

## The Nile River and the Grand Ethiopian Renaissance Dam

**Amal Soliman Elghouty**

Dept. of Economics

October University for Modern Sciences & Arts University

**Dina Ali**

Dept. of Economics

October University for Modern Sciences & Arts University

**Rawand Ayman**

Dept. of Economics

October University for Modern Sciences & Arts University

### ABSTRACT

**Scarcity of freshwater supplies is rapidly becoming an important factor in reducing regional growth and creating tension among regions with the same water resources. The main concern of the paper is to clarify the extent of the problems and tensions between Egypt and Ethiopia regarding the construction of the Grand Renaissance Ethiopian Dam. In the paper, some facts regarding the previous agreements and tensions between the two countries will be discussed. Some recommendations for policymakers will be presented in the last section.**

**Keywords:** GERD, Nile River, SDGs, Water Supply

### INTRODUCTION

Water is an essential part of our life and is crucial for efficient growth. Effective water management is the basis for each of the 17 Sustainable Development Goals (SDGs)<sup>1</sup>. Nonetheless, water is now a pressing social and strategic problem. A crucial national concern already exists in some areas; "Business as usual" means that the planet will miss significant margins in water-related SDGs; up to 40% of the world's population will live in severe water areas by 2035. Habitats will become increasingly affected by fresh water sources (Mahmoud, 2020).

Globally, scarcity of freshwater supplies is rapidly becoming an important factor in reducing regional growth and creating tension among regions with the same water resources. The safety and prosperity of a territory or country is essentially linked to the supply of refueling water supplies. Water is also a major contribution to economic development; water's value also grows as demand increases. The future looks miserable if Egypt fails to develop and introduce a

---

<sup>1</sup> "The Sustainable Development Goals (SDGs) as defined by undp.org, also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity."

management approach to water supplies, which will balance the small availability of freshwater to rising demand (Mahmoud, 2020).

In Ethiopia, where nearly 70 percent of rural people lacks energy, Great Ethiopian Renaissance Dam (GERD)<sup>2</sup> will increase domestic power greatly, enabling them to sell surplus electricity to neighbors. As construction started in 2011, Prime Minister Meles Zenawi promised that the project will be financed by Ethiopia itself by government loans, grants, fees, and a portion of public servants' salaries. It intended to drive growth and to help pull Ethiopia's people off poverty by the 6,000-megawatt GERD. For the Ethiopians, this mission was a source of national pride and a meeting place in the middle of recent domestic problems (Naik, 2016).

The prospects for upstream countries that monitor the flow of the river have become a matter of existence for Egypt that relies on the Nile for domestic hydropower, agriculture and most of its water needs. Egypt claims that after the dam is filled the flow to Egypt would be reduced to below traditional proportions. Egypt has been the primary winner for almost a century of diplomatic negotiations dividing shares of the waters of the Nile (Naik, 2016).

These negotiations had not been concluded in the upstream nations, as most of them were still imperial. The last pact, the Egypt-Sudan Nile Waters Agreement of 1959, split the river's average annual flow between the two nations. Approximately 85% of the water flowing into Egypt originates from the largest tributary of the Nile, the Blue Nile that comes from Ethiopia and merges with the White Nile in Sudan. Ethiopia was not and would not accept the 1959 agreement (Abdulrahman, 2019).

In 1999, in order to promote global collaboration in the area of Nile production, the Nile Basin countries, including Egypt, created a Nile Basin Initiative. Egypt and Sudan declined in 2010 to sign the Fair Water Allocation Deal, but they would not be covered for fear of their historical water rights. A year back, Ethiopia started building GERD. Since then, Ethiopia, Egypt and Sudan have been engaging in several GERD rounds and in 2015 there was the signing of a "Declaration of Principles" (Abdulrahman, 2019).

In the second section of this paper we are going to intricate more about the conflict between Egypt and Ethiopia in the historical framework, demonstrating the water crisis in different countries in descriptive literature review in the third section. In the fourth section we are going to assess and examine the effect of GERD on Egypt followed by impact of the problem on different Water Usages in Upper Egypt, then growing scarcity of water in Egypt and Sudan. Next, we are going to talk about the Law of International Watercourses and efforts towards achieving corporations in the conceptual framework. Lastly, recommendations have been made in this respect to help solve expected water problems and maximize the opportunities available.

---

<sup>2</sup> "The Grand Ethiopian Renaissance Dam (GERD), formerly known as the Millennium Dam, is under construction in the Benishangul-Gumuz region of Ethiopia, on the Blue Nile River, which is located about 40km east of Sudan. The project is owned by Ethiopian Electric Power Corporation (EPCO)."

## **HISTORICAL FRAMEWORK**

For decades there have been tensions and conflicts over the Nile River. Relations between the ten countries in the Nile Basin are regulated by a series of agreements and treaties concluded during the 20th century (1902, 1929 and 1959) generally referred to as the agreements on the Nile River. Their requirements include respect for the right of downstream countries (mainly Egypt and Sudan) to the water of the Nile by the upstream countries (inclusively Kenya, Tanzania, Uganda and Ethiopia) (Al-Anani, 2020).

Furthermore, without permission of the downstream countries, particularly Egypt, they are prohibited to construct dams or start construction projects on the river. Not only did the treaties ensure that Egypt shared Nile water during the last century and permit Egypt, especially after building a High Dam at the beginning of the 1960s, to achieve its developmental and agricultural plans, but they also empowered Khartoum and Cairo to veto any construction or scheme that could impact its shares of water (Al-Anani, 2020).

The upstream riparian states have still opposed and disputed these deals. Since the upstream riparian countries claim these arrangements are unfair, and that their agriculture and construction plans should be impeded by them. They are not bound by those agreements when they were signed and their states were not included in the agreements. They are not bound by those agreements. Due to the rapidly increasing communities in Nile River Basin over the last decades, their growth requirements have grown and conflicts and discrepancies have increased (Al-Anani, 2020).

In the last three decades, efforts to deal with the Nile River and to divide the water have not stopped. A consensus was reached in 1999 by the Nile River Basin Nations, the Nile Basin Initiative (NBI). All the countries with access to the Nile River were taken together to develop their trust and to use the river effectively and beneficially on all sides. Ethiopia proposals for the construction of the Great Ethiopian Renaissance Dam (GERD) date back to the 1960s, but for political and economic reasons they have been delayed (Mbaku, 2020).

Despite its vast water supply, the nation suffers from an absence of energy and underdevelopment. Ethiopia depends heavily on GERD with a population of 112 million to boost its economy and the lives of its peoples. Ethiopia has a severe electrical shortage; indeed, 65% are not connected to the grid (Mbaku, 2020).

Ethiopia will be "Africa's largest electricity exporter," completing and filling this dam. It would double the electricity capacitance of Ethiopia to generate up to \$1 trillion in energy exports annually to Sudan, South Sudan, Djibouti, Kenya and, perhaps, Egypt. The dam will secure energy for the power-hungry country, boost economic growth and carry money from foreign power sales. Addis Ababa also finds the GERD a sovereign national initiative that other countries should honor; it has been a national fantasy (Mbaku, 2020).

Under the 1959 Nile River Agreement, the share of Egypt is 55.5 milliards of cubic meters (bcm), about 85% of the water flowing through the Nile River comes into the Blue Nile from the Ethiopian highways; around 90% of Egypt's fresh water is from the river Nile, with about 57% of Ethiopia's blue Nile water constructing its dam. Egypt therefore regards the GERD as a threat to its existence. The GERD reservoir would contain approximately 74 bcm of water until

completed, equal to the annual total amount of Nile flowing into the Aswan-High Station in Egypt (Mohyeldeen, 2021).

Actually, the most significant threat to Egypt is water scarcity. It is worth noting, even without the GERD, that Egypt suffers from water shortages: the water supplies there are approximately 60 bcm and consumes 80 bcm. Egypt imports nearly half of its foodstuffs and recycles about 25 bcm of water each year. Egypt will threaten drought and loses more than 1 million employees and about \$1.8 billion in economic activity per year if the GERD were filled without an arrangement. Filling the GERD will therefore have a major impact on Egypt's water share – decreasing it by about 10-15 billion cubic meters (Mohyeldeen, 2021).

In six years, Ethiopia expects to fill the dam, the longer it takes to fill the dam, the less the already difficult supply of Nile water in Egypt will be affected. Egypt will, however, want Ethiopia to go on for 12-21 years, in particular so that river levels do not drop quickly, particularly in the beginning. Essential, Ethiopia's plan to arbitrarily fill up the storage reservoir at the earliest opportunity would be catastrophic for Sudan and Egypt, as it would absorb more than one year of the total Blue Nile flow, or around 54 bcm (Mutahi, 2020).

To fill the dam over a six-year period, if rains are on average and the dam is filled equally, 14 percent less Nile water will flow to Egypt over each year. In addition, while Addis Abeba wants to flood GERD to increase accumulation at the beginning of the rainy season in July, Cairo demands involvement, since the speed of water flow to Egypt would impact the downstream river transport; indeed, not only Egypt's new government, but also Egypt's state and culture are defining moments for the crisis over GERD. The Egyptians felt challenged at their very root of survival, Nile, for the first time in their history. It is therefore imperative to find a compromise which can protect and alleviate the concerns of millions of Egyptians (AUC, n.d.).

In April 2011, when the GERD project was initiated in Ethiopia, Egypt and Sudan did not meet with Ethiopia, stating that it was an open case for Ethiopian sovereignty. It is well known by the Egyptian authorities that the Blue Nile on whose riverbank the GERD was found, is the principal source of the Nile and provides a lot of water on which the land is so heavily dependent. Thus, Addis Ababa's behavior in Cairo sparked warning bells. Ethiopia stopped making an ESIA of the Dam (environmental and social impact assessment) that is needed under international law for such a project, to make matters worse. This is necessary for Ethiopia to do so (Ottaway, 2020). Their discrepancies appeared to be resolved by Egypt, Ethiopia, and Sudan in February 2020. In Washington, D.C.'s former president of US and the World Bank, the latest of ten rounds have been held for five years. An idea was born out of this negotiation marathon. However, Ethiopia supported fears when it signed that their terms would violate the sovereignty of the region (Ottaway, 2020).

### **LITERATURE REVIEW**

In 17 countries or a quarter of the world's population about 1.8 billion people seem to be heading towards a water crisis – with the possibility for serious shortages over the next few years. The Middle East and North Africa have Twelve out of seventeen countries. In Asia there are two nations, India and Pakistan. The rest of the hotspots are in Europe San Marino, in Africa Botswana and in central Asia Turkmenistan (Dormido, 2019).

While the area of Middle East and North Africa has a heat and water supply that can be poor at first, increasing demand has put severe stress on countries. Qatar is heavily dependent on desalination systems for the provision of water for residents and factories, the most at risk because of water shortages (Hofste, Reig, & Schleifer, 2019).

In the southern Indian city of Chennai, home to 7.1 million inhabitants, the economic effect of serious water shortages was high earlier this year. Heat waves and a pause during the summer saw several freshwater lakes in Chennai dry and triggered demonstrations and violent activity as well as business disruption (Hofste, Reig, & Schleifer, 2019).

Countries that are highly stressful with water use up to 80 per cent of the surface and groundwater supply that is usable in a typical year and, even minor dry shocks, which are ready to rise as a result (Dormido, 2019).

India, ranked 13th in the high-water-risk ranking, has more than threefold combined population of the remaining 16 countries in this group. India's dilemma is not separate from the countries of the South. Northern India is now facing extreme loss of groundwater according to the analysis by the aqueduct that now requires the measurement of groundwater (Dormido, 2019).

Sudan is confronted with environmental problems, such as water shortage and desertification. Rural Sudanese people are frequently displaced by shifting environments and lack of farm productivity. Water demand is increasing, but the supply of water to the population of the world remains constantly limited. Water access is essential, as much of the country of Sudan has been ignored (Barton, n.d.)

Sudan's livelihood relies on its surplus water consumption. 80% of the nation works in farming, accounting for 97% of the consumption of water. Most farms are rural and are supplied with rainwater. They provide for a family or a small group and make them the majority of Sudanese livelihood. However, the climate is hurt by their agricultural activity. A large part of the land of Sudan is exploited by mechanical agriculture. This intensive farming scheme has diminished arable soils, and desertification has expanded according to the United Nations Environment Programme. The arid climate spread through Sudan is caused by irrigation used for the supply of mechanized farms and intensive rural Sudanese cultivation (Tomlinson, 2013).

Women and children should spend much of their time collecting water from much farther sources. By traveling regular to a far country away from home they lose their safety and health. Women are now losing productivity because of other household tasks. In Sudan about 2% of the water is domestically accessible (In the United States, water for domestic use accounts for 13 percent of total supply) (Tomlinson, 2013).

The majority of the Sudanese underground water actually available to neighboring countries is shared. Sudan uses part of the Nile River Basin but the Government does not restrict or preserve its use. This unconditional use for irrigation and energy of shared water causes friction with neighboring countries such as Egypt and Ethiopia. The UNEP (United Nations Environment Program) uses the word water stress to denote the existence of political or economic issues

arising from water shortage. This issue affects approximately a quarter in the people of Africa. Sudan is experiencing a serious water stress situation (Barton, n.d.).

Sudanese people are at great risk for waterborne diseases. In 2006 just five months of diarrhea resulted in 476 deaths and in stools of cholera-causing bacteria; similarly, from May to August 2004, 3753 hepatitis E cases were recorded in Darfur. Dracunculiasis or Guinea Worm Disease may also be caused by contaminated drinking water. A single infected person will quickly influence a water supply to a village, which damages the whole city. Three of five cases was from Sudan of Guinea Worm Disease. Open water bodies are common for transmitting pathogens to villages, such as standing ponds (Barton, n.d.).

The Sudanese have been left to fight for life in the field of the climate. The nation struggles to provide all areas with safe, affordable water.

In recent years, Egypt has suffered from severe water shortages. Ineffective irrigation and uneven water distribution, abuse of water supplies, are some of the biggest factors in the country's stability. Egypt only has 20 cubic meters of internal sustainable freshwater supplies per person, which means that the country is heavily dependent on the Nile for its primary water supply. The Nile River is the backbone of the manufacturing and farming sectors of Egypt and the only drinking water supply for the populace (Dakkak, 2020).

The country's water access is declining as a result of rising populations and rapid industrial growth in the Nile Basin countries as well as deforestation and environmental degradation. A water shortage of around 7 trillion meters is facing Egypt last year. In reality, the UN is already telling Egypt that by 2025 it could run out of water (Dakkak, 2020).

Problems with water supply in Egypt quickly became troubling. Water scarcity could threaten stability and regional domination with its loosening hold on the Nile. It is essential for Egypt's government and the whole community to move quickly and decisively to reduce water shortages and establish strategies for more effective irrigation technologies to apply water management techniques and water pollution control (Dakkak, 2020).

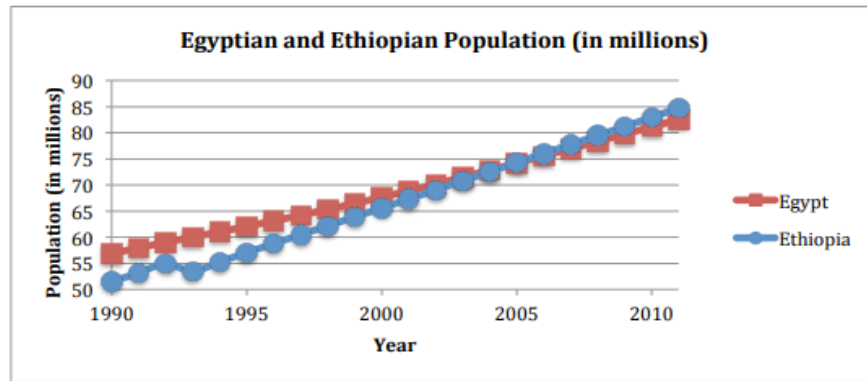
In the MENA region, Egypt can no longer allow itself to ignore the value of water protection because of the predicted climate conditions and thermo waves, which are expected to increase (Dakkak, 2020).

## CONCEPTUAL ANALYSIS

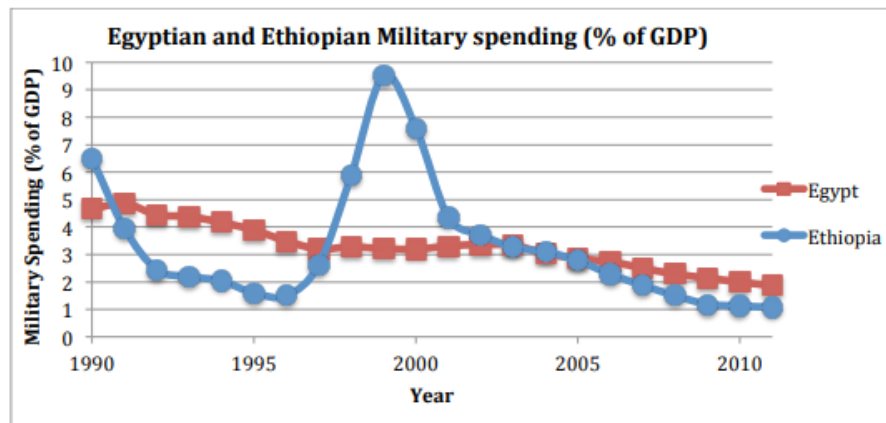
### Comparing Economic Powers

According to figure 1 below, in the whole era of interest, the population of both nations has been nearly the same. In the 1990's Egypt was somewhat ahead of it but in 2005 Ethiopia caught up. For the years 1990-2011, the military expenditure was more unequal. In Ethiopia's military expenditures in the early 90s, as seen in Figure 2 below, they decreased rather rapidly. The collapse of Major Mengistu Haile Mariam and his government may have caused this. However, Ethiopia is seeing a large increase (over 9 percent of total GDP) in military expenditures starting in the late 90s and ending at the beginning of the 2000s. There is a continuing drop in Egyptian military budget, which has not topped 5 percent. The figures for this one variable may thus suggest that there is a military advantage in Ethiopia. However, military expenditure is

reflected in the GDP percentage. It shows that Egypt spent far longer on its military forces through the whole of the relevant period independent of percentages than in Ethiopia. The GDP is notably higher than that of Ethiopia. Total number of armed forces is the biggest asymmetric military power. Egypt had many hundred thousand soldiers over Ethiopia over the years 1990-2011 (Rosberg, 2014).

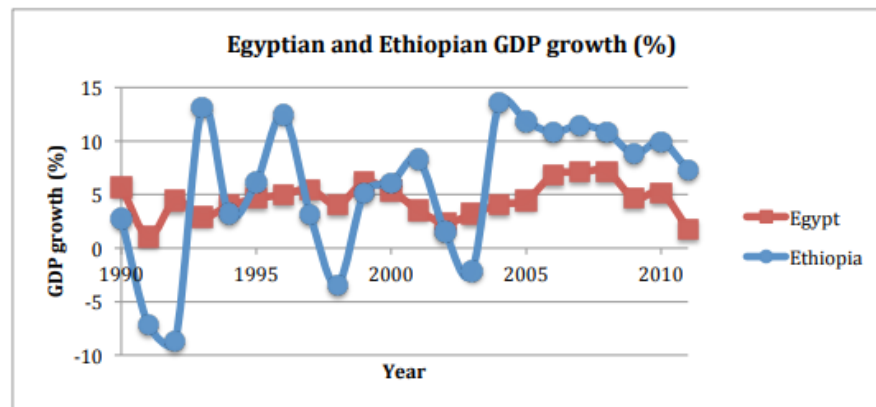


**Figure 1: The Egyptian and Ethiopian Population 1990-2010:**  
Source: Rosberg (2014)



**Figure 2: The Egyptian and Ethiopian Military spending (% of GDP) 1990-2010:**  
Source: Rosberg (2014)

In both real GDP and per capita GDP, Egypt enjoyed a distinct lead throughout the year. The average Egyptian real GDP is seven times more in this period than the Ethiopian average. GDP of Egypt is nearly five times per capita, calculated in PPP\$. Ethiopia has at times seen more GDP growth than Egypt, according to Figure 3. However, over the 1990s and into the early 2000s this growth had endured rather considerable oscillations, until it seemed to stabilize. The growth of Egypt has been significantly more constant through the whole time. Since 2009, both nations have had some growth slowdown, maybe owing to a worldwide recession and a financial crisis (Rosberg, 2014).



**Figure 3: The Egyptian and Ethiopian GDP growth (%) 1990-2010:**

### **Ethiopia 'the great unknown'**

During the first years of this century, Ethiopia's key political problems have been attempted to attain food security and enhance rural lives. For many years to come, Ethiopia remains a farmer's society whose economy depends on agriculture sector success. Irrigation and hydroelectric power developments are necessary to boost food production and provide more of the population with electricity, but growth is restricted by a lack of investment and limitations imposed through geographical characteristics, highly eroding soils and the prevalence of malaria, trypanosomiasis and other diseases at levels below 1500 meters. The lack of irrigation development, government interference in the market of inputs and outputs, and the lack of infrastructure have restricted agricultural progress in Ethiopia (Wicheln et al., 2003).

The country is of course also intensely concerned with every effort to disrupt the flow of the Nile. Ethiopia is frequently called "the great unknown region" even though Khartoum continues to make reference, on duty on the part of Sudan, for Blue Nile, Sobat and Tana Lake between the Empire of Ethiopia and the British Government, with regard to Egypt or Sudan, to the provisions of the Treaty in sharing its wide river water (Mahmoud, 2020).

While the extensive deforestation and soil degradation have reduced production, in Ethiopia, more than 80 percent of the population lives on highlands, which make up 40 percent of Ethiopia and represent the percentage of cattle and rain-fed land. Ethiopia today's leaders have great worries about food production's autonomy and are certainly not willing to repeat famines of the 1970's or 1980's, but only an estimated 90,000 hectares of irrigated land were reported to grow in the early 1990's as below the percentage that could be generated in the future. In the report produced by the technical experts of the nation for the First Nile Conference in Aswan in 1993, the viewpoint of the Transitional Regime led by the Revolutionary Democratic Front of Ethiopia (EPRDF) was apparent (Swain, 1997).

Ethiopia's need to build a Renaissance Dam was explained on numerous factors, including; starvation suffered by Ethiopia, particularly in areas of continuous drought and rising poverty rates. In addition to the reduction of the forest removal to search for fuel and charcoal, and the alternative energy notably for impoverished households, the dam project works to prevent agricultural land degradation that leads to soil erosion. The project provides other advantages, such as lowering water losses due to evaporation (Swain, 1997).

### **EGYPT'S SECURITY APPROACH TO THE NILE**

Egypt has turned the Nile into a security issue, and has taken steps to assure its normal flow during this process. Those provisions are mostly included in the efforts to safeguard the agreements of 1929 and 1959. These agreements were feasible since the Colonial Power. Great Britain favored Egypt over other riparian countries since Great Britain and British imperial strategy preferred Egypt as a major agricultural source. In 1957, in its own territory, Ethiopia notified Egypt of the unilateral development of Nile water resources (Abdulrahman, 2019).

It was asserted that, the international agreements of fair distribution were to be respected and that the projects constructed in the downstream nations should not be harmful to other rivers. Previously, Ethiopia and other nations on the Nile were impoverished economically and politically unstable, had little resources to invest in significant projects, and could not attract foreign investors as they were unstable. They were often unable to construct big developments, thus Egypt had its share; however, the situation has changed and it is improbable that Egypt would protect its share of the Nile Waters now and in the future by employing military strength (Abdulrahman, 2019).

Ethiopia was threatened by war by the former Egyptian President Anwar ElSadat in 1979. "The Egyptians' lives are interconnected in the Nile," he quoted. If it decreases by one drop, the alternative is blood." The former president also referred to the problem of reducing the Nile to life and death, a clear indication of security about the existential danger and the survival of the referent subject. In the rhetoric of terror and war towards Ethiopia, the President was not alone. The eighties were a threat to the use of force by the former President of Egypt Hosni Mubark at that time also. He mentioned that "There will be no choice but to use violence if Ethiopia takes any step to restrict our entitlement to Nile River. Hampering a nation's access to water has a negative effect on its lives, and the world community has no doubt about the choice to go to war at this point (Mkabu, 2020).

### **IMPACT OF THE PROBLEM ON DIFFERENT WATER USAGES IN UPPER EGYPT**

Egypt is among the 10 countries who due to the fast rising population, are at risk of water need by 2025. In Egypt, conventional water supplies are confined to the Nile River, the Delta, the West Desert and Sinai, and precipitation and flash floods. The Nile River, which comes from beyond Egypt and supports eleven nations, supplies more than 96% of global freshwater resources. The agreement between Sudan and Egypt since 1959 limits fresh water sources from the Nile for Egypt. Egypt was granted 55.5 trillion cubic meters of Nile water each year by this deal, with BCM allocated to Sudan 18.5. During the flood period from August to December, most of the main Nile water flows from the Ethiopian Blue Nile and Atbara were a round 86 percent of the Nile water supply to Ethiopia's tributaries (Mutahi, 2020).

GERD's implications on irrigation and industrial pumping plants have been investigated. Data were obtained from the Nile Research Institute (NRI) and analyzed for irrigation and industrial pump stations and then the minimum levels of water in each situation are compared with the critical intake levels for different irrigation stations and industrial pump stations for checking their safety function. These data revealed that 33 vertical intake pump stations with 35 floating intakes were in the initial reach. On the second reach, 15 vertically absorbed stations and 3 floating intake stations, on the third, just 5 upright stations and none with floating intake (Abdelhaleem & Helal, 2015).

GERD's influence on farmland has been identified. Prior researches showed that Upper Egypt has water resources and demands. It was clear that Upper Egypt is currently supplying water at BCM 12.69 per year, of which BCM 12.17 are provided by the Nile River and so becoming an almost exclusive fresh water source for Upper Egypt. A renewable groundwater with 0.46 BCM/year and a re-use of drainage water estimated at 0.07 BCM satisfy the other water requirements. In terms of water demand for agriculture about BCM 11,81, municipal water BCM 0.78 and industry BCM 0.11. The GERD construction will lead to reducing the water share of Egypt by over 15% and will have superficial consequences for potable water stations (Abdelhaleem & Helal, 2015).

### **GROWING SCARCITY OF WATER IN EGYPT AND SUDAN**

Egypt is facing water crisis and is worried that things can develop worse as Ethiopia prepares to fill the reservoir behind a huge project. The USA had meetings with their colleagues in Nile-user Sudan in 2019 to attempt a resumption of stalled conversations on the hydroelectric power project. The U.S. former president claimed he had met Egyptian, Ethiopian and Sudanese authorities to discuss the situation. But even if Washington succeeds, Egypt would still have bigger challenges of water that make it struggle to sustain food production, where years of trilateral agreements have failed. Egyptian officials said that they have about 570 cubic meters (150,000 gallon) per person per annum. Water shortages in Egypt are seen by hydrologists to fall to 1,000 cubic meter per person annually (Ebrahim, 2019).

It is anticipated that by 2025, Egypt would sink to 500 cubic meters. That does not take into account the effects of Egypt's Renaissance Dam which, though Ethiopia maintains it has taken into account both Egypt's and the Sudan's demands, warns it would further decrease water levels (Ebrahim, 2019).

There has been little discussions of the actual clash between the Nile countries, but Egypt views the project as a life danger, which could devastate agriculture and harm electricity. More than 80 percent of its water is utilized in agriculture, but Cairo imports approximately half the food already by shortages, and is the leading importer of wheat worldwide. The government urgently calls on farmers to utilize more effective irrigation and plant seedlings that demand less water for shorter life. It tries to recycle more water as well. But not everybody has attained water management and irrigation programs (Ebrahim, 2019).

Another concern is posed by climate change. With increasing temperatures, Egypt would, according to the UN World Food Program, lose 30 per cent of its food output in the south by 2040. The agricultural yield has already been decreased by heatwaves and the locals in Fayoum report that for years the temperature has grown, requiring farmers to spare more acreage with more water. In upstream countries, the effect of climate change is questionable (Ebrahim, 2019).

Sudan is one of ten countries that have their biggest and only true supply of water on the Nile River. The temperatures of Sudan, floods, unpredictability of precipitation and concomitant droughts increased, in a nation with a predominantly rain-fed agriculture, healthy soils, vegetation and bodies of water are greatly decreasing (Mark, 2019).

Droughts and higher temperatures have affected the Nile River. The exploitation of the river by ten other nations is poor enough, but it is worsening as scientists and experts detect a reduction in water levels and are afraid, if in time, the river can maintain the country (Mark, 2019).

Floods are the major contributors to illness and water pollution spread over several areas. Moreover, as the majority of the settlements in Sudan are undeveloped, inhabitants often have to go swimming, driving, walking, or even camping inside unclean waters (Mark, 2019).

### **THE LAW OF INTERNATIONAL WATERCOURSES**

The Convention must be based on the key principles of fair and reasonable use and involvement of the riparian rivers and on the obligation that other States with a water supply are not considerably harmful. Articles 5 and 7 of the Convention reflect these concepts. Article 5 specifies that the international water course should be fairly and reasonably used, developed and protected, and that they shall be instructed to utilize and develop the International Water Course in order to achieve and profit from an optimal and sustainable usage. Article 7 imposes on the nations that the other States sharing an international watercourse take all reasonable actions to prevent the causing of substantive harm (Abebe, 2014).

Egypt would probably provide various reasons under international law to support its argument that the Nile and its resources have a virtually exclusive right to exploit it. The probable claim of Egypt extends to every ribbon state along the Nile. First Egypt would say that Ethiopia is preventing the development of the Dam Project from the signing of a 1902 Treaty between Britain and Ethiopia, in which Ethiopia appears to reject the Nile rights and agrees that no steps would be used to limit the water supply of the Nile in Egypt. The Egyptian doctrine of appropriation, related to a philosophy of earlier or historical usage, is also likely to subscribe. Egypt finally claims that, though these Governments were not formally signatories to agreements, the 1929-1959 Egyptian and Sudan Treaties intended to manage the Nile's usage apply to the nine other riverbank states (Abebe, 2014).

It is not unexpected that Ethiopia will probably deny the legitimacy of the contract with Great Britain of 1902, arguing that its decisions to utilize the Nile water resources and build the dam project are supported by Article 5 of the Convention and the Harmon Doctrine. It is probable Ethiopia will argue that the Treaty of 1902 did not regulate it since Ethiopia formally did not ratify it and, although it was approved, it had various and competing interpretations in the English and Amharic versions of the Treaty with respect to the usage of the Nile. Ethiopia would also be entitled to develop and use the water resources of the Nile in its territory, without condition and exclusively. Using the Harmony Doctrine, Ethiopia would claim that it has a right to the no impeded exploitation of water resources within the area of the Nile, with jurisdiction over natural resources in a sovereign's territory being exclusive and absolute (Abebe, 2014).

At the Security Council Video Conference of 29 June, Deputy Secretary General for Policies and Peace-building Affairs said that an agreement on the Grand Renaissance Dam in Ethiopia with the UN is in the pipeline to promote discussions and the process led by the African Union to resolve the other differences. The agreement was reached by the UN. The US diplomat said that she understood the importance of the Nile River as a facilitator and observer to the negotiations of an agreement for the history of Egypt, Ethiopia and Sudan. Indeed, the Dam has a unique capacity to affect generations of rain, droughts, desertification and economic

underdevelopment in this part of Africa. The arrangement can alter a population of over 250 million with advantages such as improved food security and greater access to power (UN, 2020).

### CONCLUSION AND RECOMMENDATIONS

Development relations between Egypt and Ethiopia are always tied to Nile Water Dispute, a struggle that has lasted for years and always took the form of a political relationship. Both states trade accusations while Ethiopia considers that it has the right, without considering Egypt's damage, to exploit the Nile sources in the way that it sees fit, especially as Ethiopia is an upstream nation. Egypt contends, however, that its right to provide its people with water and prevent harm caused by dams on the Upper Nile are infringed as the downstream country.

Improved ties between Egyptians, Ethiopians and Sudanese can make them more able to negotiate and accept accords, in particular with regard to economic growth and poverty reduction, which reflect the interests of the countries and interests of the people. For example, if they interact regularly with each other and participate in more deep, bottom-up and inclusive conflict resolution strategies, Ethiopians and Egyptians are more likely to understand and appreciate the problems they face, especially in the areas of water management, resource depletion, food production and the poverty alleviation. The solution of the water-related disputes, which now pose the danger to peace and security in the Nile Basin, must include individuals and governments alike (Hussein, 2014).

In addition, it is most likely by improving ties amongst riparian's rather than by foreign interference that the Nile River problem may be resolved more successfully. Egypt should thus decrease travel to Washington, D.C., New York and Brussels by using the diplomatic means it uses instead to develop its ties with other countries on the River. Egyptian authorities already called on the UNSC to act on 19 June 2020 following tripartite negotiations, following the failure to obtain the Filling Schedule for GERD agreement for that purpose. Egypt has requested the UNSC to 'push the three nations, in line with the principles of international law, to comply with their duties, in order to seek a fair and equitable solution to the GERD question.' Repetitive references to international law rules in Egypt are an effort to uphold its 'archaeological and cultural rights' as identified and asserted respectively by the Treaty between England and Egypt in 1929 and by the Agreement among Egypt and Sudan in 1959, which many of the other parties to the agreement reject as anachronistic and unsustainable (Mbaku, 2020).

### References

- Abdelhaleem, F., & Helal, E. (2015). Impacts of Grand ETHIOPIAN Renaissance dam on different WATER usages in Upper Egypt. *British Journal of Applied Science & Technology*, 8(5), 461-483.
- Abdulrahman, S. (2019). The River Nile and Ethiopia's Grand Renaissance Dam: Challenges to Egypt's security approach. *International Journal of Environmental Studie*.
- Abebe, D. (2014). Egypt, Ethiopia, and the Nile: The Economics of International Water Law. *Chicago Journal of International Law*. Retrieved from [https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1944&context=public\\_law\\_and\\_legal\\_theory](https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1944&context=public_law_and_legal_theory)
- Al-Anani, K. (2020). Water conflict Between Egypt And ETHIOPIA: A defining moment for both countries. Retrieved May 07, 2021, from [http://arabcenterdc.org/policy\\_analyses/water-conflict-between-egypt-and-ethiopia-a-defining-moment-for-both-countries/](http://arabcenterdc.org/policy_analyses/water-conflict-between-egypt-and-ethiopia-a-defining-moment-for-both-countries/)

AUC. (n.d.). Egypt and the ETHIOPIAN Renaissance Dam. Retrieved May 07, 2021, from <https://www.aucegypt.edu/news/stories/egypt-and-ethiopian-renaissance-dam>

Barton, A. (n.d.). Water in crisis - Spotlight SUDAN. Retrieved from <https://thewaterproject.org/water-crisis/water-in-crisis-sudan#:~:text=Sudan%20faces%20ecological%20crises%20like,a%20lack%20of%20agricultural%20production.&text=Eighty%20percent%20of%20the%20country,rural%20and%20fed%20by%20rainwater>

Dakkak, A. (2020, August 26). Water crisis in Egypt. Retrieved from <https://www.ecomena.org/egypt-water/#:~:text=Egypt's%20Water%20Crisis%20and%20Degeneration,threshold%20for%20absolute%20water%20scarcity.>

Dormido, H. (2019, August 06). These Countries Are the Most at Risk From a Water Crisis. Retrieved from <https://www.bloomberg.com/graphics/2019-countries-facing-water-crisis/>

Ebrahim, N. (2019, November 07). This is the water crisis that Egypt is facing. Retrieved from <https://www.weforum.org/agenda/2019/11/water-crisis-builds-in-egypt-as-dam-talks-falter-temperatures-rise/>

Hofste, R., Reig, P., & Schleifer, L. (2019, August 06). 17 countries, home to one-quarter of the world's Population, face extremely high water stress. Retrieved May 07, 2021, from <https://www.wri.org/insights/17-countries-home-one-quarter-worlds-population-face-extremely-high-water-stress>

Hussein, W. (2014). Economic cooperation between EGYPT, Ethiopia on the rise. Retrieved from <https://www.al-monitor.com/originals/2014/07/egypt-ethiopia-coordination-continue-renaissance-dam-dispute.html>

Mahmoud, S. (2020). The Impact of Renaissance Dam on the Agriculture Sector in Egypt and Ethiopia. *Athens Journal of Mediterranean Studies*, 6, 215-236.

Mark, A. K. (2019, October 10). Sudan water crisis. Retrieved from <https://storymaps.arcgis.com/stories/60088f40ca654e48b22ef9df3a45060e>

Mbaku, J. (2020, August 05). The controversy over the grand ethiopian renaissance dam. Retrieved May 07, 2021, from <https://www.brookings.edu/blog/africa-in-focus/2020/08/05/the-controversy-over-the-grand-ethiopian-renaissance-dam/>

Mohyeldeen, S. (2021). The dam that broke open An Ethiopia-Egypt dispute. Retrieved May 07, 2021, from <https://carnegie-mec.org/2021/02/12/dam-that-broke-open-ethiopia-egypt-dispute-pub-83867>

Mutahi, B. (2020, January 13). Egypt-Ethiopia row: The trouble over a Giant NILE DAM. Retrieved May 07, 2021, from <https://www.bbc.com/news/world-africa-50328647>

Naik, P. (2016). Water crisis in Africa: Myth or reality? *International Journal of Water Resources Development*.

Ottaway, M. (2020). Egypt and Ethiopia: The curse of the Nile. Retrieved May 07, 2021, from <https://www.wilsoncenter.org/article/egypt-and-ethiopia-curse-nile>

Rosberg, A. (2014). Egypt, Ethiopia, and the Nile Understanding: Egypt's Refusal to Renegotiate the 1929 and 1959 Agreements Concerning Rights and Allocations of the Nile. *University of Oslo*. Retrieved from [https://www.duo.uio.no/bitstream/handle/10852/40296/Rsberg\\_Master.pdf?sequence=7](https://www.duo.uio.no/bitstream/handle/10852/40296/Rsberg_Master.pdf?sequence=7)

Swain, A. (1997). Ethiopia, the Sudan, and Egypt: The Nile River Dispute. *The Journal of Modern African Studies*, 35(4), 675-694.

Tomlinson, W. (2013, February 20). Sudan's environmental issues. Retrieved from [https://www.ics.uci.edu/~wmt/courses/ICS5\\_W13/Sudan.html](https://www.ics.uci.edu/~wmt/courses/ICS5_W13/Sudan.html)

UN. (2020). Grand Ethiopian Renaissance dam agreement within Reach, under-secretary-general Tells Security council, as Trilateral Talks proceed to SETTLE remaining differences | Meetings coverage and press releases. Retrieved May 27, 2021, from <https://www.un.org/press/en/2020/sc14232.doc.htm>

Wichelns, D., Barry, J., Muller, M., Nakao, M., Philo, L., & Zitello, A. (2003). Co-operation regarding water and other resources will enhance economic development in Egypt, Sudan, Ethiopia and Eritrea. *International Journal of Water Resources Development*, 19(4), 535-552.