

## **Water Diplomacy as Peaceful Means for Enhancing Cooperation and Sustainable Development in the Eastern Nile Basin**

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### **Abstract**

The study aims at the roles of water diplomacy approaches for Transboundary Rivers to enhance cooperation. The comparison was to draw lessons that would contribute to transforming the conflict in the Eastern Nile to achieve peaceful collaboration in sustainable development and management of the shared Nile Waters. The study assessed the role of multi-track water diplomacy in enhancing formal and informal diplomacy, analyzed the past and present water diplomacy approaches practiced within the Eastern Nile countries and identified the main challenges hindering the riparian countries from reaching satisfactory dispute resolution by all riparian states. The research used a mixed-methods approach, combining primary and secondary data. The snowball sampling technique was used to identify and recruit participants, and focus group discussions with key stakeholders were held to gain in-depth insights. This qualitative research design allowed the researchers to conduct a thorough examination of the subject matter, delving into the perspectives and experiences of various stakeholders involved in the Eastern Nile River basin. The interview findings show that almost 52% of respondents indicated negotiation is the best approach to be practised in the context of the Eastern Nile River basin and about 36 % of respondents perceive that Ministry of Foreign affairs are the main actors followed by other scientific groups. The study indicated that the role of civil society and other actors in the region has significant importance in enhancing formal water diplomacy to reach an agreement. Moreover, the experience from the global trans-boundary water resources management shows that negotiation and mediation techniques on water diplomacy approaches were widely adapted and used in resolving disputes over shared water resources. Additionally, the civil society and other actors played a significant role in bridging the gap and creating a neutral platform for interaction between the riparian states that pave the way for cooperation.

**Keywords:** Water diplomacy, cooperation, multi-track, transboundary, Eastern Nile basin

## **1. Introduction**

Water is a vital resource that will determine the wealth, welfare, and stability of many countries in the twenty-first century (Islam *et al.*, 2013; Huizinga, 2015). Hassan *et al.* (2017) further evaluated and reported the nexus of climate change, energy, and water security with conflict and development. Hence, the contemporary water management strategies call for the inclusion of ecological research in the decision-making process and emphasize environmentally sustainable management solutions (Aswathanarayana, 2001; van Rees *et al.*, 2015). The hydropower development along Rivers was reported to be in the socio-political construction of nature, viewing water as a medium that conveys power and thus sources of collaboration and conflict (Barrow, 1998; Geheb *et al.*, 2019). The hydro competition over transboundary rivers has the potential for hydro-political tensions and can strain the relationships between riparian countries (Zeitoun *et al.*, 2006; De Stefano *et al.*, 2017).

Water diplomacy links to water, peace, and security and has a pivotal role in sustainable development. Several studies have shown that water diplomacy plays a vital role in negotiating and managing a shared resources such as multifaceted transboundary river networks (Islam & Susskind, 2013; Huizinga, 2015; Ani *et al.*, 2018). The water Diplomacy Framework in water negotiations increases opportunities for discovering mutual-gains solutions and encourages a hypothesis-based approach to research on the ecology of water management (van Rees & Reed, 2015). By differentiating between the “positions” and “interests” of ecological stakeholder surrogates, decision-makers can make greater use of the potential added value of ecosystem services in water management and avoid costly misunderstandings of the behavior of relevant ecological systems (van Rees & Reed, 2015). Consequently, water diplomacy significantly impacts cooperation among water resource-sharing nations and countries (Van Genderen *et al.*, 2011; Grech-Madin *et al.*, 2018). According to Grech-Madin *et al.* (2018), water diplomacy may be used to avoid violent conflict between countries and communities related to water issues which are used to bring peace and stability.

Transboundary river management has long been a complex issue, frequently resulting in conflicts between riparian states. Disparities in water allocation priorities, environmental concerns, and economic interests can all lead to conflict. To illustrate these challenges, consider four case studies: the Jordan River, the Mekong River, the Rhine River, and the Senegal River. The Jordan River has long been a source of contention between Israel and its Arab neighbors (Jägerskog, 2003; Mimi *et al.*, 2003; Mukhar, 2006). Disagreements over the river's water resources contributed to the 1967 War, with Israel attempting to divert the river's flow. (Jägerskog, 2003; Katz *et al.*, 2011). Despite ongoing tensions, informal peace talks and technical cooperation have helped to manage these conflicts to a degree (Jägerskog, 2003; Mimi & Sawalhi, 2003; Mukhar, 2006; Fischhendler, 2008). In contrast, the Mekong River Basin has seen greater cooperation (Bearden, 2010; Geheb & Suhardiman, 2019).

Several riparian states signed the Mekong River Agreement, which established a framework for sustainable development and resource management (Wolf *et al.*, 2007; Hensengerth, 2015). While the agreement has been effective in encouraging cooperation, challenges remain, particularly with non-signatory countries such as China and Myanmar state (Bearden, 2010; Armstrong, 2015; Hensengerth, 2015; Geheb & Suhardiman, 2019).

The Rhine River, a major European waterway, has also been the subject of disputes (Bernauer, 1995; Dieperink, 2011). Riparian countries have entered into discussions to address issues such as pollution and water allocation (Dieperink, 2011). While progress has been made, the Rhine River case demonstrates the significance of political will and cooperation in resolving transboundary river conflicts (Lindemann, 2006; Parrachino *et al.*, 2006; Dieperink, 2011). Moreover, the Senegal River Basin, which is shared by four countries, has faced drought-related and environmental challenges (Vick, 2006; Tignino, 2016). To address these issues, the Organization for the Development of the Senegal River was formed, with a focus on infrastructure development and regional economic needs (Alam *et al.*, 2004; Tignino, 2016).

The Nile River, Africa's longest river, is a vital resource for the eleven countries it passes through. However, the growing population in the Eastern Nile region has resulted in increased competition for water. The emphasis on short-term needs over long-term sustainability has heightened tensions between upstream and downstream countries. Agriculture, a key component of the Eastern Nile economies, is heavily reliant on irrigation. The desire to increase agricultural production and develop energy sectors has increased water demand, resulting in conflict over allocation. The Eastern Nile Basin (ENB) countries have historically struggled to coordinate their water use (Goor *et al.*, 2010; ENSAP, 2017). Egypt and Sudan, the downstream countries, have frequently asserted their rights to a significant portion of the river's flow, citing historical agreements. Upstream countries, such as Ethiopia, have advocated for more equitable distribution of water resources, particularly as they develop their own economies and infrastructure (Goor *et al.*, 2010; ENSAP, 2017).

One of the most contentious issues has been the construction of the Grand Ethiopian Renaissance Dam (GERD) on the Blue Nile. Ethiopia has defended the dam as an important development project, but Egypt and Sudan have expressed concerns about its potential impact on their water supplies. The GERD negotiations have highlighted the complexities of managing a shared water resource in a region with varying interests and priorities (von Lossow *et al.*, 2020). Thus, the efforts to resolve these conflicts have included a variety of cooperative initiatives, including the HYDROMET project and the NBI (Figure 1). However, these efforts have frequently been hampered by political tensions and a lack of trust between riparian countries. The 2015 Agreement on Declaration of Principles

(DOP) for the Grand Ethiopian Renaissance Dam (GERD) was a positive step toward cooperation, but its implementation has been slowed due to communication issues and competing interests.

The Nile River's future depends on the riparian states' ability to collaborate and find long-term solutions to their water management challenges. This will necessitate a dedication to dialogue, compromise, and a common vision for the river's future.

**Timeline for Eastern Nile River Basin Agreements and Cooperation**

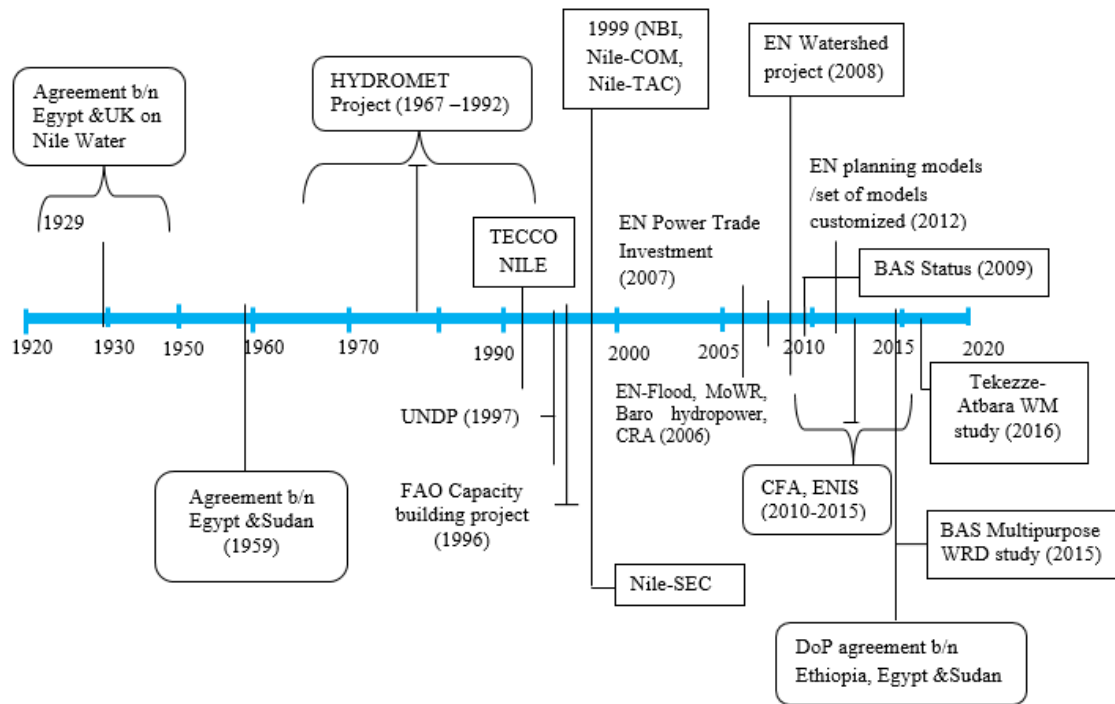


Figure 1. Timeline summary for Eastern Nile Basin

The Nile River basin's hydro-politics have entered a new era, marked by rising tensions and a lack of cooperation among riparian states. While governments attempt to use water diplomacy, their tactics frequently deviate from international water law in order to serve their own interests. This is particularly evident in the Eastern Nile (EN) countries' pursuit of unilateral development, which is rooted in historical treaties from 1929 and 1959. These treaties, however, are increasingly being challenged by upstream countries, which argue for a more equitable distribution of Nile waters. Despite the recognition of the need for transboundary cooperation, the EN countries' reliance on formal water diplomacy without adequate consideration for informal approaches stymies progress toward the establishment of a permanent institutional framework. Informal diplomacy, which involves behind-the-scenes negotiations and trust-building, is critical for addressing root causes, fostering dialogue, and, ultimately, achieving long-term solutions.

***The Eastern Nile River Basin Hydro-diplomacy Hypothesis***

This study investigates the existence of hydro-diplomacy as a peaceful approach to enhancing cooperation and sustainable development in the Eastern Nile Basin that focuses on two hypotheses, the null hypothesis and the alternative hypothesis. The study considers two hypotheses to analyze the role of water diplomacy in the Eastern Nile River Basin; i) the Null hypotheses ( $h_0$ ): the track I water diplomacy is ineffective. ii) the Alternative hypothesis ( $h_1$ ): the alternative hypothesis is considering track II for enhancing track one to reach peaceful Cooperation (Figure 2). Therefore, this study aims to illustrate the role of informal water diplomacy in strengthening formal water diplomacy for the successful cooperation in benefit sharing and fair water allocation, as well as for sustainable protection of the ecosystem and biodiversity of the Nile River.

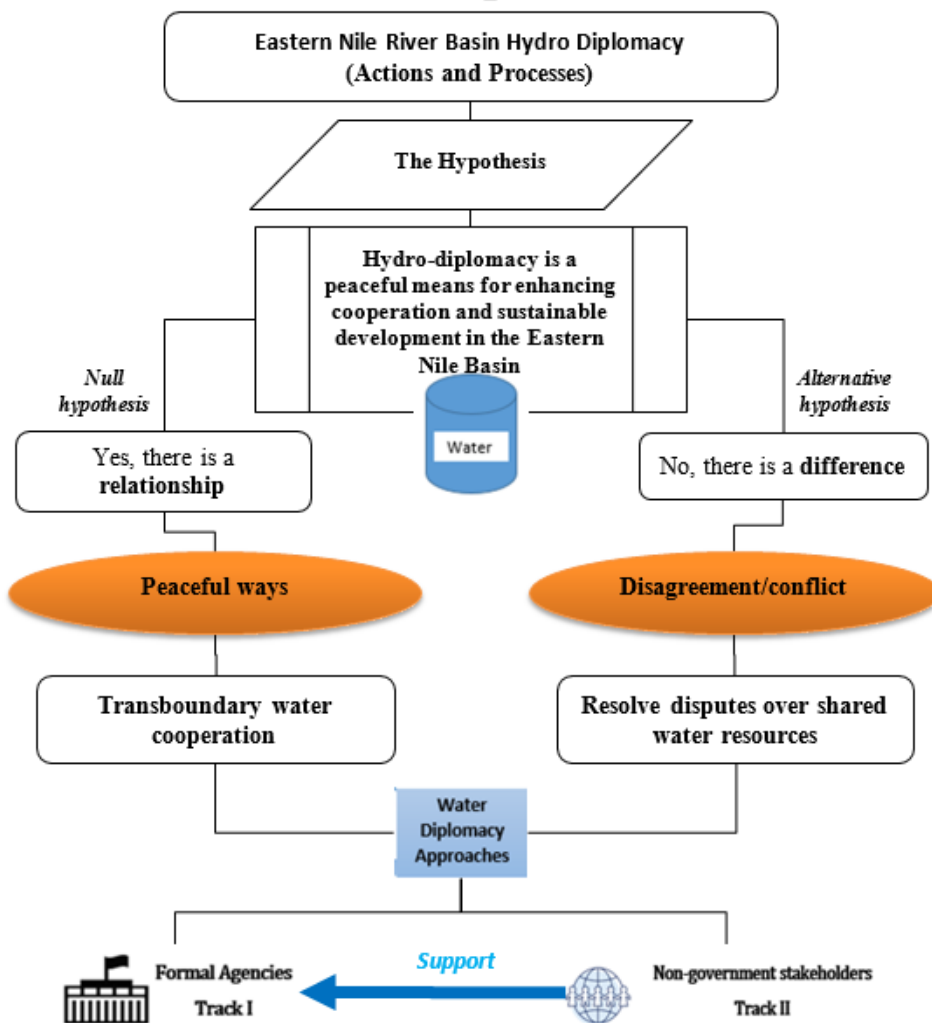


Figure 2. The framework of the Eastern Nile River Basin Hydro Diplomacy Hypothesis

## 2. Material and Methods

### 2.1 Study Area Description

The research study centres on the Eastern Nile Basin (ENB), home to more than 150 million people; includes parts of Egypt, Ethiopia, Sudan, and South Sudan, with an area of 1.7 mkm<sup>2</sup> (Figure 3). The

basin is divided into four sub-basins: Baro-Akobo Sobat (White Nile), Abbay- the Blue Nile, Tekeze-Atbara, and the main Nile from Khartoum to Nile delta (Goor *et al.*, 2010; Initiative, 2010; ENSAP, 2017). The ENB comprises almost half of the 3.4 Mkm<sup>2</sup> catchment area of the Nile river basin and contributes much more than half of the runoff of the main Nile (Arsano *et al.*, 2005; Initiative, 2010; ENSAP, 2017).

## **2.2 Methodology**

The study uses water diplomacy approaches based on multi-track to enhance track I in sharing collective responsibility to reach peaceful cooperation in the Eastern Nile Basin. Thus, multi-track water diplomacy refers to a comprehensive approach to water management in which various stakeholders, such as governments, international organizations, non-governmental organizations, and communities, collaborate to address water-related challenges through cooperation, negotiation, and knowledge sharing. This study used a multi-disciplinary approach, which is qualitative, and document. Thus, document analysis is thoroughly reviewing and evaluating textual sources in order to extract essential information, identify trends, and develop conclusions such as a) identifying the numerous water treaties and agreements that have been signed as baseline; b) exploring the relevance and pitfall of the previous agreements and cooperation; c) extracting lessons from the successful trans-boundary water treaties, which can be adapted for EN. Moreover, the survey and the literature review were analysed using a narrative approach (Figure 4).

In recent years, the concept of "water diplomacy" has gained traction as a strategic instrument for resolving water-related issues and encouraging international collaboration. This approach views water as a critical resource with important consequences for both domestic and international politics. In the Eastern Nile Basin, where numerous countries share a common water resource, water diplomacy has evolved as an important tool for supporting regional security and peace. Thus, a crucial component of water diplomacy is the pursuit of collaboration among the countries participating. This entails working collaboratively to properly manage shared water resources while ensuring fair access and distribution. Cooperation can take many forms, such as collaborative planning, information exchange, and the creation of common infrastructure.

The agreement and negotiation are critical elements of water diplomacy. To reach an agreement on water-related issues, all parties involved must carefully assess their interests and demands. Negotiation allows countries to express their problems, identify common ground, and build mutually beneficial solutions. Consequently, the Eastern Nile Basin, which includes Egypt, Ethiopia, Sudan, and South Sudan, presents a challenging environment for water diplomacy. The region's history of conflict, along with rising demand for water resources, has made water a very controversial subject. To gain a better understanding of the dynamics of water diplomacy in this region, interviews were held with representatives from the four countries concerned.

The discussions centered on numerous essential subjects, such as understanding water diplomacy, the obstacles to collaboration, the primary actors involved, and the roles of civil society, academia, NGOs, and other stakeholders. Examining these viewpoints can provide useful insights into the issues influencing water diplomacy in the Eastern Nile Basin, as well as highlight prospective areas for further cooperation.

Thus, the interview (120) was held with civil society, academicians, Government officials, NGOs and other stakeholders. Additionally, the secondary data was collected from literature, including journal articles, review papers, books and related articles. Moreover, the past work materials of the Eastern Nile Regional Office (ENTRO) of Addis Ababa, Ethiopia, were used as secondary sources (such as the E-ENTRO library, NBI yearly workshop, conference and different deliverable reports), government reports, news and media.

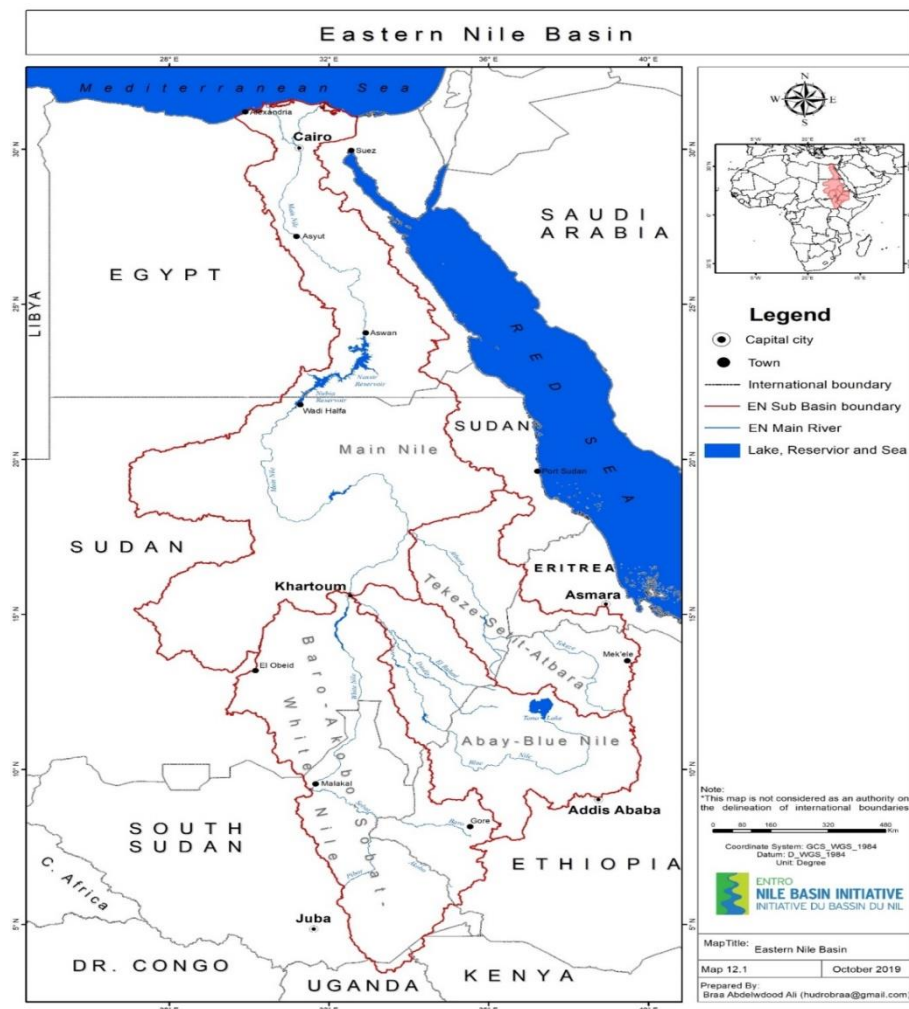


Figure 3. Study area (Eastern Nile Basin) source: ENTRO Atlas (2019)

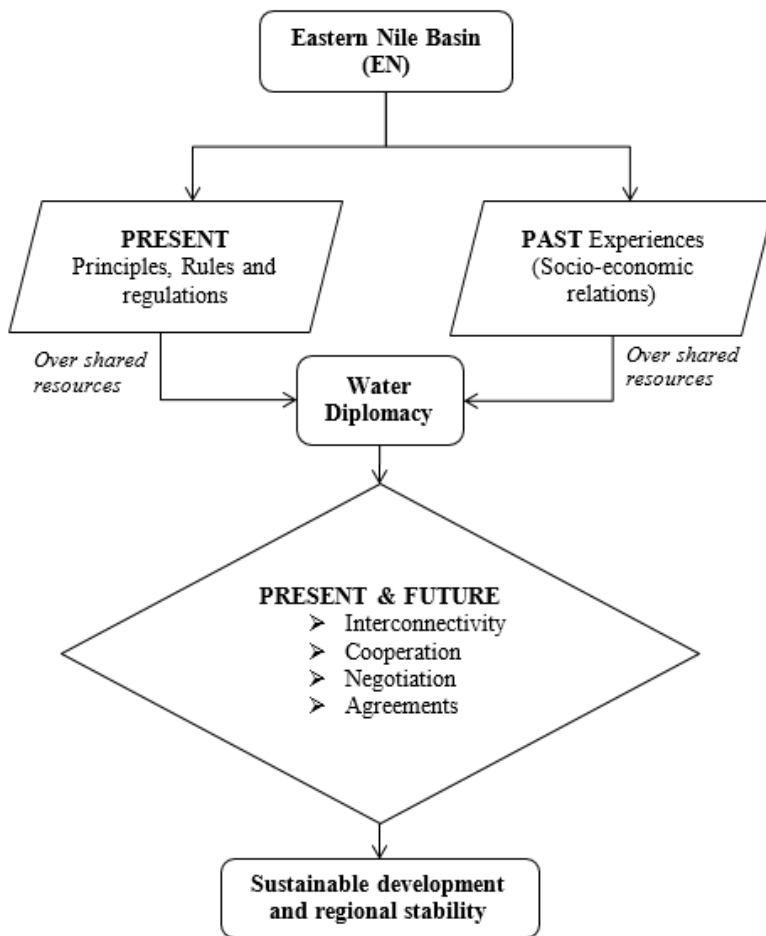


Figure 4. Conceptual framework

### 3. Results and Discussion

The result from the interview carried out in the respective countries regarding the challenges hindering the cooperation in the Eastern Nile indicates common issues concerning information sharing, lack of commitment, and willingness to develop benefit-sharing projects. Nevertheless, the water diplomacy that has been practised does not address the interest and demands of all the riparian countries, which led the riparian countries to pursue unilateral development of the Nile Waters. For instance, the downstream countries demand uninterrupted flow of the Nile, while the upstream countries persist for reasonable and equitable utilization of the Nile Waters. The disagreement exists up to the last negotiations of CFA (2015). As a consequence, the downstream countries demanded to uphold the status co of the 1959 and 1929 agreements that were signed between Egypt and Sudan. The deal was on the utilization and development of the Nile Waters without considering the demand of the other riparian states.

The works of literature reviewed the comparison between the successful transboundary water resources management in the world and the Eastern Nile Basin (Table 1). The water diplomacy



approach that has been practised in most matters is either negotiations<sup>1</sup> or mediation<sup>2</sup>, in which it has a yield to resolving the dispute peacefully. This negotiation has led to the establishment of a permanent commission, which acts as an instrument for the implementation of the treaty, for example, in the Mekong and Senegal River Basin or by signing a treaty that commits countries to solve the issues through side payment like in the Rhine case. However, in all the transboundary river cases, civil society and the other actors played a significant role in bridging the gap and creating a neutral platform for interaction between the countries that paved the way for cooperation. The Eastern Nile basin, unlike the other sub-basins, has a distinct diplomatic landscape. Despite considerable use of various diplomatic tactics, cooperation between riparian countries remains elusive. The biggest impediment is the countries' unwavering focus on water allocation rather than pursuing opportunities for mutual benefit through cooperation projects. This entrenched viewpoint has hampered progress toward a common vision for the region's water resource management.

The survey result indicates the opinion and perception of respondents' understanding of water diplomacy or hydro-diplomacy (Figure 5). About 51% of the respondents understood the water diplomacy terminology as the mechanism<sup>3</sup> of how countries might negotiate among themselves. Moreover, 31% and 10% of the respondents understood water diplomacy as a tool<sup>4</sup> and technique<sup>5</sup> by which the Nile basin countries might negotiate among them. About 5% and 3% of respondents say that water diplomacy is a concept that riparian countries can agree upon and involves politics, respectively.

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<sup>1</sup> Negotiation is an exercise that parties come up together to have a clear outcomes to gain from the situations

<sup>2</sup> Mediation an entity parties agreed upon to mediate and initiate solution to a dispute

<sup>3</sup> Mechanism is a water diplomacy procedure that used in dispute resolution

<sup>4</sup> Tool is a water diplomacy instrument for a peaceful negotiations

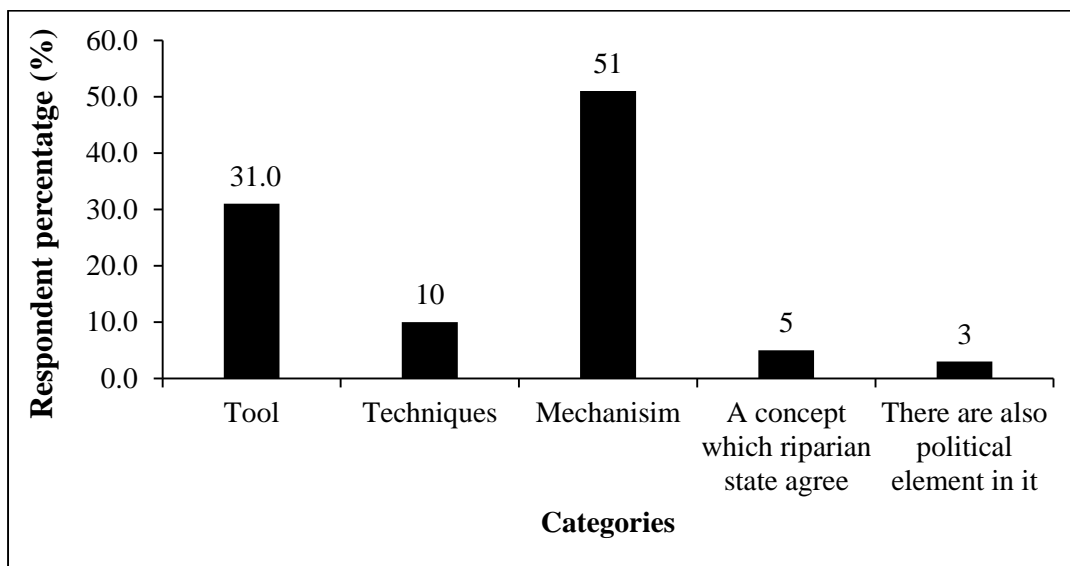
<sup>5</sup> Techniques is a way of or skill of performing water diplomacy

Table 1. The comparison of transboundary river basin

<b>Content</b>	<b>Jordan</b>	<b>Mekong</b>	<b>Rhine</b>	<b>Senegal</b>	<b>Eastern Nile</b>
Locations	Arab island –Mediterranean sea	Southern Asia	Western Europe	West Africa	East and North Africa
Shared countries	Israel, Palestine, Syria, Lebanon and Jordan	China, Myanmar, Vietnam, Leo People’s Democratic Republic, Thailand and Cambodia	Switzerland, France, Germany and the Netherlands	Guinea, Mali, Senegal and Mauritania	Egypt, Ethiopia, Sudan, South Sudan and Eretria (observer)
The disputes /conflicts	Water allocation, salinity and technical Cooperation between Israel and Arab	uncoordinated construction of dams on river Mekong that affect the water supply downstream and affect the ecological health system of the River.	The pollution of the Rhine by upstream chloride discharges	No dispute	Water allocation
Type of WD practiced	Negotiation Mediation	Multilateral agreement and establishment of Mekong River Commission	<ul style="list-style-type: none"> <li>○ Negotiation<sup>3</sup></li> <li>○ Mediation<sup>4</sup></li> <li>○ Modification<sup>6</sup></li> <li>○ Arbitration<sup>7</sup></li> </ul>	<ul style="list-style-type: none"> <li>○ Negotiation</li> </ul>	<ul style="list-style-type: none"> <li>○ Negotiation</li> <li>○ Mediation</li> </ul>
The role Track II WD	Civil society, the Arava Institute of Environmental Studies (AIES), Middle East Desalination Research Centre (MEDRC), EcoPeace	No significant role	<ul style="list-style-type: none"> <li>○ Civil servants.</li> <li>○ non-state actors such as individuals and organizations has significance influence</li> </ul>	<ul style="list-style-type: none"> <li>○ Civil servants.</li> <li>○ non-state actors</li> </ul>	No significant role
The strategy	Society interaction and stability	Coordinated development of the River	Side payments	Benefit-sharing	Not reached to an agreement
Challenges	The unilateral development of the Jordan river which causes completion and increased the existing tension between Israel and Arab	The upstream countries are cooperating based on equality sovereignty and territorial integrity	The Dutch opted for a freeze on the average chloride load which is not accepted by the upstream countries	There is no significant challenge for the time being since the upstream country (Guinea) joined lately	Countries focusing on water allocation rather than benefit-sharing

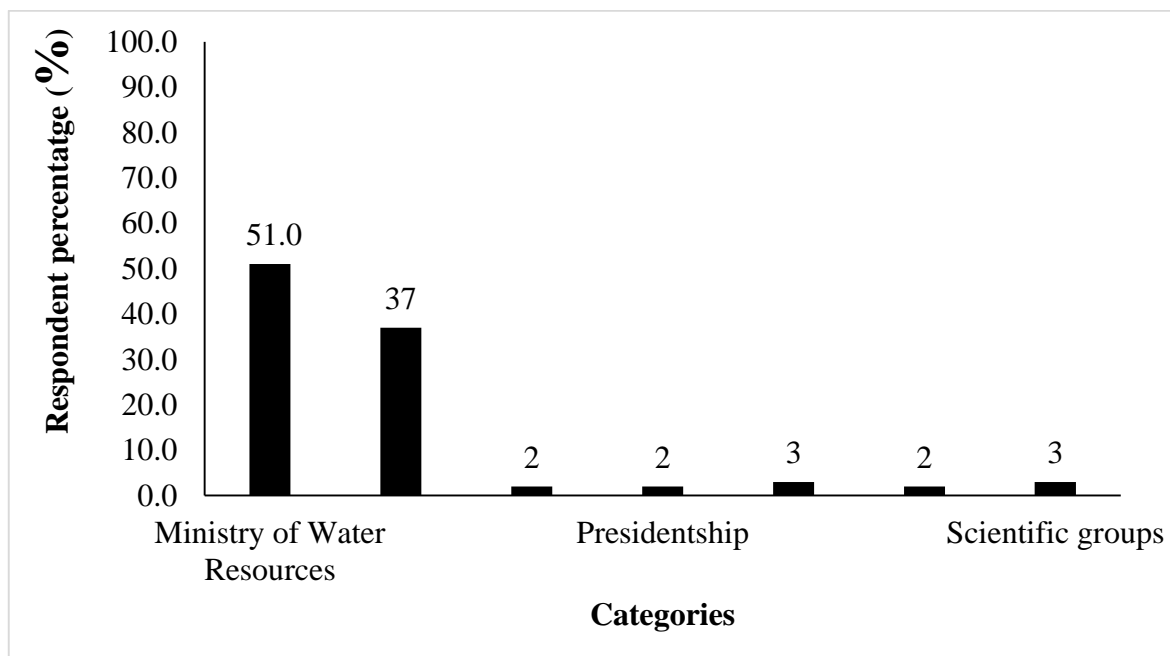
<sup>6</sup> Modification readjustment of treaties or agreements to suit the interest of the conflicting parties

<sup>7</sup> Arbitraition is a legal entity that is exercised in the dispute resolutions



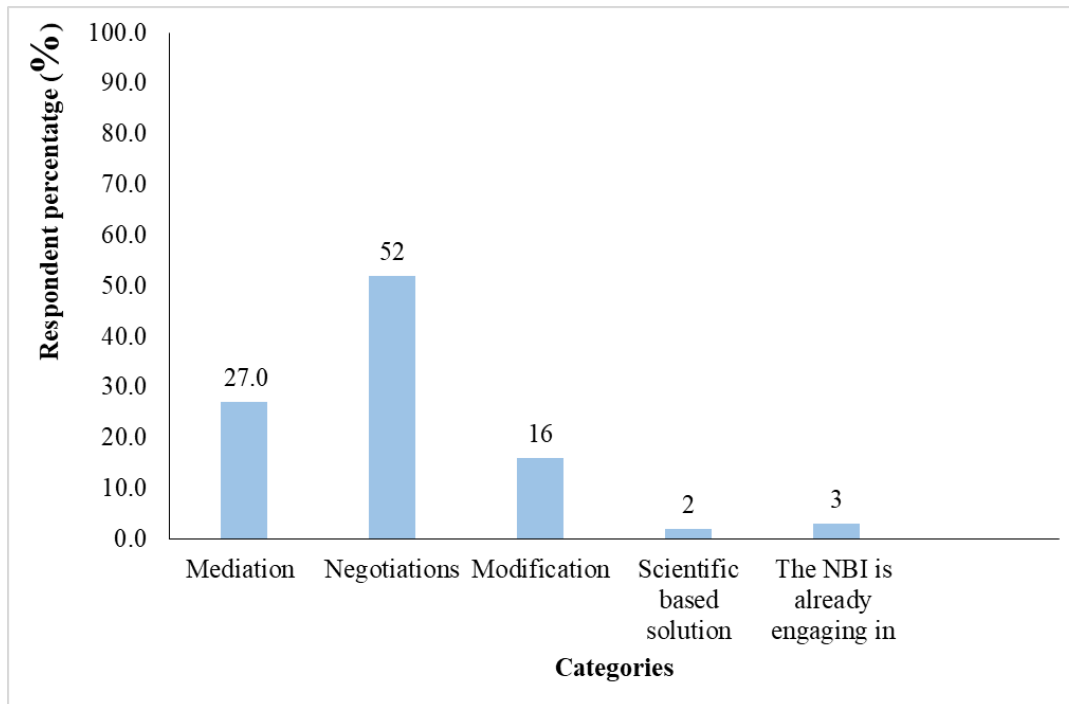
**Figure 5:** Respondents' opinion on understanding water diplomacy/hydro-diplomacy.

Moreover, Figure 6 displays the conception of the respondents toward the main actors of water diplomacy or hydro-diplomacy. The result shows that about 51% of the respondents highlighted the Ministry of Water Resources of each Nile Basin Country as the main actor, followed by the Ministry of Foreign affairs (37%). However, each Nile Basin country's Legislative body, President Ship, Ministry of Culture, Non-governmental actors, and scientific groups were the least involved in Nile Water diplomacy interventions.



**Figure 6.** Respondent conceptions of the actors of water diplomacy/hydro-diplomacy.

The respondent's perspective regarding the type of water diplomacy approach recommended in the context of Eastern Nile indicates that the negotiation approach is more dominant (Figure 7). Therefore, about 52% of the respondents indicate that water negotiation might be the best approach to implement among the Nile Basin countries, followed by mediation (27 %) and modification (16%). On the other hand, the survey indicates that the engagement of NBI (3%) and scientific-based solutions (2%) has not been considered the main actors in countries' hydro-diplomacy.



**Figure 7:** The recommended water diplomacy approach in the context of the Eastern Nile

The status of the water diplomacy approach exercised in the Eastern Nile, according to the interviewee self-rating, about 47.8% of the respondents have a weak understanding level, followed by an intermediate level of understanding (39.1%). The result shows a need to create water diplomacy awareness through different approaches such as media, the internet, magazine, news, and any web platform that might address the stakeholders (Figure 8).

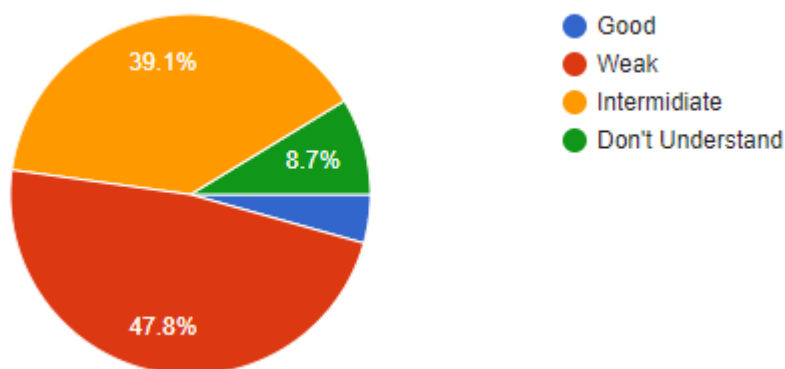


Figure 8. The level of water diplomacy in the Eastern Nile River Basin.

Figure 9 revealed the information gap in the weather the respondents were aware of water cooperation in the Eastern Nile Basin countries. Accordingly, most respondents did not have much information about water cooperation (73.9%), and about 21.7% are aware of the water cooperation status among the sharing countries. The result again reveals that colossal effort is needed to upscale the level and availability of water cooperation status among the Eastern Nile Basin Counties.

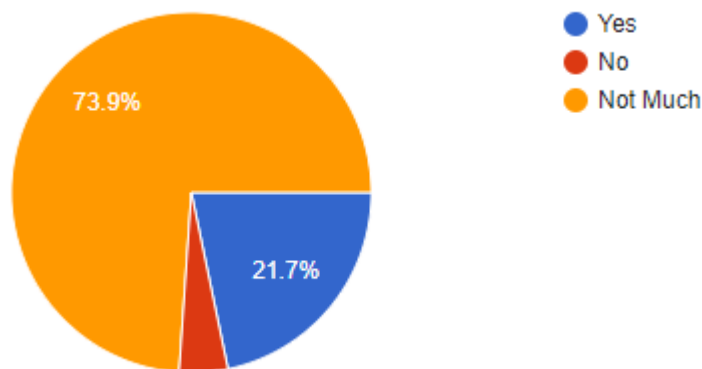


Figure 9. Respondent's responses towards water cooperation in the Eastern Nile.

#### **4. Conclusion and recommendation**

The study examined the water diplomacy approaches in the context of the Eastern Nile compared with those used worldwide. Thus, the finding indicates that the diplomacy approaches practices did not address the interest and needs of all riparian states. The study also found that the role of the society and the other stakeholders are not significant in enhancing the formal negotiation in the region. Thus, the countries cooperate based on limited territorial sovereignty and territorial integrity rather than addressing the dispute holistically. Consequently, the EN countries need to consider fair and reasonable water use by considering environmental protection. Additionally, the exchange of information to protect against significant harm is based on fair water allocation and cooperation that could distinguish between water as an environmental issue and water as a national security issue and should refrain from issues of control, jurisdiction, and sovereignty, which are more complicated and leads to international dispute among the users. Therefore, the countries should be supposed to be mutually willing to accept each other stakes as legitimate and have the political skills to find options for exchange and define package deals. Additionally, Countries should refrain from claiming the river water and work out cooperative approaches involving joint fact-finding and monitoring.

The finding of the study would recommend that the Nile Riparian Countries exert efforts to enhance the understanding of water diplomacy, the role of the civil society, and other stakeholders in the region through media, the internet, magazine, news, workshops, conferences, the platform that could influence the decision-making process. However, the Eastern Nile Countries need to follow the water diplomacy levels by incorporating the regional level to bind states to share understandings of acceptable practices around water, the intrastate level to incorporate ethnography of water users and civil society groups, and the communal level to employ disaggregated geo-referenced data on water resources in conflict-prone areas. Moreover, establishing a permanent commission with a mandate of addressing all technical, social, and political issues in the basin and implementing the treaty and benefit-sharing projects will be a good step toward resolving disputes in the Nile basin.

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