

ETHIOPIA'S DIPLOMACY TOWARD SUDAN IN THE DISPUTE OVER THE NILE RIVER WATER FLOW

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Abstract

The Nile River is a transboundary water resource of strategic importance for countries in East and North Africa. The development and management of water infrastructure, particularly concerning the regulation of the Nile River's water discharge, have generated disputes among Ethiopia, Sudan, and Egypt. This dispute involves not only technical aspects of water management but also political dynamics, national interests, and the distribution of power at the regional level. This study aims to analyze the role of water diplomacy in managing the Nile water discharge dispute by employing realism as a school of thought to understand state behavior. The research adopts a qualitative approach based on document analysis of international agreements, reports from international organizations, and relevant academic literature. The findings indicate that water diplomacy serves as an important instrument for maintaining regional stability, yet its effectiveness is strongly shaped by diverging national interests and asymmetric power relations among the riparian states. From a realist perspective, cooperation in the Nile dispute remains fluid and conditional, as it can shift when core strategic interests are perceived to be threatened. Therefore, water diplomacy in the Nile River dispute reflects an ongoing tension between cooperation and competition, illustrating broader power dynamics within the regional international system.

Keywords: water diplomacy, Nile River, water discharge dispute, realism, international relations

INTRODUCTION

Clean water is a fundamental necessity that not only sustains human life biologically but also serves as a cornerstone for economic development, food security, and social stability within a state. In many regions of the world, including Sub-Saharan Africa, water scarcity has evolved into a complex geopolitical issue, as it directly affects vital sectors such as irrigation, energy production, and public health (Zergaw, 2024). In the Nile Valley region in particular, dependence on a single major river system renders water a strategic resource capable of fostering either cooperation or conflict. When water distribution is unequal and governance institutions are weak, competition over this resource transcends technical management issues and transforms into questions of sovereignty and interstate dominance (Gelaw & Debele, 2024).

The Nile River exemplifies the paradox between shared necessity and competing national interests. Flowing over 6,600 kilometers and traversing eleven countries, the Nile serves as a lifeline for more than 300 million people, including Ethiopia and Sudan as two key upstream and midstream actors (Basheer et al., 2024).

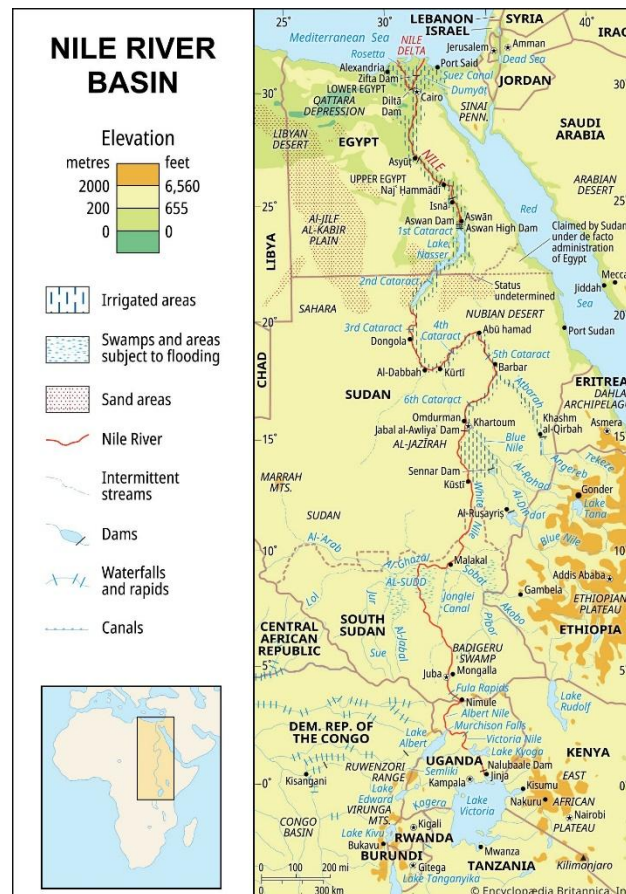


Figure 1. Nile River

The Nile originates from two primary tributaries: the Blue Nile and the White Nile. The river's flow is predominantly supplied by the Blue Nile, which originates in the Ethiopian Highlands and contributes approximately 60–67 percent of the total Nile water volume, particularly during the rainy season (Allam & Allam, 2019). Sudan's dependence on the Blue Nile is substantial; approximately 93 percent of Sudan's irrigation systems rely on this river, and nearly 60 percent of its electricity generation depends on dams along its course, such as the Roseires and Sennar dams (Siddig et al., 2020). Under these conditions, Nile waters represent not merely a natural resource, but an existential pillar for the states along its basin.

Against this geopolitical backdrop, states involved in the Nile water issue have undertaken various efforts to secure their respective national positions and interests. Ethiopia, as an upstream state, has leveraged its geographical advantage to initiate the construction of the Grand Ethiopian Renaissance Dam (GERD) since 2011. With a reservoir capacity of up to 74 billion cubic meters and a planned power generation of 5,150 megawatts, the dam is designed to more than double Ethiopia's national electricity capacity and enable power exports to neighboring countries (Brookings, 2020; Al Jazeera, 2025). GERD thus represents not only an infrastructure project but also a symbol of Ethiopia's national resurgence and self-reliance. The dam's construction was financed without external assistance, reflecting Ethiopia's emphasis on sovereignty in national development (Brookings, 2020). However, Ethiopia's unilateral approach to constructing and filling the dam without a binding legal agreement has generated serious concerns, particularly for Sudan and Egypt, both of which depend on stable downstream water flows (Basheer et al., 2024).

Ethiopia's foreign policy over the past two decades has demonstrated an increasingly confident and autonomous orientation. Under Prime Minister Abiy Ahmed's leadership since 2018, Ethiopia has promoted a regional diplomatic strategy known as *Horn First*. This strategy emphasizes the primacy of regional actors in resolving conflicts and advancing development without reliance on external powers or Western states (Yeshiwas, 2025). *Horn First* is not merely a rhetorical slogan but a framework for selective, strategic, and at times coercive regional cooperation. Ethiopia has utilized its upstream position to lead regional development initiatives, particularly through cross-border energy projects. However, this strategy also reveals a coercive dimension, especially when other states such as Sudan are not included on an equal footing in decision-making processes, particularly regarding GERD's filling and operation (Simuziya & Tigire, 2025).

Initially, Sudan supported the construction of GERD, viewing it as potentially beneficial in terms of flood control and increased electricity supply. However, this position shifted after Ethiopia unilaterally commenced the filling of the dam in July 2020 without transparent coordination. As a result, disruptions occurred in several of Sudan's water distribution systems, raising concerns about long-term water security (Dabanga, 2021; Almesafri et al., 2024). Sudan's shift from supporter to critic was further driven by border tensions in the Al-Fashaga region. While Ethiopia was preoccupied with internal conflict in Tigray, Sudan deployed troops to reclaim territory it claimed, which had long been cultivated by Ethiopian farmers. These tensions subsequently spilled over into the GERD dispute, exacerbating bilateral relations and adding further complexity to regional water diplomacy (Mohyeldeen, 2021).

Within this context, Ethiopia's water diplomacy strategy increasingly reflects the use of geographical control and influence as instruments to achieve political and economic objectives. The absence of a binding legal framework and limited transparency in reservoir filling processes have reinforced Sudan's perception that Ethiopia is acting unilaterally and prioritizing national interests over collective concerns. Such practices illustrate how a regionalist policy like *Horn First* may generate new tensions if not accompanied by principles of inclusivity and equity in the management of shared resources (Simuziya & Tigire, 2025).

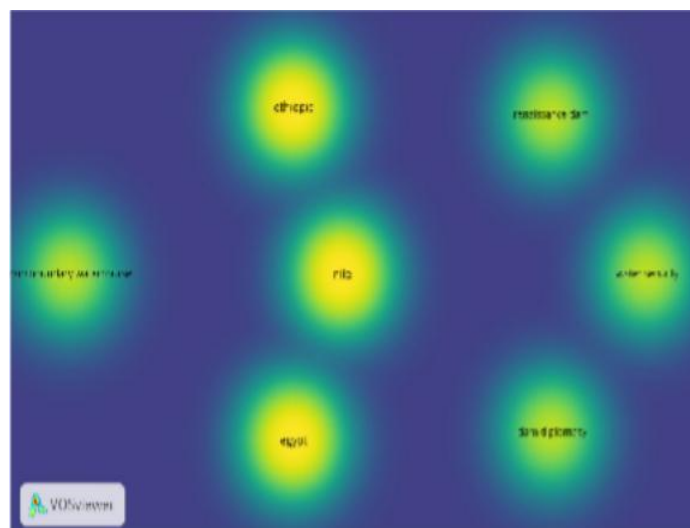


Figure 2. Density Visualization Results

Based on bibliometric analysis using VOSviewer, the academic literature on water disputes in the Nile Basin is dominated by keywords such as “Nile,” “Ethiopia,” and “Egypt,” which exhibit high density in the visualization. This concentration indicates that most previous studies have focused on general regional geopolitical dynamics or multilateral conflicts involving the three principal Nile Basin states: Ethiopia, Egypt, and Sudan. Within dominant

academic narratives, Ethiopia and Egypt are frequently portrayed as the primary antagonists, while Sudan is often depicted as an ambiguous or inconsistent third party (Caruso, 2022).

The keyword “*Nile*” occupies a central position in the literature due to the river’s role as the primary water source for all three countries and its complex historical, political, and ecological dimensions. For example, Wheeler et al. (2020) emphasize the importance of new risk management approaches in Nile water utilization following the construction of GERD. However, in such studies, Ethiopia’s role is more commonly analyzed in the context of a regional power shift vis-à-vis Egypt rather than within a focused bilateral relationship with Sudan.

Additionally, keywords such as “*transboundary watercourse*” and “*renaissance dam*” also display high density, reflecting scholarly attention to international water law, transboundary governance, and large-scale water infrastructure development related to GERD. Gelaw and Debele (2024), for instance, stress the importance of international water conventions in mediating transboundary disputes among Ethiopia, Egypt, and Sudan. Similarly, Caruso (2022) discusses how Ethiopia’s historical non-adherence to colonial-era water agreements favorable to Egypt has shaped GERD as a symbol of sovereignty and national development.

In contrast, strategic and security-oriented keywords such as “*water security*” and “*dam diplomacy*” occupy only moderate positions in the density map. This suggests that approaches framing water resources as political instruments and emphasizing coercive water diplomacy remain underexplored in existing scholarship. This gap is particularly significant given Ethiopia’s use of GERD as leverage over downstream states. While Wheeler et al. (2020) acknowledge the political risks and tensions associated with the dam, these dynamics are not examined in depth as part of Ethiopia’s coercive diplomatic strategy in bilateral relations.

Furthermore, the mapping results reveal a lack of focused analysis on bilateral relations between Ethiopia and Sudan. This is notable given that Sudan is among the states most directly affected by GERD, both technically and politically, particularly amid its post- 2019 governmental transition (IAI, 2022). Most existing literature continues to frame Sudan within a trilateral perspective rather than as a bilateral partner in Ethiopia’s strategic diplomatic calculations. Studies such as Simuziya and Jalu (2025) address broader U.S. foreign policy toward the region but do not provide specific insights into Ethiopia–Sudan dynamics from a power politics perspective (Almesafri et al., 2024).

The absence of keywords such as “*Sudan*,” “*bilateral relations*,” or terms reflecting coercive diplomacy in the visualization further reinforces the argument that the use of water as a political pressure tool by Ethiopia toward Sudan has not been systematically analyzed. This indicates a significant academic gap, particularly in integrating realist perspectives and coercive diplomacy frameworks into studies of water conflict in the Nile Basin.

Against this backdrop, this study seeks to fill the existing gap by analyzing Ethiopia’s bilateral diplomatic strategy toward Sudan in the context of the Nile water dispute and the construction of GERD. Rather than focusing solely on legal or regional cooperation perspectives, this research employs a framework combining realism, water diplomacy, and coercive diplomacy to examine how Ethiopia leverages its upstream position to influence and pressure Sudan’s water policies. In doing so, this study aims to contribute both theoretically and practically to the literature on international relations and natural resource diplomacy, which has thus far been dominated by multilateral narratives.

METHODS

This study employs a qualitative research design with the unit of analysis focusing on the Ethiopian government's diplomacy toward Sudan in the dispute over the construction of the Grand Ethiopian Renaissance Dam (GERD). This approach is chosen to obtain an in-depth understanding of interstate relations, diplomatic strategies, and foreign policy motives underlying the conflict and negotiations concerning the Nile River's water flow. Data are collected from official documents, government statements, diplomatic notes, and multilateral forums such as the African Union (AU) and the Intergovernmental Authority on Development (IGAD), with particular attention to the Nile water dispute, Ethiopia's diplomatic strategies, water diplomacy practices, and Sudan's responses. All data are analyzed through a realist perspective, which emphasizes that state diplomatic actions are driven by national interests, security concerns, and the balance of power within an anarchic international system.

Data collection is conducted through a literature-based desk study using a systematic review of academic publications, official statements, reports from international organizations, and reputable media sources, employing keywords relevant to GERD diplomacy. A snowballing technique is used to expand the range of sources, with a temporal limitation from 2020 to 2025 to ensure relevance to the most recent dynamics of the Nile River dispute. Data sources include official documents from the Ethiopian and Sudanese governments, peer-reviewed journal articles, reports by international institutions, and coverage from internationally recognized media outlets.

The research instrument consists of a document analysis guide designed to select, classify, and interpret data based on categories such as actors, interests, diplomatic strategies, and patterns of cooperation and conflict, which are subsequently analyzed within the frameworks of realism and water diplomacy. Data analysis is conducted using thematic content analysis with coding based on the main research themes. Validity is ensured through source triangulation and cross-document comparison, while reliability is maintained through systematic documentation of data sources and the consistent application of analytical instruments. This research is non-field-based and conducted entirely as desk research from the researcher's domicile, utilizing academic journal databases, online policy repositories, and university library facilities.

RESULTS AND DISCUSSION

Bilateral Relations between Ethiopia and Sudan Before and After the Construction of GERD

The risk of conflict escalation between Ethiopia and Sudan over the Grand Ethiopian Renaissance Dam (GERD) remains high, as the dispute extends beyond technical considerations to encompass political, economic, security, and climate change dimensions. Water stress induced by climate change in the Nile Basin intensifies resource scarcity and encourages states to prioritize domestic interests (WMO, 2023), while divergent threat perceptions—where Ethiopia views GERD as a symbol of sovereignty and development, and Sudan perceives it as a potential risk to water security—deepen the gap between national interests (Yohannes, 2024). Negotiation deadlock, low levels of mutual trust, and the tendency of states to rely on bargaining power and coercive strategies within a realist framework further amplify the potential for conflict (Broska, 2024). Long-term projections also identify the Nile Basin as a high-risk conflict zone if transboundary cooperation is not strengthened (Sadoff et al., 2020), underscoring the need for binding, transparent, and adaptive cooperation mechanisms to reduce escalation risks in the future.

Factors Contributing to Conflict and Sudan's Shift in Position The Al-Fashaga Border Dispute

The Al-Fashaga border dispute represents a major flashpoint in Ethiopia–Sudan relations due to the area's high strategic and economic value as fertile agricultural land located between the Atbara River and the Blue Nile. Although the territory is legally recognized as part of Sudan under international law, longstanding *de facto* arrangements allowed Ethiopian farmers to cultivate the land for decades until conflict re-emerged in 2020, when Sudan reclaimed the area amid Ethiopia's internal conflict in Tigray (International Crisis Group, 2021). This dispute is driven not only by territorial considerations but also by its instrumentalization in Sudanese domestic politics to bolster national legitimacy, as well as its use as leverage in GERD negotiations involving Ethiopia, Sudan, and Egypt (Donelli, 2021; BBC, 2021). The economic significance of Al-Fashaga as a food production hub, combined with climate change pressures, further enhances its strategic importance (Chatham House, 2023). Consequently, Al-Fashaga symbolizes the intersection of territorial interests, food security, water diplomacy, and regional power dynamics, and without a comprehensive resolution mechanism, it will continue to pose a significant risk of future conflict escalation.

Divergent Technical and Security Perspectives on the Dam

The construction of GERD constitutes the primary source of tension between Ethiopia and Sudan due to differing technical and security perspectives regarding the dam's filling and operational mechanisms. Sudan demands a binding technical agreement to mitigate risks to downstream dam safety and the stability of Blue Nile flows (Al Jazeera, 2021; Basheer et al., 2020), whereas Ethiopia emphasizes national sovereignty and the urgency of energy development to justify unilateral filling (Arab News, 2021). Low levels of trust, limited transparency in operational data sharing, and prolonged negotiation stalemates reinforce concerns that GERD could be employed as a tool of political pressure, particularly amid heightened border tensions such as those in Al-Fashaga (International Crisis Group, 2020; *Water*, 2024). These differences reflect a fundamental clash between Ethiopia's economic development priorities and Sudan's need for technical, environmental, and infrastructural security. Without binding and transparent joint technical mechanisms, the risks of technical miscalculations, political escalation, and cross-sectoral economic and social impacts will remain substantial (Swain, 2011; Wheeler et al., 2016).

Domestic and Regional Political Pressures

Tensions between Ethiopia and Sudan over GERD are significantly shaped by domestic political dynamics and regional pressures. In Ethiopia, GERD is framed as a symbol of sovereignty and national renaissance, reinforcing government legitimacy amid internal conflicts and narrowing the scope for diplomatic compromise (International Crisis Group, 2021; Verhoeven, 2015). In Sudan, post-Bashir political transition, public pressure concerning dam safety risks, and the dominant role of the military in strategic affairs have driven the government toward a defensive and cautious negotiation stance (Al Jazeera, 2021; Yihdego et al., 2017; Cascão & Nicol, 2016). Regional pressures, particularly from Egypt, combined with the Al-Fashaga border conflict, have further eroded trust and complicated Sudan's diplomatic position (BBC News, 2021; Tawfik, 2016). The convergence of national symbolism, civil–military rivalry, and regional geopolitics has produced a persistent diplomatic deadlock, rendering international mediation efforts less effective and heightening the risk of conflict escalation in the region (Salman, 2016; International Crisis Group, 2021).

Ethiopia's Water Diplomacy Strategy toward Sudan Water Diplomacy as an Instrument of Foreign Policy

Water diplomacy in Ethiopia–Sudan relations has evolved beyond a purely technical domain into a strategic instrument that integrates political, economic, and environmental interests within Ethiopia's foreign policy framework (Adelphi & Federal Foreign Office, 2014). Ethiopia employs water diplomacy to frame the Grand Ethiopian Renaissance Dam (GERD) as a regional project offering shared benefits—such as flood control, clean energy supply, and climate adaptation—while simultaneously consolidating its position as a key actor in the Blue Nile basin (Cuppari, 2017; Hussein et al., 2023; Krzymowski, 2021). Through multilateral forums and public diplomacy, Ethiopia seeks to build trust and reduce threat perceptions, although these efforts are constrained by divergent national interests and persistent negotiation deadlocks (Schmeier, 2018). Consequently, water diplomacy functions not only as a conflict-prevention mechanism but also as a form of soft power and a tool for strengthening Ethiopia's domestic and international legitimacy in the governance of transboundary water resources.

Ethiopia's Upstream Position

Ethiopia's position as an upstream state on the Blue Nile provides it with significant strategic leverage in the management of transboundary water resources. The Blue Nile contributes approximately 85 percent of the Nile's flow to Sudan and Egypt, making Ethiopia's water policies critical to the economic and social stability of downstream states (Brookings, 2021). The construction of GERD further reinforces this position by granting Ethiopia physical control over the volume and timing of water flows, which can be utilized to advance domestic energy and irrigation objectives (Cascão & Nicol, 2016).

This advantage is not merely geographical but also political and economic. Ethiopia can leverage its upstream position to establish strategic partnerships, including electricity exports from GERD to Sudan and benefit-sharing arrangements encompassing flood control, technology transfer, and energy supply stability (Wheeler et al., 2020). Such approaches have the potential to ease political tensions while fostering positive interdependence among riparian states.

However, the exercise of this strategic leverage is constrained by international legal norms, particularly the principle of *no significant harm* as articulated in the Helsinki Rules and the UN Watercourses Convention, which obligate Ethiopia to avoid adverse impacts on downstream states (Cascão & Nicol, 2016). An aggressive use of upstream leverage risks triggering conflict escalation, diplomatic isolation, and the formation of counter-alliances by Sudan or Egypt.

Moreover, security considerations and climate change exacerbate the risks associated with unilateral water management. Strategic infrastructure such as GERD is vulnerable to political and security pressures, while increased rainfall variability driven by climate change may generate new sources of conflict if not managed adaptively (Wheeler et al., 2020). Accordingly, data-sharing mechanisms, coordinated water-release protocols, and regular technical coordination forums are essential instruments for confidence- building.

Thus, Ethiopia's upstream position should be understood not merely as an instrument of power, but also as a potential diplomatic asset. If managed collaboratively, this position can serve as the foundation for strategic partnerships that promote stability, security, and shared prosperity in the Nile Basin, transforming potential conflict into opportunities for regional cooperation.

The Relationship between the “Horn First” Strategy and Water Resource Governance

Ethiopia’s “Horn First” strategy prioritizes the Horn of Africa as the core focus of its foreign policy, aiming to enhance domestic stability while expanding regional influence. Within this framework, GERD is positioned not only as an energy project but also as a geopolitical instrument that underscores Ethiopia’s status as an upstream state controlling the flow of the Blue Nile, while simultaneously serving as a symbol of national self-reliance and diplomatic leverage vis-à-vis Sudan and Egypt (Horn Review, 2025).

This geographical advantage grants Ethiopia a form of power commonly described as *hydro-hegemony*, namely the ability to exploit control over transboundary water resources to influence the policies of other states. Through GERD, Ethiopia can regulate the volume and timing of water flows to Sudan, directly affecting Sudan’s agriculture, flood management, and energy supply (Political Pandora, 2025). Water, therefore, functions not merely as a technical resource but as a strategic political instrument.

Ethiopia frames GERD as a project delivering shared benefits, including flood control, enhanced irrigation, and regional electricity provision. However, unilateral actions—particularly the filling of the dam without a finalized technical agreement—have reinforced Sudan’s distrust and intensified diplomatic tensions (Horn Review, 2025). These tensions are further exacerbated by Sudan’s weakened position due to domestic conflict since 2023, which has reduced its diplomatic capacity and created opportunities for Ethiopia to consolidate its strategic position (Horn Review, 2025).

This strategy generates a fundamental dilemma: while Ethiopia gains geopolitical and economic advantages, it simultaneously risks provoking regional instability if downstream interests are marginalized (Political Pandora, 2025). Moreover, the instrumentalization of water for political purposes carries environmental consequences, including potential ecosystem disruption and altered sedimentation patterns that may undermine agricultural productivity in Sudan (Political Pandora, 2025).

Accordingly, the “Horn First” strategy exhibits a dual character—offering opportunities to strengthen Ethiopia’s regional leadership while simultaneously generating new sources of conflict. Its success ultimately depends on Ethiopia’s ability to conduct inclusive water diplomacy, establish equitable benefit-sharing mechanisms, and refrain from unilateral actions that could undermine regional stability (Horn Review, 2025).

Non-Military Coercive Actions in the Context of Water Diplomacy

In the GERD dispute, Ethiopia has implemented a strategy of non-military coercive water diplomacy, involving the use of political, technical, and symbolic pressure without resorting to armed force, yet remaining effective in influencing downstream states. This strategy is grounded in Ethiopia’s position as an upstream state controlling the primary source of Blue Nile flows, enabling it to regulate the pace of development and water management as a form of diplomatic leverage (Hegemony and Asymmetry, 2018).

The most prominent example is the second filling of GERD in July 2021, carried out despite the absence of an agreement with Sudan and Egypt. This action created a *fait accompli* and reaffirmed Ethiopia’s sovereignty over the project (Egypt Politics, 2021). It triggered diplomatic protests, particularly from Sudan, which expressed concerns regarding the safety of the Roseires Dam as well as the stability of irrigation systems and electricity supply (OpenDemocracy, 2021).

Beyond reservoir filling, Ethiopia has also employed public communication strategies and accelerated construction timelines as forms of symbolic pressure, emphasizing that the project

would proceed regardless of international opposition. This approach compelled Sudan and Egypt to negotiate within a framework largely shaped by Ethiopia's predetermined conditions (Hegemony and Asymmetry, 2018).

From a realist perspective, this approach illustrates how control over natural resources can function as an instrument of power comparable to military capabilities. By combining technical, political, and symbolic pressure, Ethiopia has operationalized water diplomacy as a coordinated coercive strategy designed to maximize national interests while maintaining a dominant position in the GERD dispute.

Analysis Based on the Realist Approach

The Principle of State Self-Interest in Resource Conflicts

From a realist perspective, the international system is inherently anarchic, compelling states to act primarily on the basis of self-interest in order to safeguard sovereignty and survival. This logic is clearly reflected in the GERD dispute between Ethiopia and Sudan, where both states prioritize national interests in managing the Blue Nile (International Crisis Group, 2021).

For Ethiopia, GERD represents a symbol of sovereignty, national revival, and a long-term strategy to secure energy supplies, promote industrialization, and enhance its regional standing. Conversely, for Sudan, the Blue Nile constitutes a vital source of food security and economic stability, rendering water supply security and dam safety risks top national priorities (Geneva Water Hub, 2017).

This clash of interests intensified when Ethiopia proceeded with unilateral dam filling in the absence of a legally binding agreement. From a realist standpoint, such actions reflect Ethiopia's determination to preserve sovereign control, while Sudan's response—strengthening alliances with Egypt—demonstrates the use of diplomacy and collective power as tools to protect national interests (Water Alternatives, 2016).

Divergent perceptions of risks and benefits render self-interest both a driver of policy and an obstacle to compromise. Ethiopia fears that legal constraints would undermine its sovereignty, whereas Sudan worries that the absence of technical guarantees could threaten its agriculture and water security (International Crisis Group, 2021; Geneva Water Hub, 2017). The GERD case also illustrates a classic realist dilemma: when all actors maximize self-interest, outcomes may resemble a zero-sum game, reducing opportunities for regional cooperation in energy, irrigation, and trade. In this dispute, self-interest is not only externally rational but also shaped by domestic political legitimacy concerns in both countries (International Crisis Group, 2021).

Thus, the GERD dispute demonstrates that while self-interest is central to explaining transboundary resource conflicts, without trust-building mechanisms and cooperation frameworks, narrow national interests may ultimately undermine long-term regional stability (Water Alternatives, 2016).

The Role of Power and Bargaining Positions in Bilateral Relations

Within the realist framework, power constitutes the primary determinant of state behavior and bargaining positions in international relations. The GERD dispute between Ethiopia and Sudan illustrates how both material and non-material power distributions shape strategies and policy stances (Cascão & Nicol, 2016).

Ethiopia enjoys a structural advantage as an upstream state controlling the physical location of the dam and the flow of the Blue Nile. This control provides significant leverage over dam filling and operations, transforming GERD into an instrument of regional economic and political power through electricity generation and export potential (Verhoeven, 2015). Such leverage enables Ethiopia to sustain the project despite international pressure.

In contrast, Sudan compensates for its relatively weaker material power through diplomacy and alliance-building, particularly with Egypt, to balance Ethiopia's dominance. Through regional and international forums, Sudan seeks to amplify political pressure and emphasize the necessity of technical coordination in water management (Water Alternatives, 2016).

Power also derives from domestic legitimacy and public opinion. Ethiopia frames GERD as a nationalist and sovereignty-driven project, strengthening governmental negotiating positions, while Sudan mobilizes narratives of dam safety and food security to support its claims (Yihdego et al., 2017). Furthermore, differences in economic needs and alternatives to negotiation (BATNA) shape bargaining positions. Ethiopia retains the option of unilateral dam filling, whereas Sudan relies on diplomatic pressure and alliance-building if negotiations fail (Zeray Yihdego et al., 2016; International Crisis Group, 2021).

Overall, the GERD dispute highlights the multidimensional and relative nature of power: Ethiopia dominates in resource control and economic potential, while Sudan leverages relational power through diplomacy and coalitions. This dynamic underscores the realist assumption that states will employ all available forms of power to protect national interests, making compromise contingent upon perceived power balance among the parties (Mekonnen, 2020; Cascão & Nicol, 2016).

The Relevance of Realism in Transboundary Resource Governance

Realism conceptualizes states as rational actors driven by self-interest. In an international system lacking a central authority, states must ensure the protection of vital interests such as security, political stability, and societal survival. This logic is particularly evident in the governance of transboundary resources—especially water—which directly affects national security and livelihoods (International Crisis Group, 2020).

The GERD case exemplifies this dynamic. Ethiopia perceives the dam as a solution to chronic energy shortages and a symbol of national resurgence, expected to drive economic growth and reinforce governmental legitimacy. Egypt, by contrast, views GERD as a serious threat to its water supply, which sustains millions of people. Sudan occupies an intermediate position, seeking economic benefits while avoiding risks to its water security.

These divergent interests have resulted in protracted negotiations characterized by mistrust. Geography plays a decisive role: Ethiopia, as the upstream state, controls initial water flows and thus holds stronger bargaining power; Sudan, as a midstream state, adopts a flexible role as both buffer and potential mediator; Egypt, as the downstream state, is the most vulnerable due to its near-total dependence on upstream flows (Zeitoun & Mirumachi, 2008).

From a realist perspective, water is no longer merely a natural resource but a security issue. States prioritize access and control before entering binding agreements, explaining why many water treaties remain flexible and sovereignty-preserving (Simuziya, 2019).

Despite international calls for cooperation, empirical practice shows that states continue to act strategically. Ethiopia proceeds with dam filling, Sudan maintains diplomatic flexibility, and Egypt exerts pressure through international forums. These actions reflect the realist logic that

cooperation is acceptable only insofar as it does not threaten core national interests (Geneva Water Hub, 2021; International Crisis Group, 2020)

Thus, realism provides a valuable lens for understanding that behind diplomatic rhetoric and cooperative discourse lie calculations of power, security, and national interest. As long as water remains a vital resource directly tied to state survival, realist logic will continue to shape policy choices and interstate dynamics (Zeitoun & Mirumachi, 2008; Geneva Water Hub, 2021).

Impacts of Ethiopia's Water Diplomacy Strategy on Ethiopia–Sudan Relations Effects on Trilateral Negotiations (Ethiopia–Sudan–Egypt)

Trilateral negotiations over GERD reflect intense competition among national interests. Ethiopia views the dam as a symbol of sovereignty and economic development; Egypt perceives it as a threat to national water security; and Sudan occupies an ambivalent position—acknowledging technical benefits while fearing security and operational risks (Climate Diplomacy, 2020).

Ethiopia's water diplomacy strategy emphasizes absolute sovereignty over dam construction and operation, rejecting legally binding agreements. While this approach strengthens Ethiopia's upstream bargaining position, it also slows negotiations by conflicting with Egypt's demand for legal guarantees over water flows (International Crisis Group, 2020; Cascão & Nicol, 2016). Egypt has responded by mobilizing international diplomatic pressure, including appeals to the UN Security Council, while Sudan has adopted a pragmatic stance in response to emerging technical risks and the need for greater data transparency (Institute for Security Studies, 2021; Yihdego et al., 2017).

Overall, Ethiopia's strategy has succeeded in securing national control over GERD but has also intensified tensions and eroded trust among the riparian states. This outcome reinforces the realist argument that prioritizing national interests often impedes collective cooperation in shared resource governance (Mekonnen, 2020; Zeitoun & Warner, 2006).

Prospects for Cooperation and Conflict Resolution

Despite recurring tensions, opportunities for cooperation among Ethiopia, Sudan, and Egypt remain plausible if national interests can be aligned. Within realism, self-interest does not inevitably produce conflict; it can foster cooperation when outcomes enhance state security and welfare (Mearsheimer, 2001; Cascão & Nicol, 2016).

Key opportunities lie in real-time hydrological data-sharing mechanisms and coordinated dam operations. Such measures could enhance water security for Sudan and Egypt while allowing Ethiopia to retain strategic control over GERD and build trust incrementally (Swain, 2011; Zeitoun & Warner, 2006; Tawfik, 2016). Additionally, electricity trade from Ethiopia to Sudan and Egypt could generate mutual interdependence and reinforce regional stability (Yihdego et al., 2017).

From a diplomatic standpoint, institutions such as the African Union and the Nile Basin Initiative can serve as neutral platforms for expanding agendas from water conflict toward regional development cooperation (Waterbury et al., 2015). Flexible, benefit-sharing approaches—rather than rigid quantitative water allocation—are considered more adaptive and consistent with defensive realism (Cascão, 2009).

Nonetheless, high levels of mistrust, domestic nationalism, and divergent interpretations of international water law remain significant obstacles (Salman, 2013). Therefore, gradual strategies emphasizing low-risk technical projects and confidence-building measures are

essential to establish trust before addressing more sensitive issues (Kistin & Ashton, 2008; Allouche, 2016).

Risks of Future Conflict Escalation

The resolution of transboundary water disputes between Ethiopia and Sudan in the GERD context is shaped not only by technical considerations but also by political, economic, legal, and security dynamics. From a realist perspective, states act according to self-interest and tend to maintain firm positions despite international pressure, thereby constraining conflict resolution processes (Mekonnen, 2021).

Political obstacles arise from contrasting perceptions: Ethiopia views GERD as a strategic national development project, while Sudan fears its implications for domestic water security and infrastructure (Abdelhady et al., 2020). Economic divergences further widen the gap, as Ethiopia seeks energy revenues and electricity exports, whereas Sudan demands more equitable benefit-sharing arrangements (Yihdego et al., 2017).

Legally, differing interpretations of international water principles—particularly *equitable and reasonable utilization* versus *no significant harm*—and the absence of binding dispute settlement mechanisms impede agreement (Cascão & Nicol, 2016). Technical challenges, including hydrological data discrepancies, methodological differences, and climate change impacts, increase uncertainty and reinforce mistrust (Wheeler et al., 2020).

Issues of trust and the involvement of external actors with competing agendas further complicate negotiations (Salman, 2016; Cascão, 2018). Collectively, these multidimensional barriers indicate that without trust-building, strengthened technical capacity, and clearer legal frameworks, negotiations are likely to remain deadlocked (Mekonnen, 2021; Wheeler et al., 2020).

CONCLUSION

This study concludes that Ethiopia–Sudan diplomacy in the GERD dispute strongly reflects the realist paradigm, in which national interest, sovereignty, and security constitute the primary determinants of foreign policy behavior. Ethiopia perceives GERD as a symbol of sovereignty and a strategic instrument to enhance its geopolitical position and achieve energy self-sufficiency, while Sudan prioritizes dam safety and the stability of water supply essential for agriculture and societal welfare.

Bilateral relations between the two countries are shaped not only by direct interactions but also by domestic political dynamics, the involvement of external actors such as Egypt and the African Union, and broader regional geopolitical conditions. The dispute demonstrates that transboundary resource conflicts are not merely technical in nature but are deeply embedded in political calculations, security concerns, and power symbolism.

Accordingly, effective conflict resolution requires a multidimensional approach, including the strengthening of sustained diplomatic dialogue, the establishment of permanent technical forums, transparent hydrological data-sharing mechanisms, the involvement of neutral mediators such as the African Union, and the development of economic and environmental cooperation that fosters shared interests among riparian states.

From a theoretical perspective, this study reaffirms the relevance of realism in explaining transboundary resource conflicts. At the same time, it opens avenues for future research that integrates realism with liberal and constructivist perspectives in order to achieve a more comprehensive understanding of the dynamics of transboundary water diplomacy.

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