

**THE ESTABLISHMENT OF THE GRAND ETHIOPIAN RENAISSANCE
DAM (GERD) AND THE STRUCTURAL VIOLENCE ON IMPACTING
ENVIRONMENT OF EGYPT 2018-2021
UNDERGRADUATE THESIS**



**UNIVERSITAS
ISLAM
INDONESIA**

Written by:

ADILFALAH ABDURRAHIM

18323203

**DEPARTMENT OF INTERNATIONAL RELATIONS
FACULTY OF PSYCHOLOGY AND SOCIO-CULTURAL SCIENCES
UNIVERSITAS ISLAM INDONESIA**

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Proposed to the Department of International Relations
Faculty of Psychology and Socio-Cultural Sciences

Universitas Islam Indonesia

As a partial fulfillment of requirement to earn

Bachelor Degree in International Relations



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AUTHORIZATION PAGE

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Defended in front of the Board of Examiners
in the Department of International Relations
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Department of International Relations
Faculty of Psychology and Socio-Cultural Sciences
Universitas Islam Indonesia

Head of Department



Karina
Karina Utami Dewi, S.I.P., M.A.

Board of Examiners

Signature

1 Masitoh Nur Rohma, S.Hub.Int., M.A.

Masitoh

2 Karina Utami Dewi, S.I.P., M.A.

Karina

3 Wahyu Arif Raharjo, S.I.P., M.I.R.

Wahyu

STATEMENT OF ACADEMIC INTEGRITY

I hereby declare that this undergraduate thesis is the result of my own independent scientific work, and that all material from the work of others (in books, articles, essays, dissertations, and on the internet) has been stated, and quotations and paraphrases are clearly indicated.

No other materials have been used other than those mentioned. I have read and understood the university's rules and procedures regarding plagiarism.

Making false statements is considered a violation of academic integrity.

23, December 2022



Adilfalah Abdurrahim

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LIST OF ABBREVIATIONS

LIC	: Low Intensity Conflict
GERD	: Grand Ethiopian Renaissance Dam
GDP	: Gross Domestic Product
UNDP	: United Nations Development Programme
CFA	: Cooperative Framework Agreement
DOP	: Declaration of Principles
GWH	: Gigawatt Hours
ETP	: Energy Target Policy
AHD	: Aswan High Dam
FAO	: Food and Agriculture Organization of the United Nations
AU	: African Union

ABSTRACT

The countries in the Middle East are countries that are surrounded by deserts, which certainly has an impact on the scarcity of water resources. The Nile River, as one of the streams that feeds several countries in the Middle East, is also currently in conflict due to the unequal distribution of water supply. As a result, Ethiopia initiated the building of a Grand dam in May 2010 and 5 upstream countries signed a Cooperative Framework Agreement which was named the Grand Ethiopian Renaissance Dam. This dam can accommodate 74 bcm. The GERD will also be the largest hydropower plant in Africa and one of the largest in the world. However, in its construction, there have been negative impacts on downstream countries, one of which is Egypt. This study discusses how the establishment of the GERD (Grand Ethiopian Renaissance Dam) caused structural violence on environment of Egypt using concept of structural violence by Johan Galtung. Through this theory, the researcher observed how the establishment of the GERD which was initiated by Ethiopia, how Ethiopia accidentally harmed Egypt's environment and is latently reducing the quality of the water that flows in to Egypt and also decreasing the quantity of water, which can lead to water scarcity for the Egyptian people. In addition, it can also have an impact on the desertification of agricultural land in Egypt due to the declining quality and quantity of incoming water. It is also predicted that climate change will cause an increase in average temperature by 1.8 to 3.6 degrees Celsius in the next few years.

Keywords: Middle East, GERD, Environment, Structural violence, Hydropower, Water scarcity.

CHAPTER I

INTRODUCTION

1.1 Background

The human need for water in the Middle East is increasing every year due to the increasing population as well as the enhanced production of the agricultural sector. Geographically, the countries in the Middle East are countries that are surrounded by deserts, which will certainly have an impact on the scarcity of water resources (*Grand Designs North Africa*, 2014), especially clean water needed to meet the daily needs of the country, both for human life and the life of other creatures. Water scarcity often causes conflicts in the Middle East, such as the case of the dam construction carried out by Ethiopia along the Nile River (Bulloch & Darwish, 1993). Another cause of conflict in the Middle East has been the injustice in water distribution that can be seen from the conflict that occurred between Ethiopia and Egypt regarding the Nile River. This conflict heated up in 2011 when Ethiopia started building a huge dam on the Nile River, provoking a response from Egypt.

The Nile River, the longest river in the world with a length of 6,650 kilometres, has long been a source of political tension and low-intensity conflict (LIC) between two main riparian countries, namely Egypt and Ethiopia. Through a historical treaty in 1929, Great Britain granted Egypt the absolute right to the status quo to exploit the Nile Valley exclusively for thousands of years. This colonial agreement also gave Egypt veto power over all projects by countries upstream of the Nile that would affect Egypt's water availability (Mutahi, 2020).

This of course means that Ethiopia, which is fed by 86% of the water in the Nile from the Blue Nile Tributary, can only enjoy a few percent of the remaining river water (Swain, 1997). As a country plagued by poverty that is still struggling to fight a severe drought, Ethiopia certainly thinks that the agreement is irrelevant and very detrimental. As a result, in 2011, the Prime Minister of Ethiopia, Meles Zenawi, finally challenged the right of historical water access through the construction of a colossal dam called the Grand Ethiopian Renaissance Dam (GERD). The GERD will store a maximum of 74 billion cubic meters of water, corresponding to approximately the average annual outflow of the Nile from the Aswan high dam. Undoubtedly, the GERD will be vital for energy production and a key factor for food production, economic development, and poverty reduction in Ethiopia and the Nile Basin (Taufik, 2015).

The Grand Ethiopian Renaissance Dam (GERD) is Africa's largest hydroelectric project and the 10th largest in the world. This is a \$5 billion project that was expected to increase the country's hydroelectric capacity fivefold by 2018 (Salman, 2016). The GERD development project has certainly caused polemics. Egypt's then president, Mohamed Morsi, thought the dam would drastically reduce water availability in Egypt. The Nile River provides great potential for the Egyptian economy; about 94% of Egypt's water needs come from the Nile River, because this country has no other alternative for providing its water resources (El Behairy, 2013). Of the 94%, a lot is used for the livelihoods of its people, including as a source of water for drinking, cooking, and bathing. Nile river water is also used as a means of trade transportation for anyone wanting to sell their products to a surrounding country. Furthermore, it is proven that the results of the

Nile River floods are what preserves the fertility of Egyptian soil and makes it easier for farmers to grow crops and find sources of life in the agricultural sector (Walsh et al., 2020).

The existence of various negative impacts in the construction of the dam made the Egyptian government take a stand on this issue. Initially, the country with the largest military power and GDP of the countries on the banks of the Nile, Egypt, which had always felt superior to Ethiopia, continued to fight both internally and externally (Yihdego et al., 2016). This hard line diplomacy carried out by the Egyptian government made Ethiopia even more enthusiastic about dam building and they were not concerned about the threat posed by the Egyptian government at all (Mbaku, 2020). In the filling of the dam, 11 to 19 billion cubic meters of water per year can be lost that should flow to the Egyptian people and this can cause the failure of millions of farmers' harvests during the period of filling the dam. Moreover, the water supply to the Egyptian people is limited and considering the flow of the Nile River is the only source of water for the Egyptians, Egypt must respond appropriately.

Because the Nile will always be their primary source of water, there is a strong possibility that many Egyptians will have normal activities disrupted as a result of filling the GERD. This is a serious threat to Egyptians. The Egyptian government is currently very concerned with establishing diplomatic relations better off with Ethiopia. This is, of course, because by improving diplomatic relations, both countries will benefit. If this fails, however, it could cause the Egyptian state to fail to provide human security, meaning that the government is the actor who violates human security because it is unable to provide human

security (UNDP, 1994). In this case then, the development of the GERD may cause the Egyptian government to fail to provide a human security component, because there is a damage on environment of Egypt due to the establishment of the GERD. As a result of a decrease in water supply reaching downstream countries which in turn causes structural violence and can result in the Egyptians experiencing periods of water scarcity. The government is not only causing its people to suffer, but also their environment. Due to excessive extraction and use of natural resources, there is a risk of environmental degradation, a reduction in carrying capacity, and a drop in environmental quality.

1.2 Research Question

How has the establishment of the GERD (Grand Ethiopian Renaissance Dam) caused structural violence towards environment and the Egyptian?

1.3 Research Objectives

1. To find out the negative impacts from the perspective of the Egyptian government arising from the development of the GERD.
2. To analyse the factors that threaten the interests of the Egyptian people from the establishment of the GERD.
3. To explain the environmental damage caused by the establishment of the GERD.

1.4 Research Scope

The focus that the author intends to convey in this study is the possibility of a violence on the environment of Egypt and the Egyptian people, which can be

viewed through structural violence. With the stipulation of the GERD, the welfare of the Egyptian people is clearly threatened by the process of making and filling dams in 2018-2021, particularly by the effect of the damage on the environment which later can be experienced by the Egyptians due to the establishment of GERD.

1.5 Literature Review

Discussion of water disputes that exist in the Middle East, especially those caused by the flow of the Nile River, has led to many perspectives from academics who highlight and focus on the dynamics of hydro-politics in the Nile River. This, coupled with the rise of Ethiopia in the 20th century trying to oppose the status quo possessed by the downstream Egypt, has made Ethiopia a central figure in the fight against Egyptian hegemony over the flow of the Nile River. This literature review describes several previous studies to provide a description of the significance of the research topic.

As described in the book *“Ethiopia's Grand Renaissance Dam: Ending Africa's Oldest Geopolitical Rivalry?”*, the GERD actually has the potential to provide mutual benefits to both Ethiopia and Egypt. However, promises of mutual benefits have so far failed to initiate cooperation between these parties. This is somewhat understandable given that Egypt's stance is a consequence of security imperatives arising from external actors being able to gain control over resources essential to national survival. In addition, the Nile is part of the history and identity of Egypt, where Egypt still believes that, historically, the Nile will forever be owned by Egypt. However, once that happens, the reasons for making

decisions are likely to change significantly. Given that Egypt cannot reverse this process through either military or diplomatic means, it must learn to live with the GERD. Egypt needs a process of habituation because, in the beginning, Egypt strongly criticized Ethiopia for their unilateral action to establish the GERD. Several instances of resistance launched by Egypt have also been carried out; meanwhile, Ethiopia continues to build the dam. Gradually, the Egyptian government will revoke their monopoly and the problem will be solved.

In its efforts, Ethiopia has sought to build a multilateral cooperation with upstream countries to ratify the CFA (Cooperative Framework Agreement.) It will not end there; Ethiopia is still dealing with Egypt which is very worried about the water supply they get as a downstream country. In 2015, they finally succeeded in reaching an agreement in the Declaration of Principles (DoP) which helped reduce some of the debated issues of the GERD project. However, it turns out that the DoP did not completely end all of the debates over the GERD project. Debate broke out again in 2016 when a technical meeting was held to study an Egyptian proposal asking Ethiopia to add a hole that passes behind the GERD from 2 to 4 gates so as not to reduce the flow of Nile River water into Egypt. The crux of this problem is that Egypt wants to keep its Nile water safe.

A second book “*The River Nile in Post-Colonial Age*”, written by Terje Tvedt, highlights the efforts made by the Ethiopian government, which introduced a national water resources management policy in 1999 and proclaimed water management for the first time in 2000. This legislative action, according to Tvedt, is proof that the contemporary Ethiopian approach focuses on the goal of managing Nile water with the principles of efficient, equitable, and optimal. Tvedt

also believed that one day Egypt's status quo would weaken due to the emergence of the upstream state's awareness of the importance of the Nile for its own country. Tvedt also explained that upstream countries should also get water and make the best use of it. He also stated that Ethiopia wants to end its struggles as a country that is all in trouble both in water and electricity supplies.

Another book "*A Game Theory Approach on Understanding The Nile Basin*", explains again that Egypt is the downstream player, which means that it is very far from the origin of water sources. Egypt should not behave as if it has the primary role in the waters of the Nile River. Egypt remains keen to maintain influence in the region with its first priority being to maintain the status quo. Egypt's has the most flexibility in decisions in this conflict because it is the country with the largest military and political power in the region. It insists that Sudan and Ethiopia do not independently divert water. Despite the many efforts to cooperate offered by Ethiopia, Egypt has still chosen not to respond positively. Even though it knows that Ethiopia will not stop its GERD project just because of Egyptian criticism, Egypt still prefers to stick to the status quo rather than to cooperate. Egypt believes that the actions of the upstream states are insignificant in the Nile in terms of the division between the three lower states. Even so, Ethiopia prefers to aggressively pursue independent water development, without worrying about possible Egyptian retaliation.

Based on the literature review above and with consideration of the various debates, the author can conclude that the topic of focus is the study of the conflict over the establishment of GERD which is capable of threatening human security in the environment security component of the Egyptian people. The author

believes that this topic is quite relevant to be appointed as a thesis, because this research can build on previous research and explore the adverse impacts on the Egyptian people as a result of the existence of the GERD. Thus, the approach used by the author is the structural violence perspective as the security of the Egyptian people should be maintained and seems threatened by the establishment of the GERD. This will also include the negative impact caused by the development of GERD.

1.6 Research Framework

To analyze and discuss the existence of violence towards one of the human security components of the Egyptians as a result of the construction of the Grand Ethiopian Renaissance Dam (GERD) which was initiated by Ethiopia, the author has chosen to use the theory of Violence by Johan Galtung which consists of six distinctions which has helped the writer identify the forms of violence. In addition, violence is any physical, emotional, verbal, institutional, structural or spiritual condition, or behavior, attitude, policy or condition that weakens, dominates or destroys ourselves and others. What we see and experience is direct violence. Physical violence, such as physical assault, murder, and so on, may be a factor. Additionally, psychological violence or behavior can result in trauma, anxiety, or stress. Cultural violence refers to the prevalent perceptions used to justify violence of direct or structural nature. Prejudices or stereotypes that exist in society and have been internalized by individuals are examples of this. Stereotypes are manifested in people's interactions with one another.

Galtung has also explained that the social structure encourages structural violence. Systems are what make up societies, including the laws and the institutions that enforce them, economic systems such as the market, social interrelationships, religious institutions and their workings, and, in many cases, military institutions. These systems interact with one another to form complex power relationships. We can assess power in terms of resource access, decision-making authority, and opportunities. In addition, Galtung believes that structural violence is an injustice created by a system that causes humans to be unable to fulfill their basic needs. Structural violence can cause oppression of humans and social groups so that they experience various difficulties in living (Galtung, 1971).

The six distinctions theory is important to finding out more about the various types of violence in the development of the GERD. The first distinction to be made is between physical and psychological violence. This distinction is trite but important especially since the narrow concept of violence mentioned above concentrates only on physical violence. In physical violence humans are somatically hurt, possibly to the point of murder. The second distinction is between negative and positive approaches to influence. A person can be influenced not only by punishing him when he does what the influencer deems wrong, but also by rewarding him when he does what the influencer deems right. The third distinction that must be made is consideration of the object: were the objects injured or not. Can we talk about violence when no physical or biological object has been injured? This would be the case of what was referred to above as truncated violence, but it is nevertheless very meaningful.

The fourth distinction that must be made, and the most important are on the subject side, is whether or not there is a subject (person) who acts. The fifth distinction that must be made is between intentional and unintentional violence. This distinction is important when guilt must be decided, because the concept of guilt is associated more with intention, both in Judeo-Christian ethics and in Roman jurisprudence, than with consequences (whereas the current definition of violence rests entirely on side consequences). The last distinction is traditional and between the two levels of violence: manifest and latent. Manifest violence, both personal and structural, is observable; although not directly because the theoretical entity of 'potential realization' is also included in the picture (Galtung, 1969).

1.7 Provisional Argument

The Grand Ethiopian Renaissance Dam (GERD), which will be used as a huge reservoir as well as a hydroelectric power plant which is certainly environmentally friendly and much cheaper. Obviously, the GERD will be vital for energy production and economic development for Ethiopia. However, the development of the GERD has greatly increased tensions in several countries in the Middle East around the region, one of which is Egypt. Egyptian concerns about the GERD are high, not because the GERD will make Ethiopia better, but because the water stored in the GERD will reduce the water capacity that Egypt normally receives and it is also causing the water stored in AHD rapidly decreased in the first 5 years of GERD filling period.

AHD will reach its minimum level of water stored to zero percent in the first five years. It will cause the Egyptian suffered they will be experiencing a water scarcity. Although the impact may not directly can be felt but later the impact of the development of GERD can give a negative damage for the environment of Egypt and also the Egyptian. This happened because of the failure of the government of Egypt during the negotiations that established between Ethiopian government. Because of the establishment of GERD which initiated by Ethiopia, in the first distinction, the Egyptian will face psychological violence where they will be experiencing a water scarcity situation that later can also be physical violence if later there is a massive ill that causing death to the Egyptian. Second distinction, in the negative and positive approach to influence, since the Egyptian government are failure during the negotiation with Ethiopia for their part on the GERD, the Egyptian government will be got punishment and in the positive approach Ethiopia will become the biggest hydropower plant in the Africa. Third distinction is focus on the object side, during the development and reservoir filling period of GERD, Egypt is accidentally harmed. In the fourth distinction, the government of Egypt is the subject who caused the violence due to their failure on negotiation with Ethiopian government. In the fifth distinction, it is categorized as an unintended violence, because the government of Egypt is already trying to protecting their sovereignty by addressing several proposals to the Ethiopian. Sixth distinction, between manifest and latent level of violence, it is categorized as a latent level of violence which has a severe impact to the environment and people of Egypt.

1.8 Research Method

1.8.1 Type of the Research

In this research the qualitative method is employed. The qualitative research method is a method that focuses on the use of words and sentences, in contrast to quantitative which focuses on data collection in the form of numbers. According to Taylor, qualitative researchers develop concepts, insights, and understandings from patterns in the data rather than collecting data to assess preconceived models, hypotheses, or theories. Qualitative researchers emphasize the meaningfulness of their research (Taylor et al., 1949). With this explanation above, it can be understood that this method is appropriate for a study on phenomenon through writing or opinions expressed by experts.

1.8.2 Subject and Object of the Research

In research, determining the subject and object is very important to make it easier for the reader to understand the research. The subject of this research is the President of Egypt as the leader and highest policy maker for diplomacy with the countries involved. Then, the object of research or the subject matter are examined to reveal more detailed data, such as: (1) The impact of the GERD development on the environment as well as the Egyptians; and (2) the Egyptian government policy for facing negotiations with Ethiopia.

1.8.3 Method of Data Collection

In this section, the author emphasizes a review of the data in the form of a collection of documents and literature studies. This, of course, includes official

documents from the state, both those released from private sources and mass media. Other data collection techniques used included direct observation of the phenomenon through social media platforms and conducting interviews.

1.8.4 Process of the Research

This research was implemented through several steps. First, the general research questions were determined. Second, the relevant sites and subjects were selected and the relevant data was collected as well. Third, the data was interpreted using a conceptual framework to describe it, and the final step was the conclusion.

1.9 Thesis Outline

To obtain a systematic discussion, authors need to compile an outline in such a way that it can show good research results and is easy to understand. The systematic writing of this research can be described as follows:

The first chapter, which is an introductory part, contains the research background, research question, research purpose, research significance, research scope, literature review, conceptual framework, research methodology, and thesis outline.

The second chapter contains a description of the problem based on some indicators or variables in the framework of thought. Then, it describes some of the applications of the framework in an argumentative manner with data support. Finally, this chapter explains how the application of the framework of thinking is part of the effort to answer the problem formulation.

The third chapter contains an explanation of the application of the argumentative framework with the support of the data described in the previous chapter. It then explains how the formulation of the problem is answered through the application of the framework.

The fourth chapter contains the conclusion and recommendations.

CHAPTER II

THE IMPORTANCE OF THE GRAND DAM AND THE FACTORS THAT CAUSE STRUCTURAL VIOLENCE

2.1. The Purpose of The Establishment of the GERD

2.1.1 National interest and security

The implementation of the GERD itself has two goals. The first is economic: Ethiopia hopes to export much of the power generated by the GERD and become a major source of foreign exchange flows, turning Ethiopia into a major energy exporter in the region. The power generated could also power industrial production and provide a clean energy source for millions of Ethiopian households. Second, Ethiopia sees considerable geostrategic value in dams, this is also one of the reason why Ethiopia really pushing the project of GERD. In the term of security Ethiopia try to challenging the status quo which has given by the Great Britain as their historical claimed of the source from the Nile River, where Egypt is allowed to be the dominant as political actor in the Nile Valley so they can use the water resources from Nile for centuries. Ethiopia's top priority is to keep it safe, whether Egypt likes it or not. Ethiopia does not want Egypt to continue to enjoy the flow of the Nile.

Ethiopia's foreign and security policies are centered around development that benefits the people and creates a conducive environment in which the people support the implementation of that development. In this case, what is meant by Ethiopia is that it is expected to be able to support the planned development, namely the Grand Ethiopian Renaissance Dam (GERD). This has been shown in

the support of the Ethiopian people who have contributed to the success of the GERD development. The Ethiopian people have, of course, not contributed directly to the project, but have been patient and supportive of the government's plan. The project has taken many years to finish and has experienced many obstacles during the process of building the dam.

The benefits of the GERD are not limited to electricity supply, but downstream countries can also benefit, especially Sudan and Egypt, from the removal of mud and sedimentation by up to 86 percent, regulating stable water flow throughout the year and avoiding unexpected flooding to downstream countries. The GERD will also save water in the Ethiopian highlands due to lower evaporation (Tesfa, 2013). Ethiopia will receive benefits in the form of benefits from the river, namely economic benefits, and benefits beyond the river such as electricity supply that has been produced from the dam and also the benefits where Ethiopia will integrate with other Nile River countries reducing costs to support the use of the Nile while still being able to run the GERD dam project which will later contribute to Ethiopia's economic growth through exporting the electricity and establishing cooperation with another country to developing the source from the GERD (Sadoff & Grey, 2005).

2.1.2 Hydropower Development

The development of hydropower is one of the great potentials that can be harnessed by Ethiopia. Whittington has explained that the economic pressure on the Nile is "Withdraw water for irrigation as far upstream as possible – before you lose it through evaporation and seepage." According to him, there will be more usable water if it is used upstream rather than downstream, so it would be more

efficient if it was managed upstream (Whittington et al., 2005). The following statement is also in line with this, “opportunity cost option: downstream countries could withdraw water for irrigation, while upstream countries use it for hydropower”, which is based on the concept of trade where upstream countries can use water for hydropower before it flows to downstream countries where they can use it for irrigation development. The construction of the GERD could generate 6,000 megawatts of electricity, with an annual energy production of 15,130 GWH, meeting the demand for electricity supply in the country as well as in the African region (Tesfa, 2013). The World Bank estimates that Ethiopia could earn \$1 billion per year from electricity exports, making it the largest power exporter in Africa (Hicks, 2017).

Ethiopia is currently in a state of water stress or a condition where each resident in Ethiopia only gets 1700 cubic meters of water every year. Researchers predict that the condition of water scarcity will continue to worsen and signs already exist of a water crisis in Ethiopia. The Ethiopian government decided to combat this by continuing to build a large multifunctional dam, namely the GERD, to meet domestic water needs before a crisis occurred, which resulted in ecological, technical and political discourse (Thapliyal, 2011).

The GERD can be used by Ethiopia to avoid the discourse of the water crisis, which is in part caused by an increase in population. In 2017 Ethiopia had a population of 104,957,438 with a minimum water requirement of 2737.5 liters per individual, so the total minimum water requirement required for the entire population of Ethiopia in 2017 was 287,320,986,525 liters. In an emergency, the total water requirement of each individual in Ethiopia in a year can reach 574

billion to 766 billion liters to be able to meet the needs of water and hygienic food.

The GERD construction project, which has a height of 155 meters, aims to meet the needs of the national water supply in Ethiopia. The GERD can function as water storage during the reservoir water filling process with a total capacity of 73 billion cubic meters of water, equivalent to 73 trillion liters. This means that with the existence of GERD, the water supply needs in Ethiopia can even meet emergency conditions of 766 billion liters to provide hygienic water and food supply. Referring to the estimated total amount of water and hygienic food needs in Ethiopia, the GERD still leaves around 98.96% of the total water storage in the reservoir.

The technical discourse is also one of the efforts being carried out by the Government of Ethiopia to avoid the discourse of the water crisis. Ethiopia, as of 2017, still did not have adequate water supply management in the midst of a rapidly increasing population. Meanwhile, Ethiopia's political discourse is in the carrying out of the GERD development project as a *game-changer* effort on the Nile. The Ethiopian government continues to try to actualize the construction of the GERD for the sake of fulfilling water needs from the Nile. This is due to the unequal distribution of water in the Nile river.

2.2 Factors That Lead to Structural violence

Although some studies have criticized Ethiopia a lot due to its lack of attention to carrying out further studies on its imminent impact, Ethiopia remains optimistic about the project. The International Rivers Organization warns that,

“Our experience as an organization with expertise in hydropower and rivers, and as part of a global civil society movement of dam-affected peoples, leads us to conclude that maintaining healthy rivers and the ecosystems and communities they support is key to long-term prosperity.” While some scientists have predicted the dam could disrupt the flow of water into Egypt, an independent report commissioned by three governments has not been released yet with final conclusions about the dam's exact impact on river flow. The GERD Project Manager Semegnew Bekele said, *“is doing this”* (Borges, 2016). Whatever the environmental impact, and whatever protests against the construction of the giant dam occur, the GERD has been built, and will start energy production in December 2020 (Reuters, 2019). This can be looked at as Ethiopia ignoring its obligation *not to cause significant harm* to other countries.

2.2.1 Reservoir (GERD) Filling Period

Ethiopia wants to fill the reservoir as quickly as possible to achieve its hydroelectric energy production or ETP (energy target policy). However, each filling level must take into account the minimum water requirements for Egypt. The GERD filling period of five years will force the AHD reservoir to reach its minimum water level in year number five (Donia & Negm, 2018). This shows that a 100% fill rate policy (equivalent to a complete fill of the GERD reservoir in 2.5 years) will result in a 55% reduction in water flow to Egypt. Meanwhile, the Egyptian government has not made any plans to manage a situation in which the AHD reaches its minimum level of water. This will threaten the lives of Egyptians as Egypt will struggle with water access should the AHD hit its minimum level.

The main use of the GERD is hydroelectric power generation. Once the GERD reservoir is filled, the average discharge from the GERD will equal the annual average inflow. Operation may be intended to somewhat mimic natural flow conditions, such as peak flow during the flood season (August) and reduced flow during the dry season. Due to the high inflow, high water volume/water levels also result in high emissions. Low storage will reduce runoff and hydropower production in some seasons. The non-cooperative operation scenario (from an Ethiopian perspective) only considers optimizing storage operations to maximize hydropower generation. On the other hand, an annual reservoir fill rate of 8-15% could be beneficial for hydroelectricity for Ethiopia with minimal effect on river flow to Egypt (Keith et al., 2017). Thus, holding 10% or 25% of river flow will result in an average reduction of 6% to 14% of river flow which distributed to Egypt over the first 5 years (Zhang et al., 2015).

2.2.2 An Uncontrolled Factors

One uncontrolled factor is operations during a severe long dry season. The probability, severity, and timing of specific low-flow sequences are unknown, especially as climate change unfolds. For example, severe long droughts can occur during reservoir filling. In the instance of severe drought, feelings about the loss of water security can become particularly acute, which can cause water panic among irrigation and civil society in Egypt if people feel that they are being unfairly denied access to water or if the burden falls disproportionately on poor people (Wheeler et al., 2020). In addition, the environment around Egypt that requires access to water will be damaged and unable to be cultivated again.

Another factor is the collapse (destruction) of the dam. Catastrophic events, such as dam failure caused by geological/foundation weakness (example: from an earthquake, extreme storms, structural problems, old age, and terrorism or military attacks), will cause a major humanitarian catastrophe. If there is an earthquake some parts of the dam construction will be destroyed and of course the project will be restarted and if there is an extreme weather such as during the drought season the process filling of water will be delayed. If the water store is delayed it will be decreasing the water flow to the downstream countries. The most significant impact of this would be the amount of water trapped behind the GERD that will flow into the Blue Nile, which, when combined with water from the White Nile and smaller tributaries such as the Atbara, will collapse the Sudan dam and cause Khartoum to sink under 3 metres of water. After 18 days, the water will reach the High Dam in Egypt causing the water quality to become very low and unusable (Ahmed & Elsanabary, 2015).

2.3 The Importance of GERD for The Egyptian

For thousands of years, Egypt has had controlled on the Nile River, Egypt relies on the Nile River for more than 90% of its water. The region's population could increase by 25% in 30 years, increasing demand at a time when Egypt would expect less water from the Nile (Polakovic, 2021). With the GERD development it will reducing the amount of water that pass through to the AHD with estimated on the first 5 years filling period that water stored in AHD will reach its minimum level it will be threatening environment, people of Egypt, and also the economic sector from agricultural.

The declining per-capita water availability is bound to impact Egypt's rural population directly. Egypt's agriculture sector accounts for only 11 percent of GDP, but it employs about a quarter of the population and supports the livelihoods of nearly a quarter more. Ultimately, water availability limits agricultural production potential and the amount of income the sector can sustainably support. If current trends continue, an increasing amount of Egypt's already rural poor population could go jobless or struggle to make ends meet as a direct result of the agriculture sector's unquenched thirst.

Additionally, the declining per-capita water availability will increase Egypt's food production risk. Egypt now imports about 40 percent of its food consumption in monetary terms, making it one of the most food import dependent countries in the world. Wheat and corn are consistently both the most produced and most imported crops in Egypt, demonstrating that the country's inability to meet its most basic food needs domestically is not for lack of trying.

The construction of GERD, which risks affecting the water supply to Egypt, is certainly a serious issue for the people's source of life, so the Egyptian government needs to make various efforts to protect its national interests. The efforts made by the Egyptian government in protecting it can be seen through the various policies that have been formed, both domestically and abroad. Domestically, Egypt began prioritizing on water policy in its legislations, particularly with regard to the Nile River, with the issuance of Law No. 48/1982, which was the first law on the protection of the Nile River and other waterways from pollution. The National Canal Lining Project is one of the biggest water projects in Egypt. The National Canal Lining Project aims to reduce wasted water

on the Nile's banks by 15 to 19 billion cubic meters per year due to Egypt's old canal system. This system was built in the era of Muhammad Ali, almost 200 years ago. It is also formed of clay, which is permeable. This project's goal is to replace clay with concrete to line the new canals built in the Sinai Peninsula (Mohy El Deen, 2022).

On the other hand, for the foreign issues which related with the development of GERD, government of Egypt has delivered many proposals to the Ethiopia as a proof that Egypt is also need the water that about to stored in the grand dam. Before the reservoir filling period started, Egypt has provided several proposals and involving several international organizations such as World Bank and United Nation Security Council (UNSC). However, Ethiopia keeps refusing the proposal and start to begin the reservoir in 2020 (El-Gundy, 2021).

CHAPTER III

THE SIX DISTINCTIONS OF VIOLENCE ON THE ESTABLISHMENT OF GERD

3.1. Violence during the Development of the GERD

3.1.1 The first distinction to be made is between physical and psychological violence

Galtung has explained several terms related to violence. First, it makes a distinction between physical and psychological violence. One type of physical violence is somatic (or biological) violence, referred to as “deprivation of health”. Somatic violence includes anatomical attacks, such as "crushing, burning, or poisoning" and physiological attacks, such as "choking, starvation, or bodily restraint". Psychological violence includes “lies, brainwashing, indoctrination, and threats”(Galtung, 1969).

In the elaboration of both physical and psychological violence, what we can see is, there has been a psychological violation committed against the Egyptians. There are several factors that lead to the conclusion that psychological violation has taken place. First, the Egyptian government has failed in its negotiation with the Ethiopian government to stop or at least to give more priority to the Egyptian side as a downstream country. Then, although the impact of this water shortage is not physically detrimental to them, it will disrupt their daily life, as access to water, which is usually easy for Egyptians, will become difficult. This creates violence as a human rights component is not fulfilled for the Egyptian people, resulting from the failure of the Egyptian government to negotiate with

Ethiopia on efforts to reduce the possible losses that would be faced by Egypt as a result of the GERD development. Additionally, the GERD will permanently overwhelm vast natural habitats, with local and global species extinctions of biodiversity. River forests and riparian ecosystems will be significantly affected as they naturally exist along rivers and streams. On a large scale, these effects can be classified as the water crisis in Egypt: a shortage of surface and groundwater, a decrease in soil and water quality, and a reduction in the amount of water (Elbaradei & Ehab, 2020). However, the Egyptian government will not say that they have failed in terms of diplomacy with Ethiopia. The Egyptians are only aware of the benefits from the prospect of GERD for the country in which water from the dam passes through. They do not know about the negative impacts which can result from the development of the dam.

The Egyptian mostly not knowing what will happen in the future when the construction takes place and when the dam is filled. Even during natural disasters this can be one of the factors that has a severe impact on the flow of water that should flow to the downstream countries of the Nile River. Because the Egyptians lack knowledge about the entire dam project. Second, the data of the filling process in the first five years indicates that, annually, Egypt will experience a 55% decrease in the flow of the Nile River and an average 14% decrease in the first five years after fulfilling the reservoir (Zhang et al., 2015). The Egyptians will face an unseen violation. It is not a direct violation towards the Egyptians, but as time goes by the effect of the development of the GERD will gradually become noticeable. It can damage the psychology of the Egyptian people because access to water that is usually easy to obtain becomes difficult. What is usually water can

be said to be very sufficient becomes completely lacking. Because the filling process for five years will have an impact on the Aswan High Dam where the water supply contained in the dam touches the minimum limit in the first 5 years of the dam filling process from 0-100%.

With this incident, access to water will be increasingly difficult considering that the Nile is the only source of water Egypt has. In addition to limited access to water, this will also result in damage to the livelihoods of Egyptians who work as farmers. It will also lead to the Egyptians becoming scared and worried about their fate. A lack of water supply will obviously cut off access to food for some people given the possibility of crop failure and the like. According to UNDP, almost 80% of Egypt's total workforce are involved in the agricultural sector (Yumna, 2022). As Galtung puts it: if people are starving, violence is experienced, whether or not someone is trying to starve them. Given this statement from Galtung, water scarcity can also give the impact to the food production and food consumption as well as the daily water consumption. Every country that facing the water scarcity situation will experiencing many negative impacts to its people, there will be an illness starting to be spread in most are of Egypt due to the hard access to the water, even worst it could lead to a death, if this happened it will categorize as a physical violation. Means Egyptian can face both term of violence either physical and psychological due to the failure of the government during the negotiations on the GERD dispute with the Ethiopia.

3.1.2 The Second Distinction is between the Negative and Positive Approach to Influence

The second distinction needs to be made between negative and positive approaches to influence. A person can be influenced not only by punishing him when he does what the influencer deems wrong, but also by rewarding him when he does what the influencer deems right. Instead of increasing the constraints on his movement, the constraints can be reduced, and somatic abilities can be extended rather than decreased. This may be easily agreed upon, but the question is whether or not it has anything to do with violence. It does, because the end result may still be humans who are effectively prevented from realizing their potential. Many contemporary thinkers emphasize that the consumer society rewards those who consume moderately, while not positively punishing those who do not. The system is reward-oriented, based on the promise of euphoria, but also narrows the range of action. It may be argued whether this is better or worse than a system that limits the range of action due to the dysphoric consequences of staying outside the allowable range. It may be better to provide pleasure than pain, worse at being more manipulative, less open. But what is important is that awareness of the concept of violence can be extended in this direction, because it provides a much richer basis for discussion.

For the negative approach, if the GERD keeps continuing and later will give the negative impact to the environment of Egypt as well as the people of Egypt, the government of Egypt as the state actor that supposed to provide a protection to all of that, they will be sanctioned because of the government has failed during the negotiations and decided to stop the negotiation with Ethiopia

with not provide any other plan that can be accepted by the Ethiopian government so at least the impact not more severe for the environment and people of Egypt. The sanction will give either by the United Nations or from organizations aimed at environmental welfare. The sanctions given came from Egypt government that has failed in the process of dam profit-sharing negotiations. There are several factors that become obstacles and also factors that can thwart the realization of the dam operating 100% including if there is a prolonged dry season during the filling process, then if there is an obstruction in the funding process, and also if there is a natural disaster which results in a leak or collapse of the dam. If the water that is stored in the dam comes out of this dam it can drown several downstream countries that will be flowed afterwards. In addition, the African Union, as the organization that mediates negotiations between Ethiopia and Egypt, will impose sanctions because the ongoing negotiations have failed to reach an agreement (ISSAfrica, 2021).

On the other hand, in the positive approach, if Ethiopia succeeds in building the dam and no one is harmed or damaged, which is fairly impossible, what they will get is the welfare of the Ethiopian people, more even distribution of electricity supply throughout Ethiopia, and also sufficient water supply for the people Ethiopia for years to come. If the GERD project is successful, there will of course be quite a lot of positive impacts. Because the GERD will be the largest hydropower plant in the African region, electricity will be well-distributed. The upstream countries will also receive a flow of water that they had not previously obtained due to the domination of Egypt in the flow of water in the Nile River. In other words, water would be better-distributed as well. Then, from an economic

perspective, income will certainly increase because the flow of water also helps the agricultural sector of Ethiopia. More water, more energy, and better economic systems are inherently interlinked, and considering these interlinkages in planning and operating river basins can help make better decisions on water use, especially during multi-year periods of drought (Siddig, 2021).

3.1.3 The Third Distinction is on the Object Side: Objects Who Were Hurt

The third distinction that must be made is on the object side, specifically, whether any objects were injured or not. Is it possible to discuss violence when no physical or biological object is injured? This would be the case of what was referred to as truncated violence, but it is nevertheless very meaningful. When a person, a group, or a nation exhibits means of physical violence, be it throwing stones or testing nuclear weapons, there may be no violence in the sense that someone is beaten or injured, but there is still a threat of physical violence. The indirect threat of mental violence can even be characterized as a kind of psychological violence because it limits human action. Indeed, this is also the goal: the well-known doctrine of the balance of power is precisely based on trying to get this effect.

In line with psychological violence that does not reach an object, lies do not become more than the truth because no one believes in lies. According to this kind of thinking, unrighteousness is violent under any circumstances, which is not to say that it cannot be at its worst in some of the widely discussed circumstances. Is the destruction of something violent? Again, it is not violence according to the full definition above, but perhaps a 'degenerate' form. But in at least two senses it can be seen as psychological violence: the destruction of goods as a premonition

or threat of the possible destruction of people, and the destruction of goods as the destruction of something dear to the consumers or owners.

Ethiopia, in the development of the GERD, did not have any intention to harm actors from any country. However, in the development of the GERD and the current process of filling the GERD, there have been many losses for downstream countries. The GERD is vulnerable to a number of concerns that create tension and conflict between Ethiopia and downstream countries. The first issue is endangerment of the security of water and ecosystems in downstream countries, especially Egypt. The duration of reservoir filling determines the amount of water supply to be cut from Egypt.

Egypt is expected to lose around 10-15 billion m³ of its annual share of water, and as a result the agricultural sector will be severely affected and the water level in the Aswan High Dam will decrease causing possible problems in producing hydroelectric power (Youm, 2021). If there is an object that is harmed, it becomes an indirect violation. In this case, Egypt has been accidentally harmed by GERD, because the failed of the government of Egypt on the negotiation proses with Ethiopian Government and because the lack of movement for anticipating the negative impact from the establishment of GERD, the environment and the people of Egypt accidently violated. The potential environmental impacts of the GERD consist of direct and indirect effects on the biological, physical, and chemical features of the Nile. Matters that have been addressed include the loss of agricultural land for most of the Egyptian population working as farmers and the destruction of natural habitats. As the agricultural sector consumes about 80% of Egypt's water resources, it will be the sector most

affected by the decrease in water supply, exacerbated if the GERD is filled in dry years (Meguid, 2017). With the decrease in water quality, suspended solids are an important physical index of water quality (Ahmed & Elsanabary, 2015).

Due to the dam slowing flow of water (from 5% to 42%), the suspended particles in the water settle, which could improve the water quality of the reservoir and upstream reach. However, the reduction of suspended solids in the water also makes the land along the downstream coast not as fertile as before, such as the land along the Nile River in Egypt which has a great impact on its agriculture. Not only is agriculture affected, but this will also damage the whole environment of Egypt.

3.1.4 The Fourth Distinction is on the Subject Side: Subjects Who Acted

The fourth distinction that must be made, which is possibly the most important, is on the side of the subject: whether or not the subject (person) has acted. Again it might be asked: can we discuss violence if no one is committing direct violence, is there an actor? This is also a case of what is referred to as truncated violence, but, again, it is still very meaningful. There are types of violence in which there are actors who commit violence as a personal or direct action, and violence in which there are no structural or indirect actors. In either case, individuals can be killed or mutilated, beaten or injured in both meanings of these words, or manipulated with stick and carrot strategies. But, in the first case these consequences can be traced back to concrete persons as actors, and in the second case this is no longer meaningful. No one should directly harm others in the structure. Violence is built into the structure and emerges as an unequal force and consequently as an unequal life opportunity.

As already mentioned in the third distinction, Egypt was inadvertently harmed by the development of GERD. Indeed, if you look at the actors who initiated this development, it was the upstream countries: Ethiopia and several other countries that supported the construction of this dam. However, to make or to appointing Ethiopia as a subject who acts the violence towards the Egypt environment and the Egyptian it is not possible. Because Ethiopia has not any authorities in Egypt areas. They only focused in the GERD that established in the Ethiopia, the violence happened because of the failed of the Egyptian government during the negotiations with Ethiopia, even when Egypt trying to request the involvement from the World Bank in 2018 on the negotiations. In 2019 El Sisi the President of Egypt offering another proposal to Ethiopian government, El-Sisi calls for international intervention in the GERD negotiations and emphasises that the “Nile’s water is a matter of life and an issue of existence for Egypt.” However, Ethiopian government tend to refuse to discuss Egyptian proposal.

At the universal level, the neighboring upper Nile nations such as Burundi, Uganda, Kenya, Tanzania, South Sudan, Democratic Republic of the Congo, and Eritrea, as well as the nations that contributed to the GERD financing, such as China, Israel, Saudi Arabia, United Arab Emirates, and Turkey, ought to give their aid and investment in mega dams once they begin working. As a matter of fact, the purpose of this development is for the welfare of the Ethiopian people and the geostrategic value that can be utilized from the dam later. At the national level, it is Ethiopia that will specifically benefit from the development of the GERD through its power plant, which will be able to meet the power needs of the community as well as turn Ethiopia into Africa's biggest control center

(Widakuswara, 2019). However, considering the information about the actors involved, it cannot be stated that Ethiopia is the subject of this violence, instead, that can be categorized as an actor or subject is the Egyptian government, because in the process of the development and the GERD reservoir filling period Egyptian government has failed to do the negotiations for anticipating the negative impact that caused from the development of GERD. The GERD has had negative impacts on downstream countries. Of course, Ethiopia does not intend to damage the environment of the country of Egypt for the dam project they are building. Looking at their goal of building the dam is for the welfare of the people. However, due to the absence of anticipation of several factors that could lead to the failure of the construction of the dam, this has caused several major impacts that are detrimental to the State of Egypt.

3.1.5 The Fifth Distinction is between violence that is intended or unintended

The fifth distinction to be made is between violence that is intended or unintended. This distinction is important when guilt is to be decided, since the concept of guilt is tied more to intention, both in Judaeo-Christian ethics and in Roman jurisprudence, than to consequence (however, the present definition of violence is entirely located on the consequence side). This connection is important because it brings into focus a bias present in so much thinking about violence, peace, and related concepts: ethical systems directed against intended violence will easily fail to capture structural violence in their nets - and may hence be catching the small fry and letting the big fish loose. From this fallacy it does not follow, in our minds, that the opposite fallacy of directing all attention against structural violence is elevated into wisdom. If the concern is with peace, and

peace is absence of violence, then action should be directed against personal as well as structural violence.

Galtung has noted that a focus on guilt in terms of intent causes many ethical systems to underestimate or ignore the power of structural forms of violence that may be unintentional. This project is based on the consciousness of the Ethiopians who initiated the construction of the dam known as the Grand Ethiopian Renaissance Dam. Despite the failure of diplomacy between Ethiopia and Egypt in agreeing on the development of the GERD, we still cannot say that government of Egypt trying to violating their own nation. The government still trying to established several negotiations with Ethiopia although they are failed in the negotiations. Again, the aim of Ethiopia is hydropower interests where they, as an upstream country from the Nile, only get a small part of the flow. This is why they initiated the construction of this reservoir. Egyptian government should address the proposal that more realistic and can be agreed by the Ethiopian.

Although talks chaired by President Cyril Ramaphosa of South Africa on behalf of the AU (African Union) have resolved many issues associated with the filling of the GERD's reservoir, there is still no agreement on the role that the dam will play in mitigating droughts (Mbaku, 2020). A drought here is defined as when the flow of Nile water to the dam falls below 35-40 b.c.m. per year. It is estimated that the GERD will worsen Egypt's water budget from the current ~ 20 bcm to a total annual deficit of between 26 and 38 bcm, according to the GERD filling policy which shows that Egypt will face a water crisis (Heggy et al., 2021). However, this is categorized as an unintended violation. Because the Egyptian government has tried to settling the GERD dispute and the dam itself

was built in the spirit of justice for access to water for countries that agreed on the dam project. There is no intention to damage the environment and also to make it difficult for people in downstream countries. Several anticipatory efforts have also been prepared, however, there are many factors that could have an adverse impact and no formula has been found to accommodate all these factors.

3.1.6 The Sixth Distinction is the traditional distinction between the two levels of violence: Manifest and Latent

The sixth distinction is the traditional distinction between two levels of violence: manifest and latent. Manifest violence, both personal and structural, is observable, although not directly because the theoretical entity of 'potential realization' is also included in the picture. Latent violence is something that doesn't exist, but can easily occur. The three of them form the triangle conflict. According to Galtung, basic problems can be started from attitudes and behaviors that cause contradictions. In this case, it can be seen how Ethiopia's attitude in making the decision as a downstream country describes its project as only positive and did not try to find out whether the dam project would cause damage to the environment or whether water intake being received by the states downstream would decrease drastically. This is because Ethiopia's concern was hydropower development through the development of the GERD (Borges, 2016).

The actions of Ethiopia as the initiating country and the "private" sector that assisted the funding of the development of the GERD will result in structural violence. This project will be very detrimental to the downstream countries, one of which is Egypt. Egypt depends on the Nile more than any other riparian country. Its dependency ratio is one of the highest in the world, with 96.9 percent

of total renewable water resources flowing from neighboring countries (FAO and IHE-Delft, 2020). Meanwhile, the GERD Reservoir covers an area of approximately 1900 km², and the water level at full supply is 640 meters above sea level. The total storage capacity of the dam is about 74 bcm, which is equivalent to the combined Egyptian and Sudanese share of the Nile each year. The actual volume that would be required to fill the basin could even reach 110 bcm.

Without many realizing it, the GERD project will slowly have a negative impact on humans and the environment. The impact on the humans themselves is not only detrimental to the environment, with a decrease in the quality of this water it can also worsen the health of the Egyptian people because there are no other water sources apart from the flow of the Nile River. Then, with the reduced water quantity, it also has an impact on human health threats, with a lack of water, the Egyptian people will find it difficult to produce food and have difficulty consuming water for drinking. If this happens there will also be food scarcity in Egypt which will result in the emergence of diseases that originate from a lack of nutrition for the Egyptian people, especially those who are still in the process of growing.

Ethiopia has not prepared any plans yet for mitigation efforts if there is one day a disaster in this dam project (Reuters, 2019). It can be categorized as a latent level of violence as the negative impact from the development of the GERD might not result in direct damage and does not even look harmful, but impacts will appear later because of the process of building the dam and the filling of the reservoir. This starts with latent violence, because the physiological violence that

is experienced is not directly experienced by the people of Egypt because they still have water reserves at the Aswan High Dam. They may feel secure in the initial few years of the GERD filling process. A few years later they began to experience what is called a shortage of water, damage to agricultural land and also the most severe experience of water scarcity.

In the event of a dry season, the flow of water will automatically decrease so the flow of water to downstream countries will also be reduced, which is another concern. Thus, water management during reservoir filling and when the dam starts operating is a major issue of unresolved conflict despite ongoing negotiations between the three countries since 2011. Egypt still needs a water supply of an average of 114 billion cubic meters annually; however, it is facing a current deficit of about 54 billion cubic meters annually (Youm, 2021). In addition to water shortages due to dam filling, Egypt suffers from dry irrigation canals due to climate change and lack of maintenance. According to the Food and Agriculture Organization of the United Nations, temperatures across much of Egypt are expected to rise by an average of 1.8 to 3.6 degrees Celsius over the coming years, demanding extra amounts of water to grow crops and to compensate for increased evaporation in the country both for the Nile and its canals (Bearak & Raghavan, n.d.).

CHAPTER IV

CONCLUSION

4.1 Conclusion

Water scarcity and worsening climate change, as well as the construction of unimpeded dams on transboundary rivers, are major factors in water disputes around the world. Some disputes have been managed through cooperative strategies, and others have reached a stalemate where armed conflict is possible, as is the case with the Grand Ethiopian Renaissance Dam. The gap between Ethiopia's persistence in resisting demands from downstream countries and the dire demands of Egypt and Sudan for a binding agreement to ensure no significant damage to their share of water and the safety of the dam will happen is wide. If Ethiopia continues to reject downstream proposals for a detailed study of the impacts of the GERD and ways to compromise reservoir filling periods to reduce harm, downstream countries may exercise the option of armed conflict that will cause severe damage to all three countries.

The reason for Egypt's withdrawal was the mobilization of Ethiopia from upstream countries to have a new framework of cooperation without consensus from Sudan and Egypt. When the downstream countries disagreed with the proposed new framework and demanded a veto for any possible project on the Nile, the upstream countries, led by Ethiopia, rejected the request and Egypt suspended its participation. Egypt's water security was seriously threatened when Ethiopia announced the construction of the Grand Ethiopian Renaissance Dam (GERD) in 2011. Ethiopia began filling the dam in 2020, and a second filling will take place in July 2021. This action will have political, economic, social, and environmental impacts in Egypt. Other concerns include the consequences during

long-term drought and GERD refilling, especially if this occurs immediately after the initial fill, and eventual flooding if the GERD is damaged and the consequences this would have for Egypt.

As a result of the construction of the GERD and the process of filling it up, Egypt lost 60% of the water supply it normally gets annually. Of course, this has had a huge impact on the Egyptian population, where 80% of the population consumes water for the agricultural sector. In addition, it has also had an impact on the amount of electricity generated from AHD and the decline in water quality and quantity. Filling the GERD reservoir will reduce the average annual flow and the Nile will be completely depleted if the GERD is filled within 1 year as all flow will be diverted to the GERD reservoir. This creates the big question of: **How has the establishment of the GERD (Grand Ethiopian Renaissance Dam) caused structural violence in environmental security for Egypt?** *First*, between physical and psychological violence, Egypt will face a psychological violation. Due to the failed negotiation between Egypt and Ethiopia on the division of the river and the dam, Ethiopia continued with its grand dam project. Data shows that Egypt will lose some of its water income in the first five year period of filling the dam, receiving about 55% of its annual water income, resulting in limited access to water. However, it is also can caused the physical violence, because with the water scarcity, the Egyptian can experience a hard access for food and water consumption that can caused an ill du to starving even worst it can cause a death. *Second*, between negative and positive approaches, if the development of the dam is hampered either because of natural disaster or funding, possible environmental damage and water scarcity in downstream

countries will result sanctions on Egyptian government due to their failure on providing protection to the environment and the needs of the people. On the other hand, if Ethiopia succeeds in building the dam, they will become the country with the biggest hydropower plant in Africa and the world. Electricity supply will be more evenly distributed throughout Ethiopia and there will also be sufficient water supply for the people of Ethiopia for years to come.

Third, for objects who are hurt, this case is categorized as an indirect violation because Egypt was accidentally harmed by their own government due to the failed negotiations. *Fourth*, the purpose of the development of the reservoir is for the welfare of the Ethiopians and if anything happens to the downstream countries, this is accidental and Egyptian government is the subject that caused the violence on the environment of Egypt and the people of Egypt.

Fifth, Ethiopia, as an up-stream country of the Nile river, only gets a small part of the water flow, which is what initiated the development of the GERD. Despite the negative impacts that happened because of the GERD, it is still categorized as an unintended violation. *Sixth*, between two levels of violence - manifest or latent, in the establishment of the GERD, which was initiated by Ethiopia, Egypt was accidentally harmed in terms of its environment, a latent reduction in the quality of the water that flows in to Egypt, and also a decrease in the quantity of the amount of water, which can lead to water scarcity for the Egyptian people. Furthermore, it can cause desertification of agricultural land in Egypt due to the declining quality and quantity of incoming water. This will also be affected by climate change as temperatures in most of Egypt are predicted to increase by an average of 1.8 to 3.6 degrees Celsius in the next few years.

4.2 Recommendations

Given the explanations that have been outlined in this study, from the analysis to the results of the analysis, it is important to emphasize that there are still many shortcomings and limitations to this study. The author provides several suggestions for further research:

1. The author only conducted an analysis that focused on the context of the impact of the GERD on the Egyptian environment. Meanwhile, there is also another downstream country that may experience impacts from the development of the reservoir on its environment, which is Sudan. Further researchers could incorporate both countries directly as countries being harmed by the establishment of GERD.
2. Due to the fact that the scope of this research is from 2018 to 2021, it cannot be guaranteed that the impact on the environment of Egypt is only what the author has provided above. The establishment and the water filling process is ongoing and it will be years before it is finished.

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