of the population.

Various initiatives have been formed in order to enhance cooperation in the Nile basin and its riparian countries but with no success as several countries have failed to come to an agreement especially on sharing of the water. For instance, Egypt and Sudan, two countries who were given a larger share of the water by the colonial government, have consistently failed to agree with the cooperation initiatives, fearing that their historic right on the share of the water will be taken away. However, most of the upstream riparian countries have ignored the opposition from Sudan and Egypt and have signed the agreement on the Cooperative Framework Agreement (CFA). Additionally, the challenge in the Nile basin is escalating further due to the fact that the population is changing rapidly, the climate is varying constantly, and the riparian countries are showing national interests and are taking matters into their own hands on the use of the Nile resources. This will further lead to problems and perhaps the war between these riparian nations.⁸⁷

It is, therefore, necessary for the involved riparian nations to come together and agree on developing a sustainable cooperation that will enable them to share the water in order to meet the needs for climate change as well as the rising population. This country should be ready to forget

⁸⁷ Zeitoun, M., Cascão, A. E., Warner, J., Mirumachi, N., Matthews, N., Menga, F., & Farnum, R. (2017). Transboundary Water interaction III: Contest and Compliance. *International Environmental Agreements: Politics, Law and Economics*, 17(2), 271-294.

their state-centric approaches to water development plans. This will bring regional stability which is actually what is in the interest of all the riparian nations. Other alternative sources of water should be identified within all the riparian countries and should be utilized so as to minimize overusing of the Nile resources. Also, all the catchment areas, especially in the upstream countries, should be protected. Forests such as those in Kenya, Uganda, and the Ethiopian Highlands should be protected from encroachment by humans so as to make sure that the water in the Nile keeps on flowing. The discussion elaborated the state of the Nile basin and the struggle for control among riparian countries. Most of the countries sharing the Nile strive to have the largest share in its control for maximum gain. Therefore, the continuous struggle for the resource leads to conflicts of varied nature among the countries affected. Conflicts arising due to the sharing of the Nile entail; interstate, political, economic and social ones. The impacts presented by the named conflicts comprise of increased tension within nations, destabilization of the economy and political instability. Also, the conflicts lead to lack of cooperation among countries and poverty. In other instances, countries are impacted in that they experience Trans boundary disputes regarding water. Egypt experiences much benefit from the Nile in comparison to other riparian countries.

Chapter Five

Summary, Conclusion and Recommendations

Introduction

This chapter brings to end this study by revisiting the summary of the study, conclusions, recommendations, limitations of the study and suggestions for further study. This study sought to investigate the discourses on shared resources as sources of conflict and cooperation, the existing and potential conflict over the Nile River Basin resources and the Prospects and Opportunities for Nile Basin Resources as a Source of International Cooperation. A summary of all these is provided for under the following sections.

5.1 Summary the Study

Natural Resources are an important aspect of human life. Their existence has played a major role in shaping the society into what it is today. Given their importance, they have developed two-faces in as far a conflict and cooperation is concerned. On one hand, they have provided man with the necessities that have allowed him to flourish while on they have led to huge conflicts and wars on the other.⁸⁸ This study sought to evaluate and determine whether the natural resources at Nile River Basin can be a source of cooperation and debunk the common myth that it is and can only be a cause of conflict. Specifically, there were three objectives sought which were to examine the discourses on shared resources as sources of conflict and cooperation, to interrogate the existing and potential conflict over the Nile River Basin resources and to examine the prospects, opportunities for Nile Resources as a source of international cooperation. A summary of the research findings was provided for under this section.

⁸⁸ Mumma-Martinon, C. A. *(2013) "Efforts towards Conflict Prevention in the Eastern African Region: The Role of Regional Economic Communities and Regional Mechanisms." Occasional Paper, Series 1.

5.2 Conclusions of the Study

The study sought to examine the discourses on shared resources as sources of conflict and cooperation. Results pointed out that poor distribution of Basin resources resulting to poverty, rapid urbanization which increases the use of Basin resources, season with low rainfall that pile pressure on the Basin resources resource as well as modernization and industrialization which leads to increased need for Basin resources are what bring about conflict or cooperation. Additionally, it was revealed that disputes concerning environmental and resource issues, dams, reservoirs, and other large-scale projects coupled with economic and social instability are other contributors to conflict in the regions with natural resources around the world. Dependency on one major Basin resources source also means that several people will fight for one source, and the situation is made worse with an ever increasing population.

An interrogation into the existing and potential conflict over the Nile River Basin resource revealed that conflict is mainly caused by poverty, destruction of the health-supporting infrastructure of society, diversion of human and financial resources as well as forced migration. Others agreed that inadequate access to basin resources, malnutrition, political tension, economic and social instability, disastrous health consequences for individuals and populations and also unequal distribution of basin resources as well as underdevelopment are the other factors that contribute to conflict.

Finally, the third objective sought by the study was found that the resources in the Nile River basin have various prospects and opportunities that can lead to international prosperity. These were that proactive cooperation among countries or groups within countries is a prospect and opportunity that can be used as a source of international cooperation. Furthermore, promoting nonviolent approaches to resolving conflicts over Basin resources should be encouraged. The

Nile Basin resources can also help maintain public health, food security, and social, environmental, and economic stability. Additionally, bring countries together by targeting a common goal in MDG 7 (reduce by half the proportion of people without sustainable access to safe drinking Basin resources and basic sanitation. They also agreed that installing counteractive measures to handle conflicts through establishment of conflict resolution centers will go a long way in bringing about cooperation. The Nile Basin resources can also provide laws and regulations at the local, state or provincial, national, or international level which when followed will lead to cooperation. Furthermore, promoting efforts to prevent contamination of Basin resources, to conserve it, and to use it more efficiently as well as using designated workers e.g. health worker to promote importance of maintaining peace are moves that can eventually lead to cooperation at the international level. Finally, the respondents also agreed that the management of the Nile Basin resources can lead to Mediation and arbitration and that raising awareness about the importance of access to resources from The Nile Basin can bring prosperity.

5.3 Recommendations of the Study

Understanding the indicators of conflict and cooperation is a critical prerequisite both to designing resilient institutions and to developing monitoring mechanisms to identify future tensions. Vulnerable basins such as the river Nile basin are, at particular risk of tensions, but programs of institutional capacity building can help mitigate the potential impacts of rapid change. After all, needs are defined by irrigable land, population, or the requirements of a specific project. These can therefore be used to prioritize the use of the natural resources for each country that is part of the basin thus preventing conflict and fostering cooperation instead. Having reviewed all these throughout the study, the following recommendations were made;

5.3.1 Build Programs of Institutional Capacity Building

It was clearly established by the study that weak and inequitable governance of natural resources can lead to destructive conflict, exacerbating tensions between groups and in some cases escalating to violence. Taking a conflict prevention and peace building approach to natural resource management is therefore a critical step towards bringing about international cooperation. This study therefore recommends the establishment of programs of institutional capacity building which can help mitigate the potential impacts of rapid change. This is because they will not only encourage dialogue but will also form a foundation for cooperation and the constructive handling of conflicts.

5.3.2 Develop Treaties that have Appropriate Criteria for Allocation

Another recommendation is to develop treaties that have appropriate criteria for allocation. Good examples include the Egypt/Sudan treaty whose criterion for allocation acquired rights from existing uses, plus even division of any additional water resulting from development projects. The Johnston Accord is also another one that saw the amount of irrigable land within the watershed in each country and South Africa's plan which saw the allocations for human and animal needs as well as initial irrigation. All these treaties are solutions that have stemmed out of sharing a natural resource. Therefore, the same can be done for the resources at the Nile resources basin.

5.3.3 Acknowledging the Benefits of Cooperative Natural Resource Management

Acknowledging the benefits of cooperative natural resource management, the international community has long advocated institutional development in the world's natural resource reservoirs and has focused considerable attention in the twentieth century on developing and

refining principles of shared management.⁸⁹ For instance, the Institute of International Law published the Madrid Declaration in 1911. This declaration regarded the International Regulation regarding the Use of International Watercourses for Purposes other than Navigation. It laid a foundation for countries are supposed to do thereby helping them prevent conflict. It has since served as a source of cooperation among the countries through trade and other relations.

5.4 Area of Further Research

The study suggested further studies to be conducted on policy guidance on the benefits of transboundary cooperation as a result of sharing natural resources. This will provide policy recommendations that can be used to change international relations for the better.

⁸⁹ Mirumachi, Naho. (2015) *Transboundary Water Politics in the Developing World*. Routledge.

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