Grand Ethiopian Renaissance Dam Project Controversies: Understanding the role of worldviews and nexus

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Abstract

This paper examines the complex interplay of worldviews, siloed thinking, and the 'nexus approach' in shaping the controversy on Grand Ethiopian Renaissance Dam (GERD) project. Using a worldview-nexus framework and data from 38 key informants, government documents, and secondary sources, the study identifies Egypt's water security-centered worldview and Ethiopia's development-centered policy as key drivers of conflict. Sudan, meanwhile, navigates a middle-ground position shaped by its unique hydrological and historical context. The study also reveals that Ethiopian and Egyptian worldviews illustrate mutually exclusive thinking, neglecting the interconnectedness of water, energy, food, and environmental security across sectors and borders. In both countries' worldviews, the GERD is perceived from an existentialism and securitization view which contributes to the prevailed zero-sum game politics. Furthermore, Ethiopia's development-centered worldview has also transformed the traditional narratives around the Abbay (Blue Nile) River within Ethiopia. Conversely, Egypt's water security-centered

worldview reinforces Egyptian traditional views linking the Nile to its national identity. The study suggests that adopting a nexus approach to water resources development can help reconcile the conflicting worldviews and resolution of the conflict over the GERD.

Keywords: GERD, Nile, worldview, nexus, Egypt, Ethiopia

Introduction

Ethiopia possesses the second-largest hydropower potential in Africa, following that of the Democratic Republic of the Congo, with an estimated capacity of 45,000 megawatts (MW) (Ethiopian Electric Power Corporation [EEPCo], 2014; International Hydropower Association [IHA], 2018; Ashebir, 2022). Recognized as crucial for achieving energy independence and reliable power supply, this vast potential can also accelerate regional integration through electricity exports. However, it was under the Ethiopian People's Revolutionary Democratic Front (EPRDF) regime (1991–2018) that the power sector underwent a significant transformation in Ethiopia, with the construction of mega hydropower projects on the Tekezze, Abbay, Omo-Gibe, and Genale rivers. These projects include Tekeze dam, Gilgel Gibe I, Gibe II, Gibe III dams, Beles hydropower station, Amerti Neshi, Genale Dawa III, GERD, and Koyisha (Gibe IV) dams. As a result, the installed capacity increased from 370 MW in 1991 to 5,256.5 MW in 2023, with hydropower sources contributing 4,820.2 MW (Ethiopia Electric Power [EEP], 2023). This growth in hydropower generation capacity has enabled the government to increase electrification by 56 percent (EEP, 2017) and start exporting power to Sudan, Djibouti, and Kenya, fostering regional integration.

Despite the significant expansion of hydropower over the past three decades, the development path has been met with opposition from various actors, including, riparian countries, environmental and human rights groups, and international and regional organizations. This has made the country's hydropower development path a contested

and contentious one. This is because hydropower development involves competing interests from various water users regarding their water, energy, food, and environmental security interests. GERD is a clear illustration of these contestations, with Ethiopia, Egypt, and Sudan all having interests at stake. In addition, other actors such as the U.S., European Union, Africa Union, Arab League, and United Nations Security Council have been engaged in the GERD dispute in various ways (Fabricius, 2021; EU, 2021; Ministry of Foreign Affairs, 2021; UNSC, 2021; Chen and Nardos, 2020).

The conflict surrounding the GERD is not only about its potential impacts on downstream countries' water, energy, food, and environmental security interests (Tewfik, 2016; IPoE, 2013; Salman, 2016) but it also involves competing water worldviews that have shaped the dispute. Ethiopia and Egypt have framed the GERD project as an existential necessity and an existential threat, respectively (FDRE, 2020; State Information Service, 2021; Embassy of Egypt Washington D.C., n.d; Al-Anani, 2022). Sudan, on the other hand, has taken a more nuanced approach, sometimes supporting GERD and other times voicing concerns while attempting to mediate between Ethiopia and Egypt (BBC, 2021; Otinov, 2022; Al Masry, 2017). The technical aspects of the conflict include hydrological, water allocation, geotechnical, dam safety, socio-environmental, filling, and operations, and drought management (IPoE, 2013; Salman, 2016; Seleshi, 2021).

Previous research has explored the potential downstream impacts of GERD, including its benefits and costs (Basheer et al., 2020; Asegdew and Semu, 2014; He et al., 2022; Abdelkader and Mohamed, 2019; Bekhit et al., 2019). Other scholars have contributed to the literature by studying the technical aspects of GERD (Asegdew et al., 2014; Abdo et al., 2016; Block et al., 2016) and its political implications (Cascão et al., 2019; Jeuland et al., 2014; Tawfik, 2016; Tawfik , 2015). However, little attention has been given to the role of worldviews in shaping multiple water users' perceptions and actions. This article aims to address this gap by examining how worldviews contribute to the

contestation of hydropower development in the case of the GERD project. Additionally, the article explored ways to reconcile the conflict through a combination of worldview and nexus analytical frameworks.

This article argues that the different positions of the conflicting parties are deeply rooted in contrasting worldviews—fundamental assumptions about water and its development. By employing a nexus approach that recognizes the interconnectedness of water, energy, and security, the article further argues that the fundamental problem lies in the siloed, in the sense of mutually exclusive thinking that neglects the synergy and tradeoffs among water, energy, food, and environmental security across sectors and across borders, which results in geopolitical tensions between Ethiopia and Egypt. Siloed thinking also has its roots in the differing worldviews that privilege one world over the other. Hence, transcending differing worldviews via the transformation of water resources development planning from a siloed approach into a nexus approach is a way to resolve the conflict over GERD in particular and hydropower development in general. This present paper strives to address such key questions: *How do contrasting worldviews about water and development shape the GERD conflict and influence interests/priorities? How can transforming water planning from siloed to nexus approaches reconcile worldviews and foster cooperation among water users regarding GERD?*

Research methods

This study has employed a case study research methodology focusing on the GERD project. The GERD project was chosen due to its unique features, including its size, geopolitical contexts, location, and potential benefits and drawbacks for water, energy, food, and environmental security of various stakeholders.

The Abbay River, where the GERD project is being constructed, is significant for both Ethiopia and downstream countries. For Ethiopia, the Abbay River basin is strategically important as it constitutes 20% of the country's land mass, 40% of its surface water (Seleshi et al., 2008), 40% of its agricultural products, and 48.9% of its hydropower potential (Assefa et al., 2014; MWIE, 2013). Additionally, the basin is home to over 34% of the Ethiopian population (Merrey and Tadele, 2011). On the other hand, the river also plays a crucial role for downstream countries like Sudan and Egypt, serving as the source of 62% of the Nile's flow (Seleshi et al., 2008). Moreover, the Abbay River basin is vulnerable to land degradation and the eroded soil annually is approximately 302.8 million tonnes (Seleshi et al., 2008: 28).

The GERD project itself has become a point of contention among riparian countries and has drawn the attention of external actors like the U.S., Arab League, Africa Union, European Union, and UN Security Council. Given these unique characteristics and the complexity of issues surrounding the project, the GERD presents a compelling case study for investigating how worldviews shape contestation over hydropower development.

Accordingly, data were gathered through interviews, document reviews, and literature reviews. Interviews were conducted with purposively selected 38 resource persons at two levels. At the regional level, data were gathered from key resource persons at the Eastern Nile Technical Regional Office (ENTRO). At the national level, interviews were held with purposively selected experts and officials from the Ministry of Water and Energy, Ministry of Foreign Affairs, Environmental Protection Authority, Ministry of Agriculture, Ministry of Lowland and Irrigation, Ethiopian Electric Power, Office of the National Council for the Coordination of Public Participation on the Construction of GERD, as well as researchers and academics.

Document sources were also gathered, including the Climate-Resilient Green Economy strategy, Abbay River Basin Integrated Resources Development Master Plan,

feasibility studies, policies, the 2014 constitution of Egypt, the Ethiopian Power System Expansion Master Plan, National Electrification Program, Official government statements, letters to the UNSC, UNSC resolutions, reports of International Panel of Experts, Reports of the Ethiopian National Panel of experts, Eastern Africa Power Pool (EAPP), Regional Power System Master Plan, Eastern Nile Power Trade Program study, EEP 13 Years Power Sector Plan, EEP Quarterly Newsletter, Annual Performance Bulletin, Facts in Brief, Ministry of Water and Energy annual magazines, and World Water Day magazines, United States Department of the Interior Bureau of Reclamation reports on the Land and Water Resources of the Blue Nile Basin Ethiopia. Secondary sources such as articles, books, book chapters, and reports were consulted. Online sources were also consulted. Using this methodology, this study used the national-level perspective as the primary focus of the analysis, as contestation primarily occurred at the state level. The primary focus is how the issue of GERD project is framed by the riparian countries and the role of worldviews in this framing.

Both worldviews and nexus frameworks have gained increasing attention in development and environmental sustainability studies, offering valuable insights into the factors that contribute to sustainability problems of investment and development in the water sector. However, instead of using an integrated worldview-nexus framework, they are often applied separately. For instance, Cleaver et al. (2021) used worldview as an analytical framework to study how the neglect of worldviews contributed to the failure to attain sustainable development in the water sector in Malawi and Uganda. Recognizing worldviews as an important perspective to "design and support sustainable pathways" at local and global levels, Hedlund-de Witt (2013, 133) introduced a new conceptual framework, the Integrated Worldview Framework (IWF), to be used as a lens to study global sustainable development debates.

On the other hand, several scholars conceptualized the importance of applying the water-energy-food nexus as crucial for achieving sustainable development (Cai et al., 2018; Rasul, 2016; Carr et al., 2018; Adeloye et al., 2019). Belbase et al. (2021) also concluded that a nexus-based approach is essential for effective water management and governance in Nepal's hydropower development for effective water management and governance. Several scholars applied the nexus framework to the Nile River Basin (Djordjevi et al., 2020; Djordjevi et al., 2022; Allam and Elfatih, 2019; Kheireldin, 2016). However, applying these frameworks separately can limit our understanding of how diverse worldviews and the lack of nexus approach influence resource development and conflict resolution. To address this gap, this study adopts an integrated worldview-nexus framework. In this integrative approach, worldview is used to understand how diverse worldviews have shaped the GERD conflict. On the other hand, the application of worldview as an analytical framework also contributes to our understanding of how disregarding others' worldviews contributes to conflict. Nexus is also used in a way to understand how the business-as-usual model of hydropower development planning affects water, energy, food, and environmental security across sectors and borders.

When worldview is combined with nexus, it allows for a holistic view. On the one hand, it can be used to analyze the underlying causes of the GERD conflict in light of the varying worldviews and siloed thinking. It also helps us to understand how siloed thinking and varying worldviews affect sustainability across water, energy, food, and environmental security. Additionally, it suggests ways of reconciling the competing worldviews through nexus thinking to hydropower development where the water, energy, food, and environmental security of all water users are achieved sustainably across sectors and borders. Given this, let us proceed to the conceptualization of worldview first, and then to the nexus.

Worldview has gained increasing attention as an analytical framework for identifying the causes of environmental and sustainability problems and exploring sustainable solutions (Hedlund-de Witt, 2010). However, there is no universally agreed-upon definition of worldview. Koltko-Rivera defined worldview as a set of beliefs about the nature of reality, including presuppositions about "what exists and what does not' (Koltko-Rivera, 2004). It encompasses beliefs about what is good or bad, right or wrong, and moral or immoral regarding actions, practices, behaviors, experiences, and relationships (Koltko-Rivera, 2004). It also includes beliefs about how humans interact with the non-human world, including natural, physical, and metaphysical realms (Cleaver et al., 2021). A worldview is also "a way of describing the universe" regarding "what is and what ought to be" (Koltko-Rivera, 2004). Furthermore, Koltko-Rivera (2000, p. 4) asserts that "a worldview defines what can be known or done in the world, and how it can be known or done." Worldviews may also contain untested or unprovable assumptions (Koltko-Rivera, 2004).

Worldviews also share psychological and social beliefs about natural and social order, fairness, and justice (Cleaver et al., 2021). This means that inter- and intra-community relationships are guided by these shared beliefs. A worldview also embodies vital values and interests, which are regarded as sacred and unnegotiable. It can also serve as an instrument to legitimize particular practices and actions.

A basic feature of worldviews is that a belief system is more interconnected than a mere assembly of separate, independent, fragmented, or unrelated beliefs (DeWitt, 2010). Instead, it is "an intertwined, interrelated, interconnected system of beliefs" (DeWitt, 2010). In the IWF, Hedlund-de Witt (2010, p. 133) provided a working definition of worldview as "inescapable, overarching systems of meaning and meaning-making that to a substantial extent inform how humans interpret, enact, and co-create reality." It has five interrelated aspects: ontology, epistemology, axiology, anthropology, and societal

vision (Hedlund-de Witt, 2010). Worldview is thus "a complex constellation of epistemic capacities, ontological presuppositions, and ethical and aesthetic values that converge to dynamically organize a synthetic apprehension or enactment of the world and one's experiences" (Hedlund-de Witt, 2010, p. 159).

The worldview can help us understand how the GERD hydropower project is perceived from the worldviews of the hydraulic bureaucracy of the central government of Ethiopia. It also enables us to see how downstream countries view GERD projects through their own worldviews. The worldviews of each side are partly influenced by their relationship with the river itself. Because of this, we consider the hydropower development of Ethiopia focusing on the GERD project from a worldview perspective, largely because of its importance in addressing the question of why water resources and their developments have become so contentious.

The other concept is the nexus approach. The traditional approach to hydropower development has been criticized for its narrow focus, prioritizing energy security while ignoring the impact on other sectors such as food, water, and the environment. This single-sector approach marginalizes the perspectives of other water users, exacerbating existing water, food, and environmental issues. To address these challenges, a nexus is introduced that defines water security, energy security, and food security as “inextricably linked where the actions in one sector influence the actions in other sectors” (Brears, 2018).

The nexus approach focuses on how to understand interconnections, synergies, and trade-offs among interconnected sectors and systems such as water, energy, food, and the environment (Chung et al., 2018). It is based on the assumptions that (a) there is a close linkage between energy, water, and food; (b) the production, utilization, and security of food, energy, and water are inextricably linked; (c) water, food, and energy security are interwoven with all dimensions of sustainability; (d) the nexus is under

pressure due to climate change and resource scarcity; (e) the nexus approach reduces trade-offs and builds synergies across the water, energy, food, and environment sectors (Rasul, 2016; Bhaduri et al., 2015).

While the traditional single-sector development approach is an obstacle to sustainable development, the nexus approach presents opportunities for achieving sustainable development by addressing the tradeoffs and synergy among the interconnected sectors (Carr et al., 2018). As a new paradigm, the nexus approach aims to balance competing and conflicting sectoral demands of large-scale investment in the energy, water, food, and environment sectors (Pluschke et al., 2016). It is neither a water-centric nor an energy-centered perspective. It is not merely a food or environment-centered perspective. Rather, it attempts to equally weighing sectoral objectives in an integrative manner.

The nexus approach recognizes the complex and interconnected nature of problems and calls for a need to integrate policies, investments, and data to achieve sustainability across the sectors. This, however, requires breaking the deeply rooted siloed thinking which is reinforced by each actor's worldviews and identifying synergies. In the nexus approach, the aim is "to create more with fewer resources" (Bozorg-Haddad et al., 2021). It also resolves the "complexity of the interactions between water, food, energy, climate, and human activities" (Bozorg-Haddad et al., 2021). It may also help to resolve the conflict among competing worldviews where water is perceived in different ways.

Hydropower development is an ideal case for a nexus where the interdependencies and trade-offs between water, energy, and food converges. If a cross-sectoral and cross-border nexus approach planning process is followed it can contribute to the attainment of all actors' water, energy, and food security. The absence of nexus approach would result in water, energy, and food insecurity for different water users.

The nexus approach thus helps to clearly understand the various forces that drive the GERD project and the challenges it encountered across the nexus. Moreover, the issues at stake in the case of the GERD are interconnected. They are water, energy, food, and environmental security interests of multiple water users. However, both the negotiators and the academics are driven to address it in a siloed approach. This can mean solving one problem while simultaneously exacerbating the other side of the story. It is this context that necessitates the adoption of a nexus approach that simultaneously addresses the interactions among multiple sectors and problems across sectors and borders holistically (Chung et al., 2018). Nexus is, therefore, employed to analyze how the trade-offs and synergies across the nexus in hydropower development are recognized and managed.

Worldview and nexus in the GERD conflict

The GERD project has become a source of conflict between Ethiopia and Egypt since its inception in 2011. At the heart of the conflict lie two contrasting worldviews: Ethiopia's development-centered view, focused on harnessing the Abbay River's potential for hydro-power generation, while Egypt's water security-centered view, prioritizing uninterrupted downstream water flow. While Sudan also holds a stake in the project, often its position tends to navigate a middle ground.

Ethiopia's development-centered worldview is a renewable energy-centric view constructed by the EPRDF regime through a combination of modern water ontology and the regime's developmental state paradigm, as well as Ethiopia's historical aspiration of constructing dams on the Abbay River. The EPRDF regime approached hydropower development not just from a technical standpoint, but from a set of assumptions about the world that define the regime’s priorities, interests, and strategies.

Under the EPRDF rule, poverty and backwardness were taken as an existential threat to the well-being of the people and to the continued existence of the Ethiopian state itself (FDRE, 2002). Hence, the EPRDF's developmental state paradigm views infrastructure-led development, such as hydraulic infrastructure, as strategic priorities for delivering development and bringing about structural transformation. As one resource person stated that the ruling party strongly believes in the notion that "development needs infrastructure," such as energy.[1] To this end, the EPRDF regime directed that infrastructure development should outpace demand to prevent infrastructure gaps, such as electricity shortages, from hindering economic growth (EPRDF, 2003).

Consequently, hydropower development is approached from an existential perspective. It is regarded as a viable way to realize multiple political and development goals simultaneously, including poverty reduction, becoming a middle-income country, a regional energy hub, and reinforcing regime legitimacy through development deliverables. A resource person interviewed claims that the massive construction of hydropower projects "not only emanated from the interest of the EPRDF party and government to construct new hydropower plants but also being *an inescapable obligation*".[2] This claim was also supported by another resource person who asserted that a massive hydropower development is "politically driven" because, for the government, meeting the growing energy demand across the country is not an option but an existential issue for the EPRDF party too.[3] He further noted that:

> the party promised its constituency to lift them out of poverty, feed them three times a day, and, most importantly, provide rural electrification for its base, the rural community. If the government fails to deliver on these

[1] Interview with senior researcher, Institute of Foreign Affairs, 21 August 2023.
[2] Interview with Expert, Boundary and Transboundary Rivers Affairs CEO, Ministry of Water and Energy, 15 July 2023.
[3] Interview with Directorate Director for Diaspora Participation, Public Diplomacy and International Relation, Office of National Council for the Coordination of Public Participation on the Construction of GERD, April 2022.

> promises, it risks losing its legitimacy to the extent of facing an anti-EPRDF movement.

These EPRDF regime's ways of seeing the world also align with scientific worldviews of the hydraulic bureaucrats. The latter believe in the hydraulic mission, which is based on modern water ontologies that view water as merely a resource to be exploited (Harris et al., 2017, p. 7). The hydraulic mission, the doctrine of the hydraulic bureaucracy, embraces the belief that allowing every drop of water to flow into the ocean is a waste; thus, state-led hydraulic infrastructure development is proposed to enable the capture and utilization of as much water as possible for human consumption (Rap et al., 2009, p. 396; Wester, 2009, p. 10). It also serves as a geopolitical strategy to control nature, space, water, and communities across countries engaged in massive hydraulic infrastructure construction to facilitate extensive and intensive water control and capture (Molle et al., 2009, p. 330; Conker and Hussam, 2019, p. 3; Wester, 2009, p. 10). As a result, state hydraulic agencies emerged to capture water, control and "civilize" wild nature (Conker, 2018, p. 10), and conquer frontiers (Wester, 2009, p. 10).

The convergence of the EPRDF regime's development-centered worldview and the hydraulic bureaucrat's scientific worldview led to a surge in highly modernist hydraulic projects, including GERD. However, approaching hydropower development from an existentialist perspective can lead to siloed thinking, as evidenced by High Aswan Dam in Egypt, Rosaries and Merowe dams in Sudan and the GERD project in Ethiopia.

The GERD project came to realization partly due to the convergence of Prime Minister Meles Zenawi's high modernism drive with Salini's business interests. An expert interviewed revealed thus: "when Meles requested a hydropower project surpassing the capacity of Gibe III, Salini presented him with the option of increasing the proposed installed capacity of the "border dam"-GERD under the pre-feasibility study, for a joint

project involving Egypt, Ethiopia, and Sudan."[4] Salini's ambitious mega-dam proposal was in the best interest of Meles, as he was looking for a highly modernist project to re-strengthen his political legitimacy and to construct Ethiopia's image at the center of the mega-dam. The outbreak of the Arab Spring and the 2011 revolution in Egypt further created a geopolitical opportune time to make the historical aspiration of damming Abbay a reality (Tayie, 2018: 497).

Initially, the border dam was planned as a joint project that could consider water, energy, and food security interests across borders. In 2007, the three Eastern Nile countries (Egypt, Ethiopia, and Sudan) jointly conducted a pre-feasibility study for a dam on Abbay river within Ethiopia as a multipurpose project under the Eastern Nile Subsidiary Action Program of Nile Basin Initiative (NBI), with an Egyptian expert leading the study (FDRE, 2020). However, when upstream countries signed the Cooperative Framework Agreement (CFA) in 2010 downstream countries suspended their involvement in NBI activities and projects (Tadesse, 2017), thereby creating an impasse in the development of a benefit-sharing regime. This disrupted the Eastern Nile Council of Ministers' (ENCOM) annual meetings for four consecutive years (2010-2014), effectively holding the ENTRO a geopolitical hostage (ENCOM, 30 January 2014). Moreover, the rejection of Ethiopia's proposal for multilateral projects by downstream countries hindered the potential for joint ownership and financial participation from international institutions (Salman, 2016; Tawfik, 2015). For instance, the World Bank withdrew from further considering financing the joint proposed project.[5] These factors pushed Ethiopia, the only active member of the ENTRO, to construct the GERD unilaterally. Thus, the siloed approach to the GERD could also be explained by the withdrawal of Egypt and Sudan from the proposed joint project.

[4]Interview with a Senior Energy Advisor, Ministry of Water and Energy, July 2023.
[5] Interview with Senior expert, ENTRO, May 2022.

While the siloed thinking is the underlying cause of the Nile conflict, the difference in worldview further exacerbates it. As discussed above, GERD is approached from the EPRDF regime's worldview that securitizes poverty and hydropower development by regarding it as an existential threat and necessity respectively. Hence, GERD is framed as a clean energy development project emanating from an existential necessity[6] and importance[7] to end abject poverty and bring about a structural transformation. It is also further legitimized by the discourse of decarbonization, as it supports green growth[8]. Under the Climate-Resilient Green Economy strategy, for example, the building of a climate-resilient green economy was envisioned, for which the GERD project is seen as instrumental (FDRE, 2011). Regional integration through power export is also another legitimization tool.[9]

The hydro bureaucracy also framed the GERD project as going beyond physicality. It is epitomized as the project of Ethiopia in its wholeness, encompassing past, present, and future generations, as well as the diaspora. It is the one that realizes the dream of past generations to dam the Abbay. It is also metaphorically constructed as a dam built by the present generations "blood, tears, and sweat."[10] In mainstream discourse, the GERD is portrayed as a powerful symbol of Ethiopian sovereignty, drawing inspiration from the historic victory against Italian colonizers during the Battle of Adwa (Yalemzewd, 2020). This time, however, the nation stands united against a different

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[6] Ethiopia's statement at the UN Security Council on the Grand Ethiopian Renaissance Dam, Delivered by H.E. Ambassador Taye Atske-Selassie, Permanent Representative of the Federal Democratic Republic of Ethiopia to the United Nations, at the Security Council open VTC on Peace and Security in Africa 29 June 2020, New York. Accessed September 2022 from https://www.ethioembassy.org.uk/ethiopias-statement-at-the-united-nations-security-council-on-grand-ethiopian-renaissance-dam/

[7] Interview with Directorate Director for Diaspora Participation, Public Diplomacy and International Relation, Office of National Council for the Coordination of Public Participation on the Construction of GERD, April 2022.

[8] Statement by Abiy Ahmed, Prime Minister of the Federal Democratic Republic of Ethiopia, The GERD as a site of cooperation, January 2020. Accessed Feburary 2023 from https://www.facebook.com/PMAbiyAhmedAli/posts/the-gerd-as-a-site-of-cooperationethiopia-has-an-ambition-to-build-a-modern-econ/528063495343102/

[9] Ethiopian News Agency, GERD Is Fundamentally African Project, Ambassador Argues, Ethiopian News Agency News (28 Auguts 2020), https://www.ena.et/web/eng/w/en_16600

[10] Statement by Seleshi Bekele Awulachew, Minister of Water, Irrigation and Energy of Ethiopia, at the UNSC, 8 July 2021, S/PV.8816

adversity: the scourge of poverty (Gashaw, 2023). It has united all Ethiopians behind a common purpose with a spirit of pride and unity, as it is a project owned and financed by the Ethiopian public in the spirit of oneness and ownership of the dam.[11] Ethiopians see the dam as belonging to them, expressing the sentiment with the hashtag "#ItsMyDam" (Samuel and Yohannes, 2020), working towards the common purpose of building the dam "by Ethiopians for Ethiopians."[12]

The Adwa Victory Memorial Museum inaugurated on February 2024 in Addis Ababa showcases the metaphorical connection between the GERD dam and the victory at Adwa, stressing the importance of unity in achieving triumph.[13] Both Adwa and GERD are depicted as symbols of hope for Africa, with Adwa representing the defeat of colonialism, and GERD transcending Egypt's claim of monopoly on the waters of the Nile. This metaphorical description of GERD indicates a powerful symbol of hope, victory, and unity. Furthermore, GERD project serves as an emancipatory example for Ethiopia and other upstream African nations, demonstrating the possibility of constructing a large-scale hydraulic infrastructure for power development without relying on external financial sources.[14]

The construction of GERD has brought about not only physical changes but also a transformation in the longstanding Christian worldview and narratives surrounding the Abbay River. In the Ethiopian Orthodox Christian worldview on the Abbay River, also known as *Gihon*, is epitomized as a heavenly river, based on the Bible's description in the book of Genesis 2:13. There it said thus: "And the name of the second river is Gihon: the same is it that compasseth the whole land of Ethiopia." However, the construction of the

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[11] Interview with Head, Hydropolitics and Diplomacy Desk, Ministry of Water and Energy, July 2023.

[12] Embassy of the Federal Dmeocratic Republic of Ethiopia to United Kingdom (31 July 2020). #ItsMyDam: Ethiopians and Friends of Ethiopia in the UK support GERD in virtual campaign. https://www.ethioembassy.org.uk/itsmydam-ethiopians-and-friends-of-ethiopia-in-the-uk-support-gerd-in-virtual-campaign/

13 See Ethiopian News Agency. n.d. Adwa Victory & GERD: Two Sides of Same Coin. Available at: https://www.ena.et/web/eng/w/eng_4000180

[14] Interview with geopolitical analyst based in Addis Ababa, November 2021.

GERD has transformed the Abbay River from a Christian worldview of a river that "feeds the heaven" (Oestigaard and Gedef, 2011) into an earthly river, dammed and controlled per the EPRDF and scientific worldviews, whose *telos* is powering Ethiopia.

The conventional perception of extracting more from the river than it returned to the land has been reimagined into a symbol of abundance, hope, and unity through the banner of 'Abbay for Ethiopia, Abbay for *Limat.'*[15] The negative connotations of Abbay, such as being a stealer of 'our endeared fertile soil' and a natural divider, have now been replaced by a positive one - a beacon of hope and resurgence that brings together diverse populations in their shared pursuit of prosperity[16]. The dam also altered the popular imagination of the Abbay River in poems, traditional music, and liturgical hymns.

In addition, the dam was used by the political elites to construct grand narratives to bridge ethnic divisions and to foster a shared sense of destiny around the monumental GERD project. As such, GERD emerges as a means to multiple ends simultaneously: modernization, development, nation-building, and regime legitimacy. This shows that the GERD project is not merely a physical hydraulic infrastructure that generates electricity. It is a project used as a means to transcend particularities into a collective Ethiopian identity as well as reconnecting the so-called "new Ethiopia" with its past glories and heroism against 'adversaries,' such as foreign aggressors and internal poverty, towards a new future of prosperity.

Conversely, Egypt's water security-centered worldviews perceive GERD as a threat to its national security and a potentially existential threat to its way of life.[17] It also

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[15] Interview with Boundary and Transboundary Rivers expert, Ministry of Water and Energy, July 2023.

[16] *Ibid*

[17] Letter From Sameh Shoukry, Minister of Foreign Affairs of the Arab Republic of Egypt, to the United Nations Security Council (June 11, 2021), Security Council Report (19 Jun 2020). Available at: https://digitallibrary.un.org/record/3893948/files/S_2020_566-EN.pdf; BBC, *Egyptian warning over Ethiopia Nile dam*, BBC News (10 June 2013), https://www.bbc.com/news/world-africa-22850124; Aljazeera, *Egypt's Sisi warns Ethiopia dam risks 'unimaginable instability'*, Aljazeera News (30 March 2021), https://www.aljazeera.com/news/2021/3/30/egypts-sisi-warns-ethiopia-dam-risks-unimaginable-instability

portrayed the GERD project as a regional security threat by framing it as an Arab and a regional security issue.[18] Egypt's water security-centered worldview is partly constructed based on the 1959 agreement that allocates the "full utilization of the waters of the Nile to Egypt and Sudan."[19]

This worldview sees even a single drop less water than the 1959 allocation as a threat to Egypt's water security (Alaa, 2021; Al-Anani, 2020; Hendawi, 2023). In other words, any upstream water development on the Nile is perceived as a direct threat. This perspective is evident in Egypt's proposed wording for Article 14(b) of the Cooperative Framework Agreement (CFA): "not to adversely affect the water security and *current uses* and rights of any other Nile Basin State" (Agreement on the Nile River Basin Cooperative Framework, 2010 *Emphasis Added*). Notably, the phrase "current uses" refers solely to the 1959 agreement, which only allocates water to Egypt and Sudan.

In contrast, all other Nile Basin countries (except Egypt and Sudan) agreed on Article 14(b) stating "not to significantly affect the water security of any other Nile Basin State" (Agreement on the Nile River Basin Cooperative Framework, 2010). This difference highlights a crucial point: Egypt prioritizes its water security above all else, employing a siloed approach that disregards the interconnectedness of water, energy, food, and

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[18] Aljazeera, *Arab states call for UNSC intervention over Ethiopian dam dispute* (15 June 2021), https://www.aljazeera.com/news/2021/6/15/arab-states-call-on-unsc-to-convene-over-ethiopian-dam-dispute
18 State Informaiton Services (18 JANUARY, 2022), *UNSC holds open session on GERD in response to Egypt's request* https://beta.sis.gov.eg/en/media-center/news/unsc-holds-open-session-on-gerd-in-response-to-egypts-request/; Security Council Report (15 Sepmber 2021), Security Council Presidential Statement on the Grand Ethiopian Renaissance Dam (GERD), https://www.securitycouncilreport.org/whatsinblue/2021/09/security-council-presidential-statement-on-the-grand-ethiopian-renaissance-dam-gerd.php; Ahram Online, *GERD: Another UNSC referral,* Ahram Online News (3 Auguts 2022), https://english.ahram.org.eg/NewsContent/50/1201/472530/AlAhram-Weekly/Egypt/GERD-Another-UNSC-referral.aspx; Egypt Today, *Egypt refers GERD issue to UN Security Council*, Egypt Today News (19 June 2020), https://www.egypttoday.com/Article/1/88770/Egypt-refers-GERD-issue-to-UN-Security-Council;

[19] Agreement Between The United Arab Republic And The Republic Of Sudan For The Full Utilization of The Nile Waters, Signed At Cairo, November 8, 1959 and Protocol Concerning The Establishment of Permanent Joint Technical Committee Signed at Cairo, January 17, 1960. Available at: http://www.internationalwaterlaw.org/documents/regionaldocs/UAR_Sudan1959_and_Protocol1960.pdf

environmental security across the entire basin. This is a zero-sum game that hinders cooperation and equitable solutions for the Nile problem including the GERD conflict.

The Egyptian worldview of the Nile River is heavily influenced by its relationship with the river. The river has shaped how Egyptians perceive and interact with the world as well as their relationships with both humans and non-humans. The Nile River is a crucial aspect of Egyptian identity, both in terms of self-perception and perception of the "other." It is often referred to as the "lifeblood" (Erlich, 2002) and the life-giving river to Egypt (Oestigaard, 2009).

Given the importance of what the Nile brings to Egypt, such as fertile soil and water, many scholars have observed that without the Nile, life in Egypt would not be possible[20] (Kiger, 2021; Wilkinson, 2014). The renowned Egyptologist Wilkinson (2014) noted that "without the Nile, there would be no Egypt." Haney also wrote that the Nile was "a critical lifeline that brought life to the desert literally."[21] In his book, *The White Nile*, Moorehead (1960, p. 13) observed the ultra-significance of the Nile River in Egypt as follows:

> *In these deserts, the river was life itself. If it did not flow for even one season, Egypt would perish. "Not to know where the stream came from, not to have any sort of guarantee that it would continue—this was to live in a state of insecurity where only fatalism and superstition could reassure the mind." [Emphasis original]*

This implies that Egyptians perceive the Nile as a principal force that causes Egypt to survive. As one expert noted, in the minds of Egyptians, it was conceived that "the Nile made Egypt, and then Egypt made the Nile, not as a resource shared by other riparian countries, but as an Egyptian resource alone."[22] Although Egypt has zero contribution to the annual flow of Nile River water (Laura, 2021), the river is epitomized as an Egyptian

20 Lisa Saladino Haney (n.d). Egypt and the Nile. Accessed January 2023 from https://carnegiemnh.org/egypt-and-the-nile/
21 Lisa Saladino Haney (n.d). Egypt and the Nile. Accessed January 2023 from https://carnegiemnh.org/egypt-and-the-nile/
22 Interview with expert on Hydro-politics of Nile, Addis Ababa, April 2022

river. This may be due to its essentiality in the creation of ancient Egypt, as it enabled them to access fertile 'black soil,' water, food, and transportation (Kiger, 2023). Hence, some observers assert that "without that water, there would have been no food, no people, no state, and no monuments" (Carlson, 2013).

Moreover, the Nile River has had significant importance in Egypt's metaphysical world. The Nile has historical and spiritual importance in ancient Egyptian belief system and folklore because of its connection with divine powers. As stated by Hassan (2017), God Noun was believed to be the source of the Nile's water. However, according to Baines (2011), the river's periodic surge was symbolized by the manifestation of the overweight 'Hapi,' carrying sustenance and wealth to Egypt.' According to another source, the Nile River originated from a cave on Bigeh Island located near Philae.[23] The legend suggests that god Hapi chose to reside in this location, which became the source of the river. According to folklore, in prehistoric times, the name 'Hapi' was used to refer to the Nile, and over time, people began to worship Hapi as the god of the river's annual flooding[24] (Seawright, 2012). However, the name was later replaced with 'Iterw,' which means 'the river.'[25] In the Egyptian view, the term 'Nile' was originated from the Greek word 'Neilos,' which, in turn, was derived from the Egyptian word 'Nwy,' signifying water (Seawright, 2012).

Furthermore, the Nile River was a central part of ancient Egyptian culture and festivals, with the annual inundation of the river celebrated through the "Hapi Festival" to honor the river's fertility and abundance.[26] In modern times, Egyptians celebrate

[23]Landious Travel. God Hapi. Accessed November 2022 from https://landioustravel.com/egypt/egyptian-deities/god-hapi/
24 Timelessmyths (2022). Hapi: the Egyptian Fertility God who Caused the Nile to Rise and Fall. Accessed January 2023 from https://www.timelessmyths.com/gods/egyptian/hapi/
[25] Landious Travel. God Hapi. Accessed November 2022 from https://landioustravel.com/egypt/egyptian-deities/god-hapi/; Timelessmyths (2022). Hapi: the Egyptian Fertility God who Caused the Nile to Rise and Fall. Accessed January 2023 from https://www.timelessmyths.com/gods/egyptian/hapi/
[26] Landious Travel. God Hapi. Accessed November 2022 from https://landioustravel.com/egypt/egyptian-deities/god-hapi/

"Wafaa El-Nil" (the flood of the Nile Festival, a tribute to the Nile)[27] on August 15 of each year to commemorate the Nile Flood Day, which is a contemporary version of the ancient "Arrival of Hapi" festival[28] (Abdel-Hafeez, 2018). Nile Flood Day is one way to celebrate the Nile River's historical, spiritual, identity, and cultural significance and its contribution to the development of Egyptian civilization. All of this suggests that the Nile has a profound impact on Egypt's past, present, and future, making it an integral part of Egyptian *ancien* identity and both physical and metaphysical well-being. It also shows the centrality of the Nile to the Egyptian self.

The Nile River has shaped the image of Egypt in the minds of foreigners. For instance, by giving the name "*Aigyptos*" to the Nile, Homer equated the Nile River with Egypt (as cited in Oestigaard, 2009, p. 142; 2018, p. 24). Greek historians Herodotus and Hecataeus perceived Egypt as 'the gift of the Nile' (Griffiths, 1966; Oestigaard, 2009). Heliodorus, a Syrian writer, also constructed the identity of inseparability between Egypt and the Nile River. He epitomized the Nile as "the giver of life," "the savior of Egypt," "the father of Egypt," and "the creator of Egypt" (As cited in Oestigaard, 2009, p. 143; 2018, p. 24).

This view of the Nile's water as "a lifeblood and life-giver' has shaped Egypt's national identity. Fana and Dawit (2021) observed that this way of seeing and viewing the Nile transcended mythology into the nationalism, foreign policy, and security discourses of the modern Egyptian state. This way of seeing, knowing, and relating to the river has also led the ruling elites of modern Egypt to adopt strategies for controlling the

27 Al-Ahram (15 August 2021). The Nile Flood Festival. Accessed on December 2022 from https://english.ahram.org.eg/NewsContent/32/99/419094/Heritage/Heritage-special/Republished-The-Nile-Flood-Festival-.aspx

28 It should be noted that the LGBTQ+ annual traveling festival named HAPI Festival derives its name from the ancient Egyptian Hapi festival. The organizers justify the use of the name by citing the fact that, by controlling the flow of the Nile, Hapi brought life-sustaining soil and abundance to the ancient Egyptians. Similarly, the LGBTQ+HAPI Festival seeks to provide long-lasting support and opportunities for prosperity wherever it travels. For more see Wafaa El-Nil, Accessed January 2023 from https://www.twinkl.com/event/wafaa-el-nil-2023; HAPI Festival, Accessed January 2023 from https://hapifestival.com/what/

waters of the Nile, ranging from imperial expansion to securitization (Al Rasheedy and Hamdy, 2007; Hassan, 2017; Samuel and Yohannes, 2020; Gashaw, 2019). Such beliefs have led the ruling elites of modern Egypt to embrace an ontology that views Nile water as a living being inseparable from Egypt's history, civilization, culture, identity, and the supernatural world as a dominant and hegemonic worldview of the Nile River's water utilization and governance. For instance, successive Egyptian leaders have attempted to promote the discourse on Egypt's absolute dependence on the Nile and the legal doctrine of acquired and historical rights. The preamble of the 2014 constitution of the Arab Republic of Egypt has attempted to legalize the view of the Nile as a "living being," stating that "Egypt is the gift of the Nile for Egyptians and the gift of Egyptians to humanity."[29] It has also constitutionalized the monopolistic claim of Nile water as found in their Nile worldview: "The state shall protect the River Nile and preserve Egypt's historical rights."[30] It is these interconnected views that pushed Egypt to frame the GERD as its existential threat.

Differently, Sudan's perspective differs from Egypt and Ethiopia due to its unique historical and geographical relationship with the river, Ethiopia, and Egypt. Sudan's worldview on the Nile and the GERD can be understood through the lens of the middle ground. Sudan's position on the GERD has been inconsistent, swinging between aligning with Egypt and Ethiopia, and sometimes playing a bridging role between the two (BBC, 2021; Otinov, 2022; Al Masry, 2017).

During the commencement of the GERD in 2011, for example, Sudan expressed concerns about the potential impact of the dam on its water supply and the safety risks associated with it (Salman, 2018). However, later Sudan shifted its position and acknowledged the GERD as a project that could benefit them. Furthermore, Sudan

[29] Constitution of The Arab Republic of Egypt, 2014.
[30] Article 44, Constitution of The Arab Republic of Egypt, 2014.

declined to sign the March 2020 Arab League resolution on the GERD, stating that it was against their interests and could strain Arab-Ethiopian relations (Addis Standard, March 2020; MoFA, March 2020). Ethiopia praised Sudan's "principled position" as a voice of reason and justice (MoFA, March 2020). However, Sudan later changed its stance, declaring the GERD as a security threat to millions of Sudanese and referring the case to the United Nations Security Council (Reuters, June 2021). In a letter to the UNSC in June 2021, Sudan highlighted that the unilateral filling of the dam could pose risks to the safety, security, and regional peace (Reuters, June 2021).

One factor contributing to this inconsistency is Sudan's geography. Sudan serves as a geographical and hydrological bridge between upstream Ethiopia and downstream Egypt. The major tributaries of the Nile, such as the White Nile and tributaries from Ethiopia, i.e., (Abbay, Baro-Akobo, and the Tekeze-Atbara) flow through Sudan's territory into Egypt. Sudan has high irrigation potential compared to Ethiopia and Egypt (Waterbury, 2002:128). Additionally, Sudan is a signatory of the 1959 ‘Full Utilization of the Waters of the Nile; agreement, which allocates the waters of the Nile's to Egypt and Sudan. However, there is resentment in Sudan towards this agreement due to the unequal distribution of the water resources. As Sudan is located close to the GERD, the country will experience both the benefits and burdens of the dam, which may influence its position. Consequently, Sudan's worldview is largely based on seeking a middle-ground solution to the GERD issue.

The above discussion reveals that the Ethiopian and Egyptian worldviews are contradictory. What they have in common is siloed thinking, as both prioritize their world and constructed realities. This contradicts the principles of nexus thinking. Additionally, the planning of the GERD also suffers from siloed thinking. Therefore, the difference in worldview and the presence of siloed thinking are the underlying causes of the GERD controversies.

First, Egypt's water security-centered worldview contradicts Ethiopia's development-centered worldview. In Egypt's worldview, any perceived reduction from its share of water flow as per the 1959 agreement would be seen as crossing a red line. This implies opposition to water resource development in Ethiopia. On the other hand, Ethiopia's development-centered worldview prioritizes hydropower development as a means to achieve multiple ends. Sustainability and nexus thinking are absent in these two worldviews. Instead, water security and energy security are prioritized and nationalized in Egypt and Ethiopia, respectively. Second, the Ethiopian development-centered worldview may also pose a threat to the continuity of the water worldview and the constructed realities of Egypt. Third, the analysis shows the need for reconciling the conflicting worldviews as a way to resolve the GERD conflict. Fourth, there is a need to change water resource planning from a siloed approach to a nexus approach. The adoption of the nexus approach could help the three countries transcend their conflicting worldviews and conflicting interests regarding GERD's filling and operation, drought management, and water allocation.

Conclusion

In conclusion, this study examined the roles of worldview and nexus thinking in the contestation over hydropower development in Ethiopia, using the GERD project as a case study. By applying the worldview-nexus analytical framework, the study argues that contrasting worldviews and siloed thinking are key underlying factors contributing to the controversies over GERD among Ethiopia, Egypt, and Sudan.

The Ethiopian development-centered worldview prioritizes hydropower development as a driver of progress. This approach, however, lacks consideration for nexus thinking as it securitizes poverty and hydropower development as an existential

threat and necessity, respectively. Conversely, Egypt's water security-centered worldview, shaped by the 1959 agreement, sees any reduction in the water flow to downstream as an existential threat. This worldview securitizes the Nile and the GERD, viewing the latter as a challenge to Egypt's established narratives and the constructed realities.

Both Ethiopia and Egypt exhibit siloed thinking, notwithstanding the interconnectedness of water, energy, food, and environmental security across the Nile Basin. The study further reveals how the Ethiopian worldview has been reinforced by the centuries-old Christian perception about the Abbay River which symbolizes a heavenly endowment to an earthly source of power and national unity. Conversely, Egypt's worldview reinforces traditional views linking the Nile to its source of life and national identity. In the absence of commonly established legal and institutional arrangement, these contrasting worldviews contribute to the "zero-sum game" politics surrounding the GERD's filling, operation, drought management, and water allocation.

The study proposes reconciling these conflicting worldviews through a shift from the "business as usual" mode of thinking to a nexus approach which encourages transboundary, cross-sectoral planning of water resources, considering the synergies and trade-offs between water, energy, food, and environmental security. Implementing a nexus approach would require transcending narrow worldview paradigms and fostering cooperation among the riparian states. This would lead to a resolution of the controversies over GERD in particular and sustainable management of the Nile Basin in general.

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