

ORIGINAL ARTICLE

The Grand Ethiopian Renaissance Dam: Implications for Regional Energy Integration and Geopolitical Equilibrium in Northeastern Africa

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Abstract

Countries use their natural and man-made resources as a diplomatic chip to change the geopolitical power configuration of a particular region in their favor and as an impetus for their regional integration efforts. After qualitatively analyzing both primary and secondary data, this article ascertained the important role of GERD in supporting Ethiopia's regional energy integration efforts and in fostering a new water-geopolitical order in Northeastern Africa. Moreover, GERD's ability to create a symmetrical water-geopolitical order in Northeast Africa triggered a preservist-revisionist dispute between Egypt and Ethiopia. While Egypt aims to maintain the current asymmetrical water-geopolitical order of the Nile River basin, Ethiopia wants to create an equitable water-geopolitical order. In water-geopolitical terms, GERD represents a new hydro-political reality that challenges Egypt's long-standing technical hydro-hegemony over the Nile River basin by unlocking Ethiopia's natural hydro-hegemony.

Keywords: Northeastern Africa, GERD, energy integration, geopolitical equilibrium

Introduction

The construction of massive dams on transboundary rivers has long caused water-related geopolitical disputes and uncertainties among riparian states. Dams have been a curse, inflicting great danger upon the very existence of some states; yet, for other states, they have been an engine of development and prestige. For example, the Aswan High Dam (AHD) eased the threat to Egypt's water security, and it is a source of pride and development (Abu-Zeid and El-Shibini, 1997). Others considered the AHD "the wrong project at the wrong place" that has caused environmental catastrophes and the displacement of more

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than 100,000 Nubians (Nader, 2019; Fahim, 2013; Erlich, 2002).

Countries also utilized their dams to demonstrate and maintain their hydro-hegemonic power in a given basin (Goitom, 2014). In particular, hydroelectric dams serve as power banks, providing the owner and other riparian countries with renewable, reliable, and affordable energy supplies, thereby facilitating regional energy integration. In this context, the non-hegemon countries use large dams to increase their hydro-political influence and to redraw the water-geopolitical map of the basin in their favor (Cascão, 2009).

Scholars have highlighted the impact of the Grand Ethiopian Renaissance Dam (GERD) on the hydro-political dynamics of the Nile River Basin. Some consider GERD a project that will alter the hydro-political power configuration of the Nile River Basin. Cascão and Zeitoun (2013), Tawfik (2015), Tayie (2017), and Goitom (2014) saw GERD as a new water-geopolitical reality created by Ethiopia to counter Egypt's hydro-hegemony over the Nile River Basin. Ethiopian officials and scholars, on the other hand, celebrated the GERD as a new great victory, alongside Adwa, and as a symbol of renaissance that would remedy the acute energy deficit of the country and the region (Ethiopian News Agency, 16 July 2025; EEP, 2023; GTP I, 2010). In his speech at the inauguration ceremony of the GERD, Prime Minister Abiy stated that "the inauguration of the dam is comparable to the victory of Adwa, heralding a new era of prosperity for Ethiopia" (Ethiopia News Agency, 09 September 2025).

Lecocq (2020) and Yihdego et al. (2016) characterized GERD as a catalyst for economic cooperation and development in Northeast Africa. Here, at the commencement of the Renaissance Dam project, former Prime Minister Meles claimed that Sudan and Egypt should cover 30 and 20 per cent of the cost of the dam, respectively, given the benefits the dam would bring to them (Horn Affairs, 02 April 2011).

However, lower riparian countries have compared GERD's construction to a nuclear power plant, threatening their survival by reducing water flow in the Nile River (Egypt Today, 19 June 2020). In this regard, Tayie (2019) argued that Ethiopia built the GERD to produce electricity at Egypt's expense. Tayie (2019) also speculated that the GERD, during its filling period, would reduce electricity generation at the AHD by 40 per cent, water quota by 11-19 billion cubic meters (bcm), and agricultural productivity by 12 per cent. Tayie (2019) further argued that GERD has the potential to trigger water conflicts between Ethiopia and the lower-riparian countries of the Nile River Basin.

However, the International Panel of Experts' (IPoE) preliminary study indicated that the GERD will not cause significant harm to downstream countries, as it will allow for regulated water flow and prevent unnecessary flooding and sedimentation (IPoE, 2013). The IPoE (2013) also noted that the potential negative impacts of the GERD on the recession and salinization of agriculture, fisheries, the brick industry, and biodiversity in downstream countries require further study and attention. Since Ethiopia filled the GERD during the

rainy season, no significant change was observed in the levels of the Roseires, Merowe, and Aswan reservoirs (Ahmed et al., 2024). Ahmed et al. (2024) further stated that during the first three phases of the dam filling, the downstream dams showed a slight increase in water storage. The GERD, however, has caused the displacement of approximately 20,000 people from their homes in the project area (Vaughan, 2020).

Having examined the existing literature to shed light on the hydro-political, environmental, and social implications of the GERD in the Nile Basin and beyond, this study focuses on how landlocked Ethiopia can utilize the GERD to achieve its regional integration goals and establish a symmetrical water-geopolitical order in Northeast Africa. To this end, we critically examine the regional integration schemes and the water-geopolitical aspirations of post-1991 Ethiopia using the classical realist ideals of the resource–regional integration–geopolitical equilibrium nexus and Frey and Naff's (1985) “interest-position-power matrix.” Accordingly, the study finds that, by increasing Ethiopia's installed electricity capacity, the GERD can pool Northeast African countries' power grids and alleviate their energy deficits (EEP, 2025). Moreover, the GERD project enhances Ethiopia's technical hydro-hegemonic power, reveals its natural hydro-hegemonic power, and paves the way for a symmetrical water-geopolitical landscape in Northeast Africa.

The Grand Ethiopian Renaissance Dam: Project Outline

The history of the GERD dates back to the disagreement in the 1950s between Emperor Haile Selassie I of Ethiopia and President Gamal Abdel Nasser of Egypt over the construction of the Aswan High Dam. After Nasser announced the AHD project, Emperor Haile Selassie supported the US Bureau of Reclamation's (USBR) recommendation to conduct a feasibility study of 33 hydraulic schemes to be constructed on the Blue Nile/ Abay River on a tit-for-tat principle (Wossenu and Shimelis, 2019; Saeed, 2018). Four of the 33 hydraulic projects (Kara Dobi, Mabil, Mendia, and Border Dam) were mega-hydroelectric dams (Wossenu and Shimelis, 2019), which could store 70 bcm of water and generate 5,500 MW of electricity (FDRE MoWR, 1998).

After revising the USBR feasibility study in 1998, the Ethiopian People's Revolutionary Democratic Front (EPRDF) government determined to construct what has been called the Border Dam under the code name ‘Project X’ (ICG, 2019). The government keeping the ‘project X’ secret for a decade and then rebranded it – first as the “Grand Millennium Dam” and later as the “Grand Ethiopian Renaissance Dam” (GERD) – and began construction in March 2011 in a place called Guba in the Benishangul Gumuz region of Ethiopia (Wossenu and Shimelis, 2019; Saeed, 2018; Abdelhaleem and Helal, 2015). The catchment area of the GERD tributary covers 172,250 km², which is equivalent to the sum of the geographical areas of Portugal (92,090 km²), Belgium (30,528 km²), Rwanda

(26,338 km²), and Djibouti (23,200 km²) (Gedion, 2023; CIA, 2024). GERD consists of two dams: the main dam, with a height of 145 meters (m), a crest length of 1,780 m, a crest elevation of 645 m, and a volume of 10.7 million cubic meters (Mm³) roller-compacted concrete (RCC); and the saddle dam, with a height of 50 m, a crest length of 5,200 m, and a volume of 15.3 Mm³ (Gedion, 2023). The GERD, set to generate 5,150 megawatts (MW) of electricity by creating a 1,874 km² lake with a volume of 74 bcm of water (FDRE MoWE, 2026; Gedion, 2023), was inaugurated on 9 September 2025.

The Resource-Regional Integration-Geopolitical Equilibrium Nexus

The study uses the classical realist concept of the resource-regional integration-geopolitical equilibrium nexus and the interest-position-power matrix of Frey and Naff (1985) to analyze the role of the GERD in facilitating regional energy integration and maintaining water-geopolitical equilibrium in Northeast Africa. Here, Northeast Africa refers to the geographical area that intermediates the Eastern Nile Basin and the African Red Sea arena, plus Kenya (Hepburn and Radloff, 1998 and Daniel, 1988). The Northeast Africa sub-region, therefore, encompasses countries of the Eastern Nile Basin (Egypt, Sudan, South Sudan, and Ethiopia), the African Red Sea littoral countries (namely Eritrea, Djibouti, and Somalia), and Kenya.

Classical geopolitical realists believe that resources dictate state relations (Scholvin, 2016). Landlocked countries, in particular, use their natural and man-made resources to support their regional integration endeavors (Conker, 2014). Resources also play a pivotal role in maintaining geopolitical equilibrium (Kissinger, 2011). In water-geopolitical terms, countries utilize hydraulic projects to achieve their regional integration goals, enhance their control, and demonstrate their water-geopolitical influence over transboundary river waters (Gokmen, 2010; Flint, 2006). For example, the construction of the Aswan High Dam enabled Egypt to better utilize the Nile River water and to acquire more hydro-hegemonic power over the Nile River Basin (Cascão and Zeitoun, 2013). Similarly, the post-1960s aggressive Turkish national water development projects, such as the Southeastern Anatolia Project (GAP), enabled Turkey to acquire absolute water-geopolitical hegemony over the Euphrates-Tigris River Basin (Conker, 2014).

Realists argue that landlocked countries use resources as a basis for their regional integration. Accordingly, the post-1991 Ethiopia based its regional integration scheme on two pillars: infrastructure development and energy development (Goitom, 2014). Just as the petrodollar has increased the physical and economic presence of Arab states in the Horn of Africa, infrastructure and energy development have helped landlocked Ethiopia to increase its physical and economic influence in the region. In this context, the Grand Ethiopian Renaissance Dam is an energy infrastructure that Ethiopia has built to connect itself with the countries of Northeast Africa through energy trade. In fact, with the construction of GERD, Ethiopia aimed to interconnect the national grid of the Northeast

African countries (Goitom, 2014). Apparently, just as the Aswan High Dam increased Egypt's water geopolitical influence and control over the Nile River, the same would GERD do for Ethiopia (Cascão and Zeitoun, 2013).

The Interest-Position-Power Matrix in the Nile Basin

According to Frey and Naff (1985), one can know which country has hydro-hegemonic power over a transboundary river using three metrics: (1) the riparian country's level of interest in using the river (Interest); (2) the geographical position of the riparian country over the river (Position); and (3) the material and diplomatic influence of the riparian country (Power). Frey and Naff (1985) argued that a riparian country is a hydro-hegemon of a given transboundary river basin when it enjoys the highest natural/positional advantage, possesses the highest material power, and has the highest interest in those transboundary river waters. For example, Turkey and Israel are designated as hydro-hegemonic powers of the Euphrates-Tigris and Upper Jordan River, respectively, because they possess strong positional/natural power, the highest material power, and the highest interest (Frey and Naff, 1985).

Indeed, in the 1950s and 1960s, Iraq possessed technical hydro-hegemony over the Euphrates-Tigris River Basin (Dohrmann and Hatem, 2014). However, ambitious hydraulic projects in the post-1960s initiated by the Turkish government revealed the natural hydro-hegemonic power of Turkey and consequently changed the hydro-political power configuration of the Euphrates and Tigris River Basins in favor of Turkey (Dohrmann and Hatem, 2014). Similarly, Israel was not the hydro-hegemon of the Upper Jordan River Basin until it controlled the Golan Heights and Shiba'a Farms in 1967, which significantly increased its natural/positional hydro-hegemonic power (Zeitoun et al., 2013).

Technical hydro-hegemony refers to the non-water, non-physical, and reputational capabilities, such as the material, bargaining, and ideational power of riparian countries (Tayie, 2024; Zeitoun et al., 2013) that enable them to make better use of transboundary river waters (Cascão and Zeitoun, 2013; Cascão, 2009). *Natural hydro-hegemony*, on the other hand, refers to the positional or geographic power that riparian countries possess due to their locational advantage and hydraulic control over the transboundary river waters (Zeitoun et al., 2013). Accordingly, riparian countries located at the head of the river basin and supplying most of the water resources possess natural hydro-hegemonic power (Cascão and Zeitoun, 2013).

If we try to analyze the current hydrohegemonic power configuration of the Nile Basin countries using Frey and Naff's (1985) "interest-position-power matrix", Egypt, with the highest material, bargaining, and ideational power, as well as high interest, is assumed to have technical hydro-hegemonic power (Zeitoun et al., 2013). On the other hand, Ethiopia, with 86–95 per cent Nile water contribution, its upper position and high interest, holds natural hydro-hegemonic power. The "interest–position–power matrix" of Frey and Naff (1985) undermined the old assertion that Egypt is an absolute hydro-hegemon of the

Nile River Basin. Cascão and Zeitoun (2013), in their analytical tool of “hydro-hegemonic and counter-hydro-hegemonic frameworks,” presented Egypt as an absolute hydro-hegemon of the Nile Basin by relying solely on technical or non-water parameters, such as ideational, bargaining, and material powers, which is misleading.

Although Egypt has the highest technical hydro-hegemonic power and a high interest, its poor natural hydro-hegemonic power makes the Nile River Basin the one lacking an absolute hydro-hegemon, at least for now. Technical hydro-hegemonic power is a necessary but insufficient factor for establishing absolute hydro-hegemonic power in a given transboundary river basin (Frey and Naff, 1985). Egypt is the only country globally with poor natural hydro-hegemonic power, but which is still recognised as an absolute hydro-hegemon. Indeed, it is Ethiopia’s failure to exercise its natural hydro-hegemonic power, coupled with its minimal interest from 1805 to 1991, that has enabled Egypt to exercise reputational/technical hydro-hegemonic power in the Nile River Basin (Cascão, 2009; Zeitoun et al., 2013). The post-1991 hydropower development initiatives, including the construction of the GERD, however, clearly demonstrate Ethiopia’s increasing interest and commitment to exploiting its positional advantage in the Nile River Basin (Zeitoun et al., 2013; Cascão and Nicol, 2017).

Methods

In examining the role of GERD in enhancing regional energy integration and promoting water-geopolitical equilibrium in Northeast Africa, we utilized both primary and secondary sources. Primary data was mainly gathered through key informant interviews. Accordingly, semi-structured and probing questions were posed to 12 experts, authorities, and researchers from the Ministry of Water and Energy of the Federal Democratic Republic of Ethiopia (FDRE), the Ministry of Trade and Regional Integration of the FDRE, Ethiopian Electric Power (EEP), the Institute of Foreign Affairs, and Addis Ababa University (AAU) (see Appendix 1). Additionally, we attended international conferences hosted by Ethiopia’s Institute of Foreign Affairs and monthly series workshops organised by the Ministry of Foreign Affairs of the FDRE, taking notes from the perspectives of senior ambassadors and water geopolitics experts. Interviewing researchers from the Institute for Peace and Security Studies and the Institute of Ethiopian Studies at Addis Ababa University helped to balance the perspectives and information gathered from government officials, and members of the GERD negotiation team.

The unwillingness of key informants to respond to our WhatsApp and email interviews prevented us from including the views of non-Ethiopian scholars and officials in the study. To address this methodological limitation and further triangulate the data, we used various statements, reports, and openly available policy documents from the downstream country governments’ official websites. In addition, we consulted books, academic papers, and journal articles using Google Scholar, as well as conducted extensive library work. Accordingly, reports from the International Energy Agency (IEA), the African Energy Chamber (AEC), and the International Renewable Energy Agency (IRENA) were used.

We also referenced the 1964 USBR feasibility study report, the Ethiopian National Electrification Programme (NEP) roadmap report, and the Ethiopian Electric Power report. This study also used open-access bilateral and trilateral agreement documents, such as the 1959 Nile Agreement, the 2015 Declaration of Principles (DoP), and the International Panel of Experts' (IPoE) Final Report on the Grand Ethiopian Renaissance Dam Project, as well as statements from Egyptian and Ethiopian officials and press releases.

The key informants were purposively selected for their knowledge, exposure, and experience vis-à-vis the role of the GERD in promoting regional energy integration and geopolitical equilibrium. Snowball sampling was also employed in some instances. The interview conducted based on the full consent of the interviewees and at their convenient time and place. Applying various data collection techniques, attending workshops and conferences, and participating in debriefing sessions and PhD class seminars helped us to triangulate the data and further strengthen the objectivity of the research argument. The data collected were grouped into two broad themes and qualitatively described using the realist paradigm as follows.

The GERD: An Impetus for Regional Energy Integration

According to the International Energy Agency (IEA et al., 2023) and the African Energy Chamber (AEC, 2023), access to electricity in Northeast African countries (except Egypt) is low. In Ethiopia, more than 55 million people lack electricity, and over 90 per cent do not have access to clean fuels (Sachs et al., 2023). Ethiopia ranks first in Northeast Africa and third in the world in energy access deficits (IEA et al., 2023). Intra-regional energy trade between Northeast African countries is also very low (EEP, 2023). The energy deficit hampers economic growth, weakens the delivery of vital public services, and impedes efforts to achieve the Sustainable Development Goals (SDG) (Blimpo and Cosgrove-Davies, 2019).

Table 1: *Northeast African Countries' Access to Electricity and Achievement Index of Sustainable Development Goals*

Country name	Access to electricity (% of population), 2021	SDG performance index (% of achievement), 2023
Egypt	100	69.6
Kenya	76.5	60.9
Sudan	61.7	48.6
Ethiopia	54.1	54.5
Eritrea	52.5	NA
Djibouti	65.4	52.7
Somalia	49.3	48.0
South Sudan	7.7	38.7

Sources: World Factbook, 2023; Sachs et al., 2023; African Energy Chamber, 2023.

As shown in Table 1, except for Sudan, access to electricity correlates positively with the achievement of SDGs. Despite its severe energy shortage, Ethiopia has the largest hydropower potential in Northeast Africa and the second largest on the continent (AEC, 2023). It is endowed with over 45,000 MW of hydropower, more than 1,350,000 MW of wind power, and over 10,000 MW of geothermal potential (EEP, 2023). However, of its 45,000 MW total hydroelectricity potential, Ethiopia utilizes only 7,613.70 MW, or 17 per cent (EEP, 2025). Apparently, harnessing Ethiopia's extensive hydropower potential is crucial for addressing the region's energy deficit and stimulating energy trade. According to the Ethiopian National Electrification Programme projection, Ethiopia is expected to export 5,562 MW of electricity to neighbouring African countries by 2030 (see Table 2).

Table 2. *Ethiopia's Electricity Export, 2030 Projection*

Country	Electricity (MW)
Djibouti	100
Sudan	1,200
South Sudan	400
Egypt	2,000
Kenya	1,400
Tanzania	412
Somaliland	50
Total	5,562 MW

Sources: EEP 2023; FDRE Ministry of Water, Irrigation and Energy (MoWIE), 2019.

Achieving such an ambitious energy export plan is impossible without Ethiopia harnessing its vast hydropower potential by building large-scale hydroelectric plants like GERD. Accordingly, the GERD, with the electricity generation capacity of 5,150 MW, can increase Ethiopia's installed electricity capacity from 4,565 MW to 9,715 MW (EEP, 2025). With this energy generation capacity, the GERD could support Ethiopia's plan to enter the Northeast African energy market (KII 7, 1 January 2024). The Ethiopian Electric Power official reported that Ethiopia currently supplies 70 per cent of the electricity needs of East African countries (KII 7, 1 January 2024). Accordingly, Ethiopia exports 100 MW to Djibouti, 100 MW to Sudan, and 200 MW to Kenya per day (EEP, 2023). Additionally, Ethiopia began to export 100 MW of electricity to Tanzania using Kenya's power grid and signed a power purchase agreement with South Sudan to export 100 megawatts of electricity (EEP, 18 May 2026; Wegayehu, 2025). Currently, Kenya and Djibouti import 83 and 70 per cent of their electricity from Ethiopia, respectively (EEP, 18 May 2026; AE, 01 February 2026). Somalia, Rwanda and Burundi have also shown interest to import power from Ethiopia (KII 7, 01 January 2024; Shire, 2026).

The construction of the GERD is a key component of the ambitious energy development and regional integration goals of the EPRDF government (GTP I, 2010). The construction of GERD is, therefore, precipitated by Ethiopia's ambition to become a leading power exporter in Northeast Africa (KII 2, 9 January 2024). Ethiopia's emergence as a regional energy powerhouse, however, undermines Egypt's current efforts to become the region's leading energy force through monopolizing the energy market, and it would trigger energy trade rivalry in the region (KII 12, 28 February, 2025).

Ethiopia's goal of exporting affordable and reliable electricity to Northeast Africa and beyond requires the simultaneous development of power transmission infrastructure and regional grid integration. Currently, a 230 kilovolt (kV) single circuit line connects Ethiopia and Djibouti, and a 230 kV double circuit line links Ethiopia and Sudan (EEP, 2023). A 500 kV direct current (DC) Ethiopia-Kenya power transmission line, capable of transmitting 2,000 MW in either direction, is also in place (AfDB, 2024). Ethiopia also plans to extend a 230 kV power transmission line to Somaliland, a 230 kV line to Eritrea, and a 500 kV line to Sudan (FDRE Ministry of Water, Irrigation and Energy, 2019). Ethiopia also has a long-term plan to join the South African energy market through the Kenya-Tanzania-Zambia grid (KII 7, 1 January 2024). The GERD, therefore, is a physical infrastructure that would connect the Northeast African countries via power transmission lines.

As a major energy producer, the GERD can make Ethiopia the "power hub" of Northeast Africa, would accelerate the integration of regional power pools, and promote regional energy trade (KII 4, 9 January 2024). Besides, "GERD, as part of the AU's Programme for Infrastructure Development in Africa (PIDA) projects, would help the Eastern Africa Power Pool (EAPP) achieve its goal and thus increase power availability in the Northeast Africa"

(KII 4, 9 January 2024). As electricity is critical for catalyzing economic development, expanding industry, and providing public services, the GERD helps to stimulate the war-torn economy of both Ethiopia and the region, improve public service delivery, and enable countries in Northeast Africa to realize their Sustainable Development Goals (SDGs).

Water-Geopolitical Equilibrium Implications

The GERD is more than a hydroelectric power plant. It is a project that Ethiopia has built to achieve a water-geopolitical equilibrium or to redraw the water-geopolitical map of the Nile Basin in its favor (KII, 10 February 2024). Although Egypt views the GERD as a national security threat, Ethiopia considers it a key project aimed at rectifying past hydro-political anomalies and injustices in the Nile River Basin (KII 3, 9 January 2024). Historical, geographical, and economic factors made the upper riparian countries the primary suppliers and the lower riparian countries the primary beneficiaries of Nile River water (Cascão, 2009). For example, the 1959 Nile Agreement allocated the entire flow of the Nile River water to Egypt and Sudan, prohibiting the upper riparian countries from using it.³ Consequently, rectifying the unfair and unequal allocation of Nile water imposed by the 1959 agreement has been a key hydro-political agenda for the upper riparian countries in the post-independence period (KII, 9 January 2024). In this context, the construction of the GERD is a practical move for Ethiopia to address past hydro-political injustices and anomalies.

Perhaps the Nile River is the only river where non-contributors claim full utilization, while major contributors demand equitable and reasonable utilization of the river water.⁴ Downstream countries have experienced a dominant position in controlling and using the Nile River waters (Zeitoun et al., 2013). According to former Ethiopian prime minister Meles, “While Egypt is free to use the Nile to harness the Sinai desert, Ethiopia supplied 86–95 per cent of the Nile River water, it is deprived of using Nile water to feed its people” (in Firehiwot, 2023: 18). Contrary to the above claims, Tayie (2017) stated that Egypt and Sudan have used only 84 bcm net annual flow of the Nile River water, which is small compared to the total amount of rain in the Nile Basin that the upper riparian countries have used. However, many scholars overlooked the abundant groundwater resources that Egypt and Sudan have obtained from the Nubian Sandstone Aquifer System (NSAS). In this connection, MacDonald et al. (2012) stated that Egypt and Sudan’s estimated groundwater reserve ranges from 36,000-130,000 km³ and 37,100-151,000 km³, respectively, while Ethiopia’s estimated groundwater reserve ranges from 4340-39,300 km³. In fact, GERD poses a real challenge to the long-held claim of lower riparian countries for the full utilization of Nile River waters.

³ See *Agreement between the United Arab Republic and the Republic of Sudan for the Full Utilization of the Nile Waters*, Art. 2 (4), 08 November 1959, Cairo.

⁴ *Agreement between the United Arab Republic and the Republic of Sudan for the Full Utilization of the Nile Waters*, 08 November 1959, Cairo.

Furthermore, the GERD signifies Ethiopia's determination to utilize the Nile River water for its development purposes. Engineer Sileshi once stated, "None of us ought to stand thirsty while watching the other drink" (Sileshi, 8 July 2021). For Ethiopia, the GERD is a benefit-sharing project that symbolizes the fair and equitable use of shared resources (KII 8, 6 February 2024; and KII 2, 9 January 2024). This perspective has been reinforced by Ambassador Taye's speech at the UNSC Meeting on Peace and Security in Africa, where he said, "Egypt continues to accuse Ethiopia of taking unilateral actions concerning the construction of the GERD ... Ethiopia does not ask too much; it seeks to correct past injustices and share this precious resource equitably and reasonably" (Taye, 29 June 2020).

On the contrary, the Egyptian veteran political scholar Tayie (2019) presented GERD as a project Ethiopia constructed to secure "hydro-electric and hydro-political hegemony" in the Nile River Basin; therefore, while Ethiopian scholars consider the GERD as a development and hydro-political rectification project, their Egyptian counterparts perceived it as a threatening project that Ethiopia is constructing to assume hydro-hegemonic power. Indeed, the Ethiopia-Egypt dispute over the construction of the GERD is a hydro-political controversy rooted in extensionist and preservist views. Ethiopia wants to extend its hydro-political interest and pursue an equitable water-geopolitical order over the Nile River Basin, while Egypt seeks to maintain the existing asymmetrical water-geopolitical order that best serves its water interests. A key informant from the FDRE Ministry of Water and Energy (MoWE) stated that Egypt's repeated objection to the construction of the GERD is spurred by its fear of the resulting rise of Ethiopia's hydro-political power and changes in the water-geopolitical power equation of the Nile River Basin (KII 1, 9 January 2024). Egypt's Minister of Irrigation and Water Resources (MoIWR) similarly claims that Ethiopia built the GERD "to exert political dominance and possess unregulated and absolute control over the Nile River waters, which Egypt will never tolerate" (Ahram online, 24 December 2023). Tayie (2019: 486) added his view that Ethiopia constructed the GERD to achieve its "hidden political goal of imposing hydroelectric hegemony and securing geostrategic leadership in the Nile Basin."

From 1805 to 1991, Ethiopia failed to exercise its natural hydro-hegemonic power over the Nile River (Hanke, 2013; Erlich, 2002). At this time, technical, economic, and historical circumstances enhanced Egypt's control over the Nile River water (Cascão, 2009). Ethiopia's inability to exercise its natural hydro-hegemony, combined with Egypt's increased technical hydro-hegemony and interest, resulted in the pre-1991 asymmetrical water-geopolitical order in the Nile River Basin (Goitom, 2014; Cascão and Zeitoun, 2010; Ejigu, 2016). The construction of the GERD, however, unlocked Ethiopia's unexercised natural hydro-hegemonic power, improved its technical capacity, and eventually paved the way for a more symmetrical water-geopolitical equation in Northeast Africa and the Nile River Basin. In this regard, key informants from AAU described the GERD as a resource-capture project that revealed Ethiopia's natural hydro-hegemonic power over the Nile River Basin (KII 9, 7 February 2024).

The project's location and recent statements from Ethiopia's top officials suggest Ethiopia intends to use the GERD as diplomatic leverage in regional negotiations. In his parliament speech on 13 October 2023, Prime Minister Abiy indicated Ethiopia's willingness to "offer a share of the GERD to obtain cheap and permanent access to sea outlets in the Red Sea" (Ethiopian Observer, 15 October 2023). Similarly, an Ethiopian diplomat, Ambassador Girum, claimed: "The Ethiopian neighbors depend on Ethiopia's rivers, and hence Ethiopia should use its rivers as a diplomatic chip" (Girum, 2024)⁵. A key informant from AAU added that "looking at its location and size, the GERD would serve as a 'water bomb' and resource-capture strategy that Ethiopia would use to challenge the long-held technical hydro-hegemony of Egypt in the Nile River Basin" (KII 10, 12 February 2024). Therefore, the GERD is a water-geopolitical tool that Ethiopia would use to advance its physical and economic presence in Northeast Africa.

GERD improves Ethiopia's technical hydro-hegemonic power over the Nile River in different ways. First, the construction of the GERD increases Ethiopia's bargaining power. Despite the adherence of negotiating parties to their uncompromising positions, "the construction of GERD facilitated a round table dialogue between Ethiopia, Egypt, and Sudan, which was not common before" (KII 4, 9 January 2024). In almost all pre-GERD Nile agreements and cooperation efforts, Ethiopia was not a party but merely an observer. The GERD is a project that has broken the existing hydro-diplomatic deadlock, forcing Egypt, Ethiopia, and Sudan to discuss Nile affairs. At least seven trilateral dialogues have been conducted since the GERD foundation was laid, most of which, however, did not provide the hoped-for results due to all parties' relative unwillingness to compromise (Attia and Saleh, 2021). The inclusion of Ethiopia and the absence of a dominant actor dictating the GERD dialogue were the major changes that the GERD brought to the post-2011 Nile negotiations. Some trilateral agreements, such as the 2015 Declaration of Principles (DOP), represent a breakthrough in the history of Nile negotiations. In the 2015 DOPs, all parties recognized the growing demand of the three countries for Nile River water and the importance of the Nile water resource for the livelihood and development of the three countries.⁶ For some key informants, the GERD itself is an agenda that Ethiopia brought to the lower riparian countries of the Nile River (KII 3, 9 January 2024, and KII 5, 1 February 2024). From this, we conclude that the GERD gives Ethiopia hydro-diplomatic leverage and transforms its place in the Nile negotiation process from mere observer to main player and agenda-setter.

5 Speech at the book launch program on '*Ethiopia ena gorbetochwa: Ytibibir ena wizgib azurite*' (Translation: *Ethiopia and its neighbors: A cycle of cooperation and conflict*) by Belete Belachew, 08 February 2024.

6 *Agreement on Declaration of Principles between The Arab Republic of Egypt, The Federal Democratic Republic of Ethiopia and The Republic of the Sudan on The Grand Ethiopian Renaissance Dam Project (GERDP)*, 23 March 2015, Khartoum.

Second, the GERD improves Ethiopia's ideational power over the Nile River. The construction of the GERD and the concomitant mushrooming of literature, workshops, conferences, water research institutions, and even musical works exposed facts about Ethiopia–Nile relations (KII 5, 1 February 2024). The construction of the GERD has motivated Ethiopian researchers to conduct numerous studies on water-related issues, and has also led to the establishment of plenty of water research institutions in Ethiopia (KII 12, 28 February 2025). Furthermore, the Ethiopian government tried to raise public awareness of what the Nile/Abay River means to Ethiopians through the “itsmydam” hashtag and an 8100A short message service (SMS) campaign. Before the construction of the GERD, many scholars and media outlets viewed the Nile River as Egypt's sole business, and Herodotus's assertion that “Egypt is the gift of the Nile” guided the Nile discourse. Pre-GERD Ethiopian musicians and poets dubbed the Nile/Abay River a traitor that served foreign interests by draining Ethiopia's fertile soil and water to Sudan and Egypt (Abebe, 2023; Yacob, 2007). However, the post-GERD publications underlined Ethiopia's highest potential in energy production and its contribution to the Nile River water, which led to a new discourse of the river being “the gift of Ethiopia” or the “Ethiopia-born Nile.” As stated by key informants from the Institute of Foreign Affairs of Ethiopia,

The discourses on the Nile during the GERD period underlined Ethiopia's historical and natural attachment to the Nile/Abay River and raised awareness of international and local communities on the importance of the Nile for energy security and the general development of Ethiopia and the region, thus improving the ideational power of Ethiopia (KII 5, 1 February 2024).

The GERD, therefore, promotes a symmetrical water-geopolitical order in the Northeast Africa region, and the Nile Basin through enhancing the technical hydro-hegemonic power of Ethiopia.

Despite the dam's filling and construction being completed, there is no scientific evidence that the amount of water flowing down to the lower-basin countries has been reduced. In some instances, Egyptian and Sudanese dams have experienced their highest water levels ever, due to heavy rains and floods (KII 11, 02 July 2023; Ahmed et al., 2024). In this context, a key informant from Ethiopia's Institute of Foreign Affairs argued that “GERD, more than any other diplomatic effort, disproves Egypt's securitization of hydroelectric projects in the upper riparian countries and would serve as a good precedent for the construction of additional dams by the upper riparian countries” (KII 5, 1 February 2024; and KII 11, 02 July 2023). It is, however, too early to conclude that the GERD did not reduce the amount of water flowing downward. Mitigating the actual and potential impacts of the GERD requires more studies and good-faith basin-wide dialogue. Moreover, the cooperative effort of all the basin countries in implementing an integrated water and land conservation project and expanding Ethiopia's green legacy initiative in the Ethiopian highlands and equatorial region will increase the water volume of the Nile River and thus

mitigate the actual and potential impacts of the GERD on the water flow of the Nile River.

In sum, despite Egypt's continued technical hydro-hegemonic power over the Nile River, the GERD can reshape the water-geopolitical playing field by unlocking Ethiopia's natural hydro-hegemony and increasing its technical hydro-hegemonic power. In fact, in the absence of an absolute hydro-hegemonic country with both technical and natural hydro-hegemonic power, a symmetrical water-geopolitical order is the expected outcome. Therefore, aside from addressing Ethiopia's energy deficit and crystallizing regional energy integration, the GERD leads to a water-geopolitical equilibrium in Northeast Africa.

Conclusion

Landlocked countries have sought to project their physical and geopolitical influence through regional integration and interdependence. Ethiopia, the world's most populous landlocked country, considers regional integration and interdependence to be a good means of projecting its geopolitical influence over the Red Sea and Nile valleys, and has based its regional integration scheme on infrastructure development and energy export. In this regard, GERD is a physical infrastructure that enables Ethiopia to integrate the Northeast African countries by exporting renewable energy. The GERD, by pooling the Northeast African countries' power grids, crystallizes intra- and inter-regional energy trade. Energy availability, on the other hand, will improve public service delivery, facilitate industrialization, and enhance infrastructure expansion.

Moreover, the construction of the GERD demonstrated Ethiopia's desire to exercise its natural hydro-hegemony and alter the existing water-geopolitical order of Northeast Africa in its favor. The pre-GERD hydro-political dispute over Nile River water stemmed from the existing water-geopolitical power asymmetry caused by Egypt's technical hydro-hegemony and its strong desire to preserve the status quo. The construction of the GERD, however, paved the way for water-geopolitical equilibrium by revealing Ethiopia's natural hydro-hegemony and ending past water-geopolitical power asymmetries. As long as Egypt maintains its technical hydro-hegemony and Ethiopia continues to exercise its natural hydro-hegemony, a water-geopolitical equilibrium would become the new *modus operandi* of Nile hydro-politics.

However, for GERD to effectively contribute to regional energy integration and ensure water geopolitical equilibrium: First, the riparian countries of the Nile River should work together to maximise the opportunities and reduce the threats of the GERD. Second, Egypt and Sudan need to recognise the GERD's benefits for the energy needs of the Northeast African countries and acknowledge the significance of Nile River water for the development of all riparian countries. For its part, Ethiopia must address Egyptian and Sudanese concerns about mitigating the downstream impact of the GERD and abstain from reproducing past injustices and hydro-political asymmetries. Third, lower riparian countries should learn

to live with and acknowledge the new water-geopolitical developments in the region, and upper riparian countries should accommodate their demands with the rights acquired by lower riparian countries. The ongoing Ethiopia-Egypt extensionist-preservist dispute over the construction of the GERD mainly stems from a lack of willingness to accommodate their extreme positions. Therefore, solutions to the GERD-related dispute must balance Ethiopia's increasing demands to use the Nile River water and Egypt's strong desire to preserve the status quo. Fourth, amicable solutions to the Ethiopia-Egypt dispute over the GERD require readers, researchers, and policymakers to understand the GERD from the wider perspective of the resource-regional integration-geopolitical equilibrium nexus using a realist water-geopolitical framework.

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Appendix 1: List of Key Informants

Key Informants Code	Institutions	Interview Date	Place
KII 1	Ethiopia's Ministry of Water and Energy	09/01/2024	Informant's office, Addis Ababa
KII 2		09/01/2024	Informant's office, Addis Ababa
KII 3		09/01/2024	Informant's office, Addis Ababa
KII 4		09/01/2024	Informant's office, Addis Ababa
KII 5	Institute of Foreign Affairs of Ethiopia	01/02/2024	Informant's office, Addis Ababa
KII 12		28/02/2025	Sheraton Hotel, Addis Ababa
KII 6	Ethiopia's Ministry of Trade and Regional Integration	11/01/2024	Informant's office, Addis Ababa
KII 7	Ethiopian Electric Power	01/01/2024	Informant's office, Addis Ababa
KII 8	Institute of Ethiopian Studies (IES), AAU	06/02/2024	Informant's office, Addis Ababa
KII 9	Institute for Peace and Security Studies, AAU	07/02/2024	Informant's office, Addis Ababa
KII 10		12/02/2024	Institute of Ethiopian Studies Café, AAU
KII 11	Top Intelligence Official and Retired Diplomat	02/07/2023	Institute for Peace and Security Meeting Hall, AAU