HYDRO DIPLOMACY AND TRANS BOUNDARY WATER COOPERATION IN THE NILE BASIN REGION. A CASE STUDY OF NILE BASIN INITIATIVE (NBI), ENTEBBE UGANDA

BY

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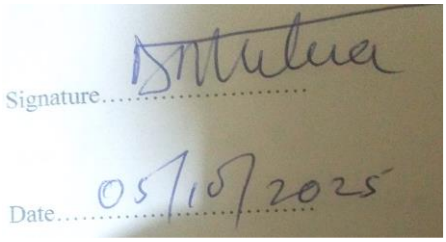
A RESEARCH REPORT SUBMITTED TO THE SCHOOL OF SOCIAL SCIENCES IN PARTIAL FULFILMENT OF THE RQUIREMENTS FOR THE AWARD OF THE MASTER OF ARTS IN DIPLOMACY AND GLOBAL STUDIES OF NKUMBA UNIVERSITY

OCTOBER 2025

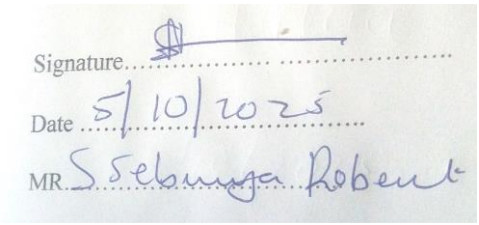
DECLARATION

I DANIEL MUTUA MARTIN do declare that this research report is my original work and has never been submitted to any university for any academic award.



APPROVAL

I hereby confirm that this Research Report was done under my supervision and is now ready for submission.



(Supervisor)

DEDICATION

I dedicate this work to my beloved family and all those who supported me in the successful completion of this project.

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I take this opportunity to thank the Almighty God for guiding and overseeing me through the completion of this project. The activities involved in carrying out this study were not only exciting but also challenging. It involved the collective responsibility of several people. Since it is not possible to name all of them herein, I highly extend recognition to all of them. I am particularly indebted and greatly appreciate my supervisor Mr. Robert Ssebunya for his professional guidance, advice and for reading through my drafts and advancing valuable suggestions. In addition, I highly recognize and salute my lecturers at Nkumba University for their professionalism and dedication to add value to the lives of their students. I also greatly thank the Nile Basin Initiative Staff and other experts that I spoke to while collecting data to facilitate the completion of my project.

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LIST OF ACRONYMS

AfDB – African Development Bank

BCM – Billion Cubic Meters

CFA – Cooperative Framework Agreement

CIWA – Cooperation in International Waters in Africa

CVI – Content Validity Index

ENSAP – Eastern Nile Subsidiary Action Program

ENTRO – Eastern Nile Technical Regional Office

GBV – Gender-Based Violence

GERD – Grand Ethiopian Renaissance Dam

GIS- Geographic Information Systems

GIZ – German Agency for International Cooperation

IPCC — Intergovernmental Panel on Climate Change

LVBC - Lake Victoria Basin Commission

MDPI – Multidisciplinary Digital Publishing Institute

NBI – Nile Basin Initiative

NELSAP – Nile Equatorial Subsidiary Action Program

RBOs – River Basin Organizations

SIWI – Stockholm International Water Institute

SPSS – Statistical Package for the Social Sciences

UNEP – United Nations Environment Programme

ABSTRACT

This study explored the influence of hydro-diplomacy on transboundary water cooperation within the Nile Basin, focusing on the Nile Basin Initiative (NBI). The research was guided by three key objectives: to examine the role of hydro-diplomacy in promoting peace and security among Nile Basin Riparian States; to assess the effectiveness of the NBI in fostering efficient and equitable water management; and to analyze how political dynamics and power imbalances effect the success of transboundary cooperation frameworks in the region. The study employed a case study design and mixed methods. The study involved 109 respondents out of a target population of 150. Quantitative data were analyzed using SPSS Version 23, while qualitative data were subjected to content analysis. The study found that hydro-diplomacy has helped promote peace, reduce tensions, and build trust among Nile Basin states through dialogue and cross-border engagements. The NBI was recognized for improving water management, data sharing, technical skills, and supporting joint projects. However, concerns remain about the fairness of addressing upstream and downstream needs, highlighting the need for more transparency and trust-building. Political power imbalances and lack of a university binding legal framework were identified as key challenges hindering effective cooperation over Nile water resources. The study recommends strengthening diplomatic dialogue and cross-border engagements to build mutual trust and advance sustainable management of the Nile's water resources.

CHARPTER ONE

INTRODUCTION TO THE STUDY

1.0 Introduction

The study examined the influence of Hydro Diplomacy on Trans Boundary Water Cooperation in the Nile basin region specifically at Nile Basin Initiative (NBI). Hydro diplomacy has emerged as a critical mechanism for managing transboundary water resources in the Nile Basin, which is shared by eleven riparian states Burundi, the Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania, and Uganda. The basin has historically been marked by power asymmetries and disputes, largely stemming from colonial-era treaties that disproportionately favored downstream countries, particularly Egypt and Sudan, while excluding upstream states from formal water-sharing arrangements. Considering growing pressures such as population increase, climate change, and competing development needs, the urgency for equitable and cooperative water governance has intensified. In response, the Nile Basin Initiative (NBI) was established in 1999 as a regional intergovernmental partnership to foster sustainable management, promote dialogue, facilitate data sharing, and encourage joint planning among member states. While the NBI has made significant strides in building trust and promoting regional cooperation, challenges such as climate variability, diminishing water for use, population growth, water pollution, Grand Ethiopian Renaissance Dam (GERD) dispute continue to test the resilience of hydro-political relations in the region. Nevertheless, the NBI remains a cornerstone of hydro diplomacy in the basin, serving as a vital platform for promoting integration, peace, and sustainable development. This study seeks to explore the role of hydro diplomacy and transboundary water cooperation in the Nile Basin, using the NBI as a case study. Specifically, this chapter presents the background to the study, outlines the problem statement, states the objectives and research questions, and defines the scope and significance of the research.

1.1 Background to the study

1.1.1 Historical Perspectives

Globally, the concept of hydro diplomacy has its roots in the recognition that shared water resources can either spark conflict or serve as a catalyst for cooperation. From ancient

Mesopotamia and the Indus Valley civilizations, societies developed river-sharing mechanisms to regulate irrigation, mitigate floods, and sustain livelihoods. In modern times, the rise of international water law embodied in frameworks such as the 1966 Helsinki Rules and the 1997 UN Convention on the Law of the Non-Navigational Uses of International Watercourses highlighted the importance of equitable and reasonable utilization of shared rivers. These global norms shaped the practice of hydro diplomacy by emphasizing negotiation, data sharing, and multilateral cooperation to resolve transboundary water disputes (Haile & Krampe, 2023; Nicol et al., 2022). They also provided the foundation for basin-level initiatives worldwide, such as the Mekong River Commission in Southeast Asia and the Indus Waters Treaty between India and Pakistan, which serve as reference points for the Nile Basin.

In Africa, hydro diplomacy evolved against the backdrop of colonial exploitation and post-colonial struggles for sovereignty. Pre-colonial communities across the continent, including pastoralist and agricultural groups along major rivers such as the Niger, Zambezi, and Nile, relied on traditional ecological knowledge, clan authority, and customary norms to allocate water fairly and prevent conflict. Colonial rule disrupted these systems by centralizing control of water to advance the interests of metropolitan powers, often favoring downstream states for large-scale irrigation and hydropower. In the Nile Basin, this culminated in the 1929 and 1959 Nile Waters Agreements, which privileged Egypt and Sudan while excluding upstream states like Ethiopia, Uganda, and Kenya (Gebreluel, 2020). Post-independence, African states began reclaiming sovereignty over their natural resources, making hydro diplomacy both a tool of resistance against colonial legacies and a platform for regional integration. Institutions such as the Nile Basin Initiative (1999) exemplify this shift towards cooperative management of shared waters, reflecting broader African efforts at collective resource governance in the spirit of the African Union's emphasis on peace and development.

Within Uganda, the history of hydro diplomacy is deeply intertwined with both indigenous practices and colonial legacies. Traditionally, Ugandan communities along the Nile and its tributaries managed water through customary norms, communal ownership, and spiritual taboos that emphasized intergenerational equity. However, colonial interventions subordinated Uganda's role in Nile governance to Egypt and Sudan, denying it formal entitlements under the

1929 and 1959 agreements. In the post-colonial era, Uganda joined other upstream states in contesting these historical injustices, particularly as growing population pressures, agricultural expansion, and hydropower development increased demand for Nile waters. Uganda's participation in the Nile Basin Initiative has been central to its diplomatic strategy, offering a platform to advocate for equitable benefit-sharing and regional cooperation. At the same time, Uganda faces the challenge of balancing its domestic development needs such as hydropower generation at Bujagali and Karuma dams with regional concerns, especially amid tensions surrounding Ethiopia's Grand Renaissance Dam. Thus, Uganda's engagement in hydro diplomacy illustrates both the persistence of historical grievances and the potential of cooperative frameworks to build mutual trust and regional stability.

1.1.2 Theoretical Perspective

This study was grounded in three interrelated theories of international water law, namely: The Theory of Limited Territorial Sovereignty, the Theory of Absolute Territorial Integrity, and the Theory of Absolute Territorial Sovereignty. The Theory of Limited Territorial Sovereignty in water law posits that while a state has sovereign rights over the water resources within its territory, it also bears an obligation not to cause significant harm to other riparian states sharing the same watercourse (Dellapenna & Gupta, 2009; McCaffrey, 2019). This theory promotes principles such as "equitable and reasonable utilization" and "no significant harm," which are embedded in international instruments like the UN Watercourses Convention (UN, 1997). Within the Nile Basin, this theory becomes particularly relevant in assessing the legitimacy of upstream development projects such as Sudan's Merowe Hydroelectric Dam, Ethiopia's Grand Ethiopian Renaissance Dam (GERD), Rusumo Hydro Power Dam and their implications for downstream states like Egypt and Sudan. It provides a normative basis for cooperative approaches such as those promoted under the NBI framework.

The application of the Theory of Limited Territorial Sovereignty extends beyond legal principles to practical mechanisms of dispute resolution and cooperative frameworks. By emphasizing shared responsibility, it creates room for dialogue among riparian states, helping to balance national development interests with regional stability. In the context of the Nile Basin, this theory provides a justification for multilateral agreements that prioritize collective benefits over

unilateral actions. It further stresses the need for transparency in data sharing, joint environmental assessments, and negotiated settlements, which are crucial in minimizing conflicts. Therefore, the study relied on this theory to evaluate cooperative mechanisms within the Nile Basin Initiative and to analyze the extent to which these principles have been operationalized in practice.

The Theory of Absolute Territorial Integrity, by contrast, holds that downstream states have the right to receive the uninterrupted flow of a river originating upstream (Salman, 2007). This theory has historically informed the position of Egypt, which relies heavily on the Nile for its water needs and has consistently cited colonial-era treaties as the basis for its claims to a majority share of the river's flow. Egypt's stance against upstream development initiatives often reflects this doctrine, perceiving any reduction in flow as an infringement of its sovereign rights (Cascão, 2009). This theory therefore guided the study's analysis of resistance to change within existing water-sharing arrangements and its implications for regional diplomacy under the NBI. The insistence on Absolute Territorial Integrity highlights the clash between historical water rights and modern demands for equitable utilization. Egypt's dependence on the Nile waters has shaped its political, economic, and security strategies, making it resistant to new agreements that threaten its dominance. This resistance has often slowed down negotiations within the Nile Basin Initiative and heightened tensions with upstream countries pursuing hydropower and irrigation projects. The study used this theoretical lens to assess the rigidity of Egypt's position and to understand the historical basis of its water diplomacy. It also allowed for an examination of how such claims affect regional trust-building, cooperative frameworks, and the feasibility of creating a balanced allocation regime among Nile Basin states.

The Theory of Absolute Territorial Sovereignty asserts that a state has full control over all water resources within its territory and owes no obligation to downstream neighbors (Caponera, 1992; McIntyre, 2013). This theory is commonly associated with upstream states such as Ethiopia and Uganda, which argue for their right to utilize the Nile for national development, including hydropower and agriculture. Such a perspective often undercuts efforts toward integrated management and has been a key point of contention in regional negotiations (Tawfik, 2016). The

study employed this theory to evaluate the implications of unilateral water development strategies and the resulting tensions within the NBI framework.

At its core, Absolute Territorial Sovereignty prioritizes national development objectives over regional cooperation, often creating a zero-sum approach to water use. For upstream countries, this doctrine serves as a justification for large-scale projects aimed at economic transformation, energy generation, and food security. However, for downstream states, it represents a direct threat to water security and regional stability. The study analyzed this theory to assess how unilateral actions affect trust, escalate diplomatic tensions, and limit the success of collective management frameworks like the Nile Basin Initiative. By situating this theory in the broader Nile Basin discourse, the research was able to highlight the structural challenges that hinder equitable water governance and cooperative diplomacy.

1.1.3 Conceptual Perspectives

Transboundary water cooperation, the dependent variable in this study, refers to the collective and structured efforts among riparian states to manage and utilize shared water resources sustainably and equitably. According to Zeitoun and Mirumachi (2008), this cooperation includes formal agreements, conflict resolution mechanisms, and coordinated water development initiatives. Institutional mechanisms or transboundary water agreements ordinarily establish joint bodies or arrangements designed to serve as focal point of inter-state cooperation for day-to-day management of shared water courses. Within the Nile Basin, it is operationalized through indicators (approaches) such as joint planning, data sharing, joint investments under the Nile Basin Initiative (NBI), dispute mitigation strategies, and regional legal frameworks like the Cooperative Framework Agreement (CFA).

Hydro diplomacy, the independent variable in this study, involves the strategic use of diplomatic negotiation, policy dialogue, and legal instruments to manage competing national interests over shared watercourses. Kibaroglu and Sayan (2023) define hydro diplomacy as a multi-actor, multi-level process involving both state and non-state players aimed at promoting equitable and sustainable transboundary water governance. Hydro diplomacy plays a crucial role in transforming hydro-political tensions into cooperative arrangements. It creates institutional pathways for trust-building, joint investments, and legal harmonization among riparian countries.

Turton (2002) notes that hydro diplomacy bridges the gap between conflict and cooperation by leveraging soft power and regional integration mechanisms.

1.1.4 Contextual Perspectives

The Nile River Basin is one of the most geopolitically complex and environmentally significant transboundary river systems globally. Stretching over 6,650 kilometers, it is the longest river in the world and traverses 11 riparian countries: Burundi, Democratic Republic of Congo, Egypt, Eritrea, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania, and Uganda (Nile Basin Initiative NBI, 2022). The basin supports over 257 million people, with more than 60% depending directly on the Nile's waters for agriculture, energy, and domestic needs (World Bank, 2021). However, rainfall distribution is uneven; Ethiopia contributes approximately 85% of the Nile's flow through the Blue Nile yet has historically had limited water access under agreements favoring Egypt and Sudan (Gebreluel, 2020). Per capita water availability has declined from 2,000 m^3/year in 1960 to below 650 m^3/year in 2020, pushing most basin countries below the water scarcity threshold (Mekonnen & van der Zaag, 2021).

Population growth and climate variability have further strained the basin's limited water resources. The combined population of Nile Basin countries is projected to surpass 600 million by 2050, with urbanization and food demand expected to double, intensifying competition for water (Haile & Krampe, 2023). Hydro-diplomatic investments initiatives have emerged, such as Ethiopia's Grand Ethiopian Renaissance Dam (GERD), which aims to generate over 6,450 MW, becoming Africa's largest hydropower project (Kibaroglu & Sayan, 2023). This has escalated tensions with Egypt and Sudan, reliant on stable downstream flows; Egypt depends on the Nile for about 97% of its freshwater (Nicol et al., 2022). The Nile River Cooperative Framework Agreement (CFA), which came into force on 13 October 2024 after South Sudan became the sixth ratifying state, represents a key step toward cooperation, although Egypt and Sudan have yet to ratify it (NBI, 2022). In addition, other non-ratifying parties include Kenya and DR Congo.

Political instability and regional conflicts continue to complicate cooperation. Conflicts in the Democratic Republic of Congo has cited involvement of Rwanda and Uganda in conflicts taking place in its Territory, causing counter accusations and diplomatic rifts not only amongst the three

countries but within the East African Community extending to border closures between Burundi and Rwanda and severed ties between the DRC and Kenya in 2024. Sudan faces armed conflict causing displacement and loss of life, while South Sudan, Kenya and Ethiopia experience internal ethnic tensions and resource competition. Economic hardships worsened by conflict, global recession, and droughts have led to significant funding shortfalls for the Nile Basin Initiative, resulting to outstanding arrears among member states and reduced donor support (UNEP, 2021). Climate models predict a 20–30% increase in hydrological variability by 2050, underscoring the urgency for effective, cooperative water governance based on trust and scientific evidence (IPCC, 2023).

1.2 Statement of the Problem

Hydro-diplomacy in the Nile River Basin, which spans 3.4 million square kilometers (10% of Africa's land mass) and supports over 300 million people (more than 40% of Africa's population), has remained fragile and conflict-prone despite decades of cooperative efforts. The root of the problem lies in colonial-era treaties of 1929 and 1959, which unfairly allocated 55.5 BCM of water to Egypt and 18.5 BCM to Sudan while excluding upstream states (UNEP, 2021). This created a foundation of mistrust, as upstream countries like Uganda, Ethiopia, Kenya, and Tanzania were denied equitable rights to the shared resource. Although the Nile Basin Initiative (NBI) was established in 1999 and has developed over 45 cooperative policies, it has encountered challenges in attaining a fully binding agreement to all its riparian states (World Bank, 2020). The Nile River Cooperative Framework Agreement (CFA) came into force on 13 October 2024 after South Sudan's acceded to it, marking six ratifying states, yet Egypt and Sudan continue to reject it citing threats to their historical water shares. To date, the CFA remains a contentious issue among member states in spite of many years of hydro diplomatic efforts to bridge the gap.

Ethiopia's unilateral filling of the Grand Ethiopian Renaissance Dam (GERD) in line with its domestic pursuit of hydro power development heightened tensions with its eastern Nile neighbors, with projections showing a reduction in Egypt's annual Nile flow by 20% cut to its 1959 treaty allocation (Arab Center Washington DC, 2023).

The Nile faces growing macro-plastic pollution, with waste flowing into the Mediterranean Sea and threatening aquatic biodiversity and livelihoods dependent on the river (Liubartseva et al., 2018). Lake Victoria, which supports over 40 million people in Uganda, Tanzania, and Kenya, suffers from severe pollution and declining water quality (LVBC, 2024), undermining regional cooperation over fisheries, transport, and domestic water supply. Furthermore, the basin's rapidly expanding population projected to exceed 600 million by 2050 has escalated competition for water for hydropower, agriculture, and domestic use, with demand expected to rise by 20–30% by 2040 (NBI, 2024; World Bank, 2020). Political instability, stalled projects, and weak institutional capacity have compounded these challenges, undermining the promise of equitable resource sharing. These legal, political, and institutional barriers threaten equitable use of Nile water resources, sustainable development and regional integration, necessitating urgency for the study.

1.3 Purpose of the study

The study examined the influence of Hydro Diplomacy on Trans Boundary Water Cooperation in the Nile basin region specifically at Nile Basin Initiative (NBI).

1.4 Objectives of the Study

1) To examine the role of hydro-diplomacy in promoting peace and security among Nile Basin riparian states
2) To assess the effectiveness of the Nile Basin Initiative (NBI) in fostering efficient and equitable water management practices among member countries.
3) To analyze the effect of the political dynamics and power irregularities within the Nile Basin region on the implementation and success of transboundary water cooperation frameworks.

1.5 Research Questions

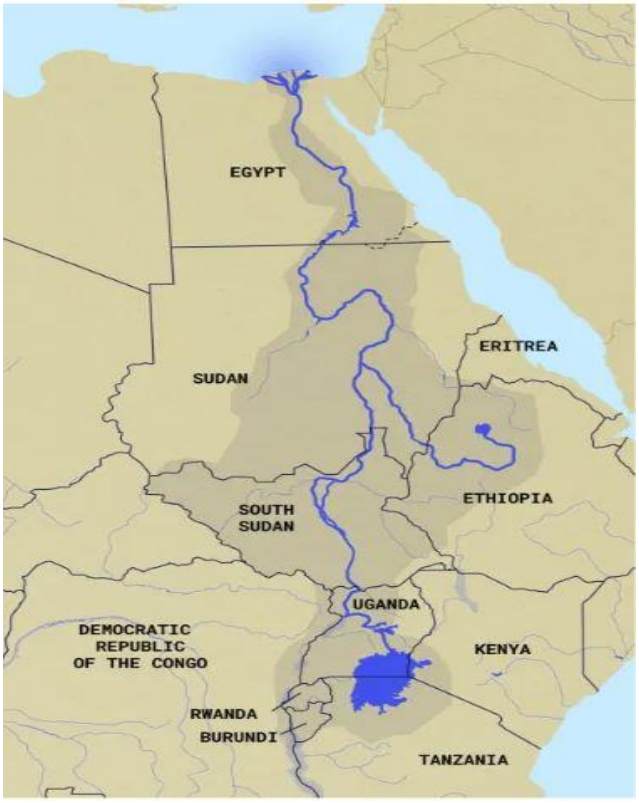
1) How does hydro-diplomacy contribute to peace and security among the Nile Basin riparian states?
2) To what extent has the Nile Basin Initiative (NBI) been effective in promoting efficient, equitable, and sustainable water management across the member countries?
3) How do the political dynamics and power imbalances among Nile Basin countries influence the implementation and outcomes of transboundary water cooperation agreements?

1.6 Scope of the study

Content scope: The study examined the influence of Hydro Diplomacy on Trans Boundary Water Cooperation in the Nile basin region specifically at Nile basin initiative (NBI). The study was guided by objectives: to examine the role of hydro-diplomacy in promoting peace and security among Nile Basin Riparian States, to assess the effectiveness of the Nile Basin Initiative (NBI) in fostering efficient and equitable water management practices among member countries and to analyze the effect of the political dynamics and power irregularities within the Nile Basin Region on the implementation and success of transboundary water cooperation frameworks.

Geographical Scope: The Nile Basin Initiative (NBI), headquartered in Entebbe, Uganda, serves as an intergovernmental partnership encompassing the entire Nile River Basin a vast catchment area of approximately 3.35 million km² spanning ten member countries (Burundi, DR Congo, Egypt, Ethiopia, Kenya, Rwanda, South Sudan, Sudan, Tanzania, and Uganda) with Eritrea participating as an observer. The Secretariat, known as Nile-SEC, is situated at Plot 12 Mpigi Road, Entebbe, within Wakiso District, at the precise geographic coordinates of 0° 2′ 59″ N, 32° 28′ 14″ E (approximately latitude 0.0496°, longitude 32.4706°), standing at an elevation of about 1,158 m above sea level. In addition to the Secretariat is two investments arms known as Subsidiary Actions programs namely, Nile Equatorial Subsidiary Action program (NELSAP) and Eastern Nile Technical Regional Office (ENTRO) located in Kigali, Rwanda and Addis Ababa, Ethiopia Respectively.

Figure 1.1: A map showing Nile Basin region



Source: Nile Basin Initiative Mr. Philip J. Akol Mr. Robert P. Z. Galla Mr. Sabuni Wanyonyi et-al (2016)

Time Scope: The study considered information relating to the years 2019 to 2024, and the field study was conducted over a three-month period from *May to July* 2025.

1.6 Significance of the Study

This study holds significant value for multiple stakeholders engaged in the management and governance of the Nile Basin's transboundary water resources.

For policymakers and governments of Nile Basin countries, the research provides critical insights into the political and institutional challenges affecting hydro-diplomacy and trans boundary water cooperation. Understanding these challenges will inform the design of more inclusive and binding legal frameworks that enhance trust and peaceful relations among riparian states, ultimately contributing to regional peace and security.

For regional organizations, particularly the Nile Basin Initiative (NBI), the study offers an evaluation of the effectiveness of current water management strategies and cooperation mechanisms. The findings will assist the NBI in identifying gaps in policy implementation and recommend strategies to strengthen collaborative efforts, improve resource sharing, and resolve conflicts more efficiently. It will in addition help regional organizations like NBI and other similar institutions in the region to harness the opportunity provided by hydro diplomacy in negotiations to deepen trust and confidence in building amongst their member states for faster endorsement of joint mechanisms and cooperation agreements.

For local communities and civil society organizations, especially those directly dependent on the Nile for livelihoods, the study highlights the social and environmental effect s of large-scale water infrastructure projects and governance challenges. This awareness can empower communities to engage more actively in decision-making processes and advocate sustainable and equitable water use.

For researchers and academics, the study contributes to the body of knowledge on transboundary water governance and hydro-diplomacy, providing empirical data and analysis that can serve as a foundation for future research and comparative studies across other shared river basins.

Finally, for international development partners and donors, the study identifies critical leverage points for supporting capacity-building initiatives, conflict resolution mechanisms, and climate adaptation strategies that enhance the resilience of the Nile Basin’s water systems and its populations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter covers the Literature survey, the review of related theories, literature review and conceptual framework. Literature survey explains the related studies that were piloted by various researchers with in Uganda and clear brings out the research gaps. The literature reviews the existing literature and empirical literature on the influence of Hydro Diplomacy on Trans Boundary Water Cooperation in the Nile basin region specifically at Nile Basin Initiative (NBI) in reference to stated objectives of the study.

2.1 Literature Survey

Kemigisha (2019) carried out an Assessment of the Role of Hydro-Diplomacy in Managing the Nile Water Resources between Uganda and Egypt. The study adopted Qualitative case-study research design. The publicly available record shows this is an MA/IR thesis focused on Uganda–Egypt hydro-diplomatic interactions; the online entry does not state a sample size in the abstract metadata. The study finds that diplomatic engagement and bilateral communications are central to how Uganda positions itself in Nile politics; Uganda's policy choices emphasize national development (hydropower and regional energy trade) while attempting to balance relations with both upstream and downstream partners. The thesis highlights limited institutional capacity and the asymmetry of historical treaties as drivers of mistrust, and it shows how Uganda's diplomatic posture can be both confidence-building and a source of perceived unilateralism depending on transparency in project planning. The publicly available abstract lacks detail on sampling and empirical depth i.e., how many diplomats/officials were interviewed and which documents were analyzed. Limited comparative analysis of multilateral tracks (NBI mechanisms) versus bilateral diplomacy the study focuses heavily on bilateral Uganda–Egypt dynamics and less on how Uganda engages through NBI institutions. Little measurable assessment of outcomes: the link between specific hydro-diplomatic activities and concrete cooperation outcomes (e.g., joint projects, dispute resolution events) is thin and could be quantified. These gaps create room for a study that traces causal links between hydro-diplomatic practices and measurable cooperation within the NBI.

Bosco, (2023) conducted a study on Hydro-Politics and Regional Security: Assessment of Uganda's Contribution to Peace and Stabilisation in the Nile River Basin. The study adopted a mixed qualitative review of Uganda's regional roles and security contributions. Report synthesizes policy documents, institutional records and expert interviews/secondary sources; the publicly listed report summary does not specify a numeric sample size for interviews in the publicly accessible summary. The assessment argues Uganda plays a constructive but cautious role in Nile hydro-politics: it advances national hydropower and water resource development while participating in regional dialogues (NBI, technical working groups). Uganda's projects (e.g., Karuma, Isimba) strengthen its bargaining position and regional energy interconnectivity, but they also raise questions about upstream project transparency and downstream effect assessments. The paper highlights that Uganda's engagement in multilevel diplomacy (track-I and track-II) has potential to stabilise negotiations if institutional capacity, data sharing and dispute mechanisms are strengthened. The paper is policy-oriented and does not systematically measure how Uganda's actions change other states' behaviour within the NBI (limited counterfactual or stakeholder reaction analysis). It lacks a rigorous empirical dataset linking specific diplomatic acts to cooperation metrics (e.g., treaty ratifications, joint projects). Limited attention to environmental and community effect s of Uganda's hydropower projects in transboundary contexts a gap for research integrating hydro-diplomacy and socio-ecological outcomes.

2.2 Theoretical Review

This study was grounded in three interrelated theories of international water law, namely: The Theory of Absolute Territorial Sovereignty, The Theory of Absolute Territorial Integrity and The Theory of Limited Territorial Sovereignty. The Theory of Absolute Territorial Sovereignty asserts that a state has full control over all water resources within its territory and owes no obligation to downstream neighbors (Caponera, 1992; McIntyre, 2013). This theory is commonly associated with upstream states such as Ethiopia and Uganda, which argue for their right to utilize the Nile for national development, including hydropower and agriculture. Such a perspective often undercuts efforts toward integrated management and has been a key point of contention in regional negotiations (Tawfik, 2016). The study employed this theory to evaluate the implications of unilateral water development strategies and the resulting tensions within the

NBI framework. At its core, Absolute Territorial Sovereignty prioritizes national development objectives over regional cooperation, often creating a zero-sum approach to water use. For upstream countries, this doctrine serves as a justification for large-scale projects aimed at economic transformation, energy generation, and food security. However, for downstream states, it represents a direct threat to water security and regional stability. The study analyzed this theory to assess how unilateral actions affect trust, escalate diplomatic tensions, and limit the success of collective management frameworks like the Nile Basin Initiative. By situating this theory in the broader Nile Basin discourse, the research was able to highlight the structural challenges that hinder equitable water governance and cooperative diplomacy.

The Theory of Absolute Territorial Integrity, by contrast, holds that downstream states have the right to receive the uninterrupted flow of a river originating upstream (Salman, 2007). This theory has historically informed the position of Egypt, which relies heavily on the Nile for its water needs and has consistently cited colonial-era treaties as the basis for its claims to a majority share of the river's flow. Egypt's stance against upstream development initiatives often reflects this doctrine, perceiving any reduction in flow as an infringement of its sovereign rights (Cascão, 2009). This theory therefore guided the study's analysis of resistance to change within existing water-sharing arrangements and its implications for regional diplomacy under the NBI. The insistence on Absolute Territorial Integrity highlights the clash between historical water rights and modern demands for equitable utilization. Egypt's dependence on the Nile waters has shaped its political, economic, and security strategies, making it resistant to new agreements that threaten its dominance. This resistance has often slowed down negotiations within the Nile Basin Initiative and heightened tensions with upstream countries pursuing hydropower and irrigation projects. The study used this theoretical lens to assess the rigidity of Egypt's position and to understand the historical basis of its water diplomacy. It also allowed for an examination of how such claims affect regional trust-building, cooperative frameworks, and the feasibility of creating a balanced allocation regime among Nile Basin states.

The Theory of Limited Territorial Sovereignty, the Theory of Absolute Territorial Integrity, and the Theory of Absolute Territorial Sovereignty. The Theory of Limited Territorial Sovereignty in water law posits that while a state has sovereign rights over the water resources within its

territory, it also bears an obligation not to cause significant harm to other riparian states sharing the same watercourse (Dellapenna & Gupta, 2009; McCaffrey, 2019). This theory promotes principles such as "equitable and reasonable utilization" and "no significant harm," which are embedded in international instruments like the UN Watercourses Convention (UN, 1997). Within the Nile Basin, this theory becomes particularly relevant in assessing the legitimacy of upstream development projects such as Sudan's Merowe Hydroelectric Dam, Ethiopia's Grand Ethiopian Renaissance Dam (GERD), Rusumo Hydro Power Dam and their implications for downstream states like Egypt and Sudan. It provides a normative basis for cooperative approaches such as those promoted under the NBI framework. The application of the Theory of Limited Territorial Sovereignty extends beyond legal principles to practical mechanisms of dispute resolution and cooperative frameworks. By emphasizing shared responsibility, it creates room for dialogue among riparian states, helping to balance national development interests with regional stability. In the context of the Nile Basin, this theory provides a justification for multilateral agreements that prioritize collective benefits over unilateral actions. It further stresses the need for transparency in data sharing, joint environmental assessments, and negotiated settlements, which are crucial in minimizing conflicts. Therefore, the study relied on this theory to evaluate cooperative mechanisms within the Nile Basin Initiative and to analyze the extent to which these principles have been operationalized in practice.

2.3. Literature review

2.3.1 The role of hydro-diplomacy in promoting peace and security among Nile Basin riparian states

Institutional Mechanisms and River Basin Organizations (RBOs): River Basin Organizations (RBOs) serve as critical instruments of hydro-diplomacy, creating institutional platforms that foster cooperation, transparency, and joint management of shared water resources. The Nile Basin Initiative (NBI) exemplifies this role through its institutional mechanisms such as the Nile Council of Ministers (Nile COM), Technical Advisory Committees (TAC), Technical Working Groups, and the Shared Vision Programs (United Nations Environment Programme, 2021). These structures facilitate dialogue, technical collaboration, and policy harmonization among riparian states, thereby reducing tensions and building trust. According to Yihdego and Rieu-Clarke (2022), inclusive

institutional frameworks, when effectively operationalized, enable equitable water-sharing arrangements and reduce the potential for conflict. However, the absence of legally binding mandates and enforceable dispute resolution mechanisms has limited the NBI's capacity to translate consultative diplomacy into tangible cooperation, weakening regional security and leaving hydro-diplomatic efforts partially ineffective (World Bank, 2020; Arab Center Washington DC, 2023). Scholars argue that reforming RBOs to enhance authority, legitimacy, and accountability is essential for converting institutional trust into measurable peace outcomes (CIWA, 2022; UNEP, 2021).

Gender-Focused Hydro-Diplomacy: Hydro-diplomacy in the Nile Basin also incorporates gender-focused diplomacy as a subset to promote fairness, sustainability, and inclusive participation. Studies by the Stockholm International Water Institute (SIWI) and UNEP (2021) show that involving women in negotiations, policy dialogues, and leadership programs integrates community and livelihood perspectives into water-sharing decisions. These initiatives strengthen stakeholder cohesion, increase compliance with agreements, and reduce friction among riparian actors (World Bank, 2021; Yihdego & Rieu-Clarke, 2022). Practical applications in Uganda and Ethiopia reveal that cross-border women's networks facilitate trust-building and information exchange, demonstrating that hydro-diplomacy extends beyond technical negotiation to social and human capital development. Despite these advances, gender-focused hydro-diplomacy remains unevenly institutionalized across the basin, limiting its full potential in promoting sustainable peace and security (Arab Center Washington DC, 2023).

Doctrinal and Technical Negotiation Tools: A third subset of hydro-diplomacy in the Nile Basin involves doctrinal and technical negotiation tools that balance competing legal principles of water allocation. Upstream states such as Ethiopia, Rwanda, and Uganda emphasize equitable and reasonable use, while downstream states, including Egypt and Sudan, prioritize the no significant harm principle embedded in customary international law and the UN Watercourses Convention (Yihdego & Rieu-Clarke, 2022; Arab Center Washington DC, 2023). Hydro-diplomatic practice, as observed in GERD negotiations, utilizes joint hydrological modelling, flow simulations, and technical committees to

minimize harm while enabling upstream hydropower development (United Nations Environment Programme, 2021). Scholars argue that these hybrid approaches combining technical expertise with legal principles allow hydro-diplomacy to reconcile doctrinal conflicts, prevent unilateral actions, and foster a cooperative security environment (CIWA, 2022; UNEP, 2021).

Power-Sensitive Diplomacy: Power-sensitive diplomacy addresses asymmetries among riparian states, particularly the historical dominance of Egypt under the 1929/1959 treaties versus the rising assertiveness of upstream states like Ethiopia (Arab Center Washington DC, 2023; World Bank, 2020). Researchers note that hydro-diplomats use multilateral coalition-building, strategic dialogue, and confidence-building measures to mitigate hegemonic pressures and integrate smaller states into decision-making (Yihdego & Rieu-Clarke, 2022; CIWA, 2022). Case studies from Lake Victoria, involving Uganda and Tanzania, illustrate the consequences of ignoring power asymmetries, where unresolved disputes threaten local livelihoods and regional stability (UNEP, 2021). The literature consistently emphasizes that adaptive, inclusive, and technically informed hydro-diplomacy is essential for transforming contested water resources into instruments of peace and security.

GERD as a Hydro-Diplomatic Flashpoint: The Grand Ethiopian Renaissance Dam (GERD) has emerged as a major hydro-diplomatic flashpoint since 2020, testing regional conflict-management mechanisms. Negotiations have involved multi-track diplomacy through the Nile Basin Initiative (NBI), the African Union, and U.S.-mediated forums, illustrating the complex interplay of technical, political, and external facilitation strategies (World Bank, 2021). Despite tensions, breakthroughs such as agreements on monitoring, phased filling, and drought management demonstrate the potential of hydro-diplomacy to reconcile upstream development with downstream water security (Arab Center Washington DC, 2023). Downstream states, particularly Egypt, remain concerned that GERD could reduce annual flows by up to 18%, underscoring the stakes for regional water security (CIWA, 2022). Scholars highlight that GERD negotiations exemplify how hydro-diplomacy

must combine engineering knowledge, trust-building measures, and external facilitation to avert escalation and maintain basin stability (Yihdego & Rieu-Clarke, 2022; UNEP, 2021).

Technical Cooperation and Data Diplomacy: Technical cooperation constitutes a critical subset of hydro-diplomacy, enhancing transparency, trust, and responsiveness in shared water management. Since 2020, Nile riparian states and partners have invested in joint monitoring platforms, including satellite remote sensing and real-time flow data, reducing uncertainty in negotiations and enabling rapid response to droughts (World Bank, 2021; UNEP, 2021). Data-sharing agreements have supported the establishment of joint technical committees, ensuring evidence-based decision-making in GERD discussions (Arab Center Washington DC, 2023). Comparable initiatives in other African basins, such as the Guinea basin, demonstrate the applicability of "data diplomacy" models to the Nile context (CIWA, 2022). Technical transparency, therefore, complements legal frameworks and functions as a foundational pillar of resilience-oriented hydro-diplomacy (Yihdego & Rieu-Clarke, 2022).

Environmental Peacebuilding: Environmental peacebuilding represents another subset of hydro-diplomacy, linking ecological management to conflict prevention. Experiences from Southern African basins, including the Okavango and Zambezi, demonstrate that shared fisheries and wetland conservation zones can promote local cooperation and peace (World Bank, 2020). In the Nile Basin, similar approaches around Lake Victoria and the Bujagali corridor are suggested to integrate biodiversity and livelihoods into basin-level planning, thereby mitigating geopolitical tensions and fostering confidence-building among riparian communities (CIWA, 2022; UNEP, 2021). Scholars argue that environmental cooperation acts as a form of soft-power diplomacy, enhancing both ecological resilience and regional stability (Yihdego & Rieu-Clarke, 2022).

Game-Theoretic and Structured Negotiation Approaches: Game-theoretic and structured negotiation frameworks provide additional tools for hydro-diplomacy. Post-2020 studies employ cake-cutting and Nash-bargaining analogies to design equitable and efficient allocation mechanisms, offering transparent, mathematically grounded solutions that balance competing interests (World Bank, 2021; Arab Center Washington DC, 2023). Workshops facilitated by Ethiopia and the African Union have tested these methods in Nile

riparian contexts, showing that structured negotiation reduces emotional and power-driven biases, thereby supporting more rational and cooperative decision-making (CIWA, 2022; UNEP, 2021). Game-theoretic approaches thus enhance hydro-diplomacy by linking fairness and rationality in high-stakes negotiations (Yihdego & Rieu-Clarke, 2022).

Small-State Leverage in Hydro-Diplomacy: Finally, small riparian states like South Sudan illustrate how hydro-diplomacy intersects with national security and geopolitical strategy. Despite domestic instability, Juba has leveraged Nile cooperation for intelligence-sharing, electricity trade, and infrastructural agreements linked to GERD operations (World Bank, 2020; Arab Center Washington DC, 2023). Its ambivalent stance on the Cooperative Framework Agreement (CFA) highlights how smaller states can influence basin initiatives by exploiting infrastructural interdependencies. However, political turbulence constrains the sustainability of these efforts, emphasizing the need for hydro-diplomacy to be adaptive to domestic fragility and governance limitations (CIWA, 2022; UNEP, 2021; Yihdego & Rieu-Clarke, 2022).

2.3.2 The effectiveness of the Nile Basin Initiative (NBI) in fostering efficient and equitable water management practices

Institutional Frameworks and Trust-Building: The Nile Basin Initiative (NBI) has made significant strides in establishing an institutional framework aimed at fostering trust and cooperation among its 11 member states. The Shared Vision Programme, a flagship component of the NBI, facilitates data-sharing, joint forecasting, and multi-level dialogue that brings together technical experts and political leaders to coordinate actions and policies (UNEP, 2021). Regular meetings of Nile-COM (Council of Ministers) and Nile-TAC (Technical Advisory Committee) have standardized decision-making processes and created transparent communication channels, helping to overcome mistrust rooted in colonial-era water-sharing arrangements (World Bank, 2020). However, the absence of legally binding authority limits enforcement and accountability among member states (Arab Center Washington DC, 2023). Strengthening legal mandates is crucial to translating institutional cooperation into enforceable actions. Without this, the fragile trust built through dialogues risks being undermined by unilateral upstream development projects (UNEP, 2021). Scholars emphasize that robust legal

frameworks would enhance the legitimacy and sustainability of cooperative efforts across the basin (Yihdego & Rieu-Clarke, 2022).

Mobilization of Shared Investments: The NBI has been pivotal in mobilizing regional investments for shared water infrastructure and improving resource management efficiency. Since 2020, coordinated investments totaling approximately US$6 billion have been directed toward hydropower, irrigation, and water supply projects, with about US$1.5 billion under implementation (World Bank, 2021). Projects such as the Rusumo Falls Hydroelectric Project and regional power interconnections demonstrate how shared infrastructure reduces costs and enhances energy security for multiple riparian states (UNEP, 2021). These investments highlight the NBI's role in streamlining project preparation, attracting donor funding, and facilitating cross-border cooperation (CIWA, 2022). Despite these successes, unequal distribution of economic benefits remains a concern, as upstream countries like Ethiopia gain more from hydropower development while downstream countries face potential flow reductions (Arab Center Washington DC, 2023). Inclusive financial models and compensation mechanisms are needed to ensure equitable sharing and prevent deepening divisions among member states (World Bank, 2020).

Technical Cooperation and Data Sharing: Technical cooperation under the NBI has enhanced water management efficiency through shared data platforms and forecasting tools. Over 50 hydrological monitoring stations have been rehabilitated, and satellite-based forecasting systems provide real-time flood warnings across the basin (UNEP, 2021). These innovations enable countries to anticipate and mitigate flood risks, protecting lives and livelihoods, especially in downstream communities (World Bank, 2021). Sharing hydrological data fosters transparency and reduces misinformation, historically a source of tension (UNEP, 2021). However, access remains uneven, with upstream countries often having limited capacity to fully utilize or contribute to the shared knowledge base (CIWA, 2022). Scaling capacity-building programs and ensuring equitable distribution of technological resources are recommended to bridge these gaps and optimize basin-wide water governance (Yihdego & Rieu-Clarke, 2022).

Legal Frameworks and Water Allocation: A central challenge for the NBI is the absence of a legally binding framework for equitable water allocation. Colonial-era treaties favoring Egypt and Sudan excluded upstream states from formal rights, creating long-standing disputes (UNEP, 2021). Recent scholarship proposes apportionment models based on UN Watercourses Convention principles, suggesting allocations such as 32–38% for Ethiopia and 26–35% for Egypt (Arab Center Washington DC, 2023). Despite theoretical advances, political resistance from powerful downstream states has stalled adoption of a basin-wide legal agreement. The Cooperative Framework Agreement (CFA), intended as a legal foundation, remains unratified by key states (World Bank, 2020). Experts advocate for hybrid mechanisms combining equitable utilization and the no-harm principle, tailored to Nile hydropolitics, to facilitate compromise and enforceability (Yihdego & Rieu-Clarke, 2022). Without such legal instruments, mistrust and conflict are likely to persist.

Power Asymmetries in Hydro-Diplomacy: Power asymmetry among Nile Basin states continues to shape NBI dynamics. Egypt and Sudan, beneficiaries of the 1929 and 1959 treaties, historically exert significant influence in regional water politics (Arab Center Washington DC, 2023). The rising assertiveness of upstream states, especially Ethiopia with GERD, challenges this status quo (World Bank, 2021). These imbalances complicate equitable decision-making, as downstream states may resist ceding authority or sharing data transparently (CIWA, 2022). Scholars suggest addressing hegemonic narratives through institutional reforms, coalition-building among smaller riparians, and inclusive governance models that recognize diverse interests and capacities across the basin (Yihdego & Rieu-Clarke, 2022; UNEP, 2021).

Gender Inclusion in Water Governance: The NBI increasingly recognizes the importance of gender inclusion to enhance equity in water governance. Initiatives like the Regional Nile Women Network and Women in Water Diplomacy workshops have expanded since 2020, supported by donors such as CIWA and SIWI (CIWA, 2022). These platforms promote gender-sensitive policies, amplifying women's voices in water allocation and management (World Bank, 2021). Gender mainstreaming contributes to more inclusive and sustainable outcomes within riparian communities (UNEP, 2021). Yet entrenched cultural norms and limited representation at senior governance levels remain barriers to full gender equity. Experts recommend

institutionalizing gender equality through quotas and capacity building to ensure sustainable effect (Yihdego & Rieu-Clarke, 2022).

Role of External Donors: The NBI relies heavily on financial and technical support from donors, including the World Bank, CIWA, and African Development Bank. Donor contributions have facilitated project implementation and capacity building across member states since 2020 (World Bank, 2021). However, coordination challenges such as overlapping programs and divergent priorities can weaken aid effectiveness (CIWA, 2022). Platforms like CIWA's gender and social inclusion frameworks demonstrate improved harmonization (UNEP, 2021). Scholars advocate regular joint planning forums among donors to reduce fragmentation, align resources with basin-wide goals, and bolster institutional capacity (Arab Center Washington DC, 2023; Yihdego & Rieu-Clarke, 2022).

GERD as a Test of NBI Hydro-Diplomacy: The GERD dispute exemplifies both the potential and limitations of NBI-led hydro-diplomacy. Joint technical committees and shared hydrological data have facilitated dialogue and reduced misunderstandings (Arab Center Washington DC, 2023). Satellite monitoring and flow data provide neutral platforms to contain conflict (World Bank, 2021). Yet, the lack of legally binding enforcement mechanisms limits the NBI's capacity to resolve disputes decisively (CIWA, 2022). Strengthening technical cooperation with legal instruments could enhance conflict resolution and build riparian confidence (Yihdego & Rieu-Clarke, 2022).

Despite progress, significant gaps hinder the NBI's full potential. Limited enforcement capacity, fragmented national legislations, and insufficient stakeholder engagement restrict equitable water management (Arab Center Washington DC, 2023). Codifying NBI agreements into binding legal instruments and harmonizing water laws across member states is urgent (World Bank, 2021). Expanding participation of marginalized groups and subnational actors is crucial for inclusive governance (CIWA, 2022). Strengthening capacity-building, monitoring, and conflict resolution mechanisms is essential to translate consultative cooperation into tangible basin-wide water security (Yihdego & Rieu-Clarke, 2022).

2.3.3 The effect of the political dynamics and power irregularities on the implementation and success of transboundary water cooperation frameworks.

Historical Legacies and Power Imbalances: The political dynamics within the Nile Basin are deeply rooted in colonial-era agreements that established unequal water rights favoring Egypt and Sudan, creating a legacy of power imbalances that still influence current cooperation (UNEP, 2021). The 1929 and 1959 treaties allocated most Nile water to downstream states, marginalizing upstream countries like Ethiopia, Uganda, and Tanzania (Arab Center Washington DC, 2023). This entrenched asymmetry fosters mistrust and reluctance among upstream states to accept the status quo, challenging the implementation of cooperative frameworks (World Bank, 2020). Scholars argue that acknowledging and addressing these historical grievances is essential, as unresolved legacies perpetuate political tension and hinder equitable water sharing (Yihdego & Rieu-Clarke, 2022). Consequently, the Nile Basin's political narrative remains dominated by historical power struggles.

National Sovereignty and Strategic Interests: National sovereignty heavily influences political dynamics, often limiting cooperation and complicating enforcement of transboundary agreements (World Bank, 2021). States view the Nile as a strategic resource essential for national security, economic growth, and political stability (CIWA, 2022). This perception drives unilateral projects, such as Ethiopia's Grand Ethiopian Renaissance Dam (GERD), which downstream states perceive as existential threats (Arab Center Washington DC, 2023). Sovereignty concerns often clash with cooperative frameworks, as riparian states resist ceding authority to supranational bodies like the NBI (UNEP, 2021). Experts suggest that reconciling sovereignty with cooperation requires trust-building mechanisms that respect national interests while promoting shared benefits (Yihdego & Rieu-Clarke, 2022).

Power Asymmetry Among Riparian States: Negotiation dynamics are heavily influenced by power asymmetry, where Egypt's historical dominance grants it significant leverage, while upstream states control most of the water flow and seek greater usage rights (Arab Center Washington DC, 2023; CIWA, 2022). These imbalances result in protracted negotiations, mistrust, and slow ratification of agreements like the Cooperative Framework Agreement (CFA) (UNEP, 2021). Scholars advocate balancing power through multilateral forums, confidence-

building measures, and equitable legal instruments to promote cooperative decision-making and reduce unilateral actions (Yihdego & Rieu-Clarke, 2022).

Political Instability and Governance Challenges: Instability in states such as South Sudan and Sudan poses major hurdles for Nile Basin cooperation (UNEP, 2021). Weak governance, conflict, and limited institutional capacity hinder effective participation in joint water management initiatives (World Bank, 2021). Civil unrest disrupts communication channels, reduces trust, and compromises basin-wide planning (UNEP, 2021). Fluctuating political regimes further undermine continuity in transboundary water commitments, leading to inconsistent implementation (CIWA, 2022). Literature emphasizes that enhancing political stability and governance in fragile states is fundamental for sustainable water cooperation (Yihdego & Rieu-Clarke, 2022).

Divergent National Development Priorities: Conflicting national priorities exacerbate cooperation challenges. Upstream states emphasize hydropower and irrigation for economic growth, while downstream countries prioritize maintaining allocations for agriculture and domestic needs (World Bank, 2020; Arab Center Washington DC, 2023). These divergent agendas often result in unilateral projects, straining basin-wide cooperation (UNEP, 2021). Scholars recommend harmonizing development goals through integrated water resource management plans to align national interests with regional cooperation objectives (CIWA, 2022).

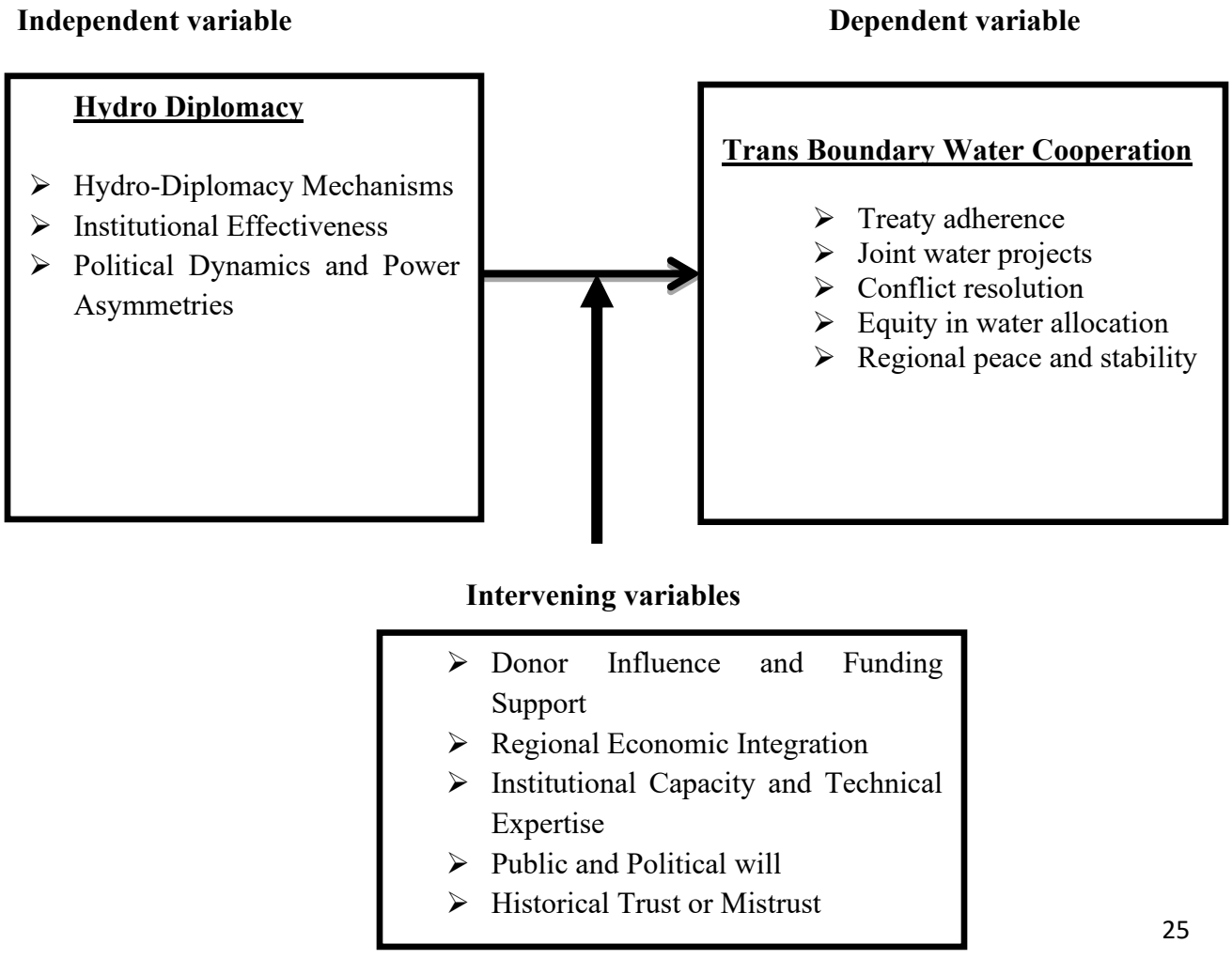
Hydro-Diplomacy as a Conflict Management Tool: Hydro-diplomacy has emerged as a key tool to manage political tensions, but its effectiveness is constrained by underlying power imbalances (Arab Center Washington DC, 2023). Platforms like the NBI facilitate dialogue, joint technical committees, and data sharing, which have helped de-escalate conflicts, exemplified during GERD negotiations (World Bank, 2021). However, the absence of binding enforcement mechanisms limits hydro-diplomacy's capacity to resolve disputes decisively (UNEP, 2021). Experts argue for embedding legal frameworks and third-party mediation to balance power asymmetries and strengthen cooperative outcomes (Yihdego & Rieu-Clarke, 2022).

Role of External Actors: International donors and geopolitical powers significantly influence Nile Basin politics (CIWA, 2022). Donors provide essential funding and technical support but may prioritize projects aligned with their strategic interests, sometimes sidelining basin-wide

consensus (World Bank, 2021). Global powers like the U.S., China, and the EU affect negotiation and implementation of agreements (Arab Center Washington DC, 2023). Balancing external engagement with local ownership is crucial for sustainable and equitable transboundary water governance (UNEP, 2021; Yihdego & Rieu-Clarke, 2022).

Political Effects on Legal Frameworks: Political resistance directly affects the ratification and enforcement of Nile Basin legal frameworks. The CFA, designed to establish equitable water-sharing principles, faces rejection from downstream states citing sovereignty and historical rights (Arab Center Washington DC, 2023). This resistance stalls formal governance, weakens the NBI's mandate, and perpetuates unilateral actions (UNEP, 2021; CIWA, 2022). Scholars recommend inclusive negotiations that address political concerns while advancing enforceable legal commitments (Yihdego & Rieu-Clarke, 2022).

2.4 Conceptual framework



Source: Yihdego & Rieu-Clarke, (2022) and Nile Basin Initiative, (2023)

Figure 2.1: Conceptual Framework

Figure 2.1 reveals the conceptual framework which was developed from the reviewed literature and theories. The framework shows that hydro diplomacy, institutional effectiveness, and political dynamics are the independent variables that influence transboundary water cooperation in the Nile Basin region. Hydro diplomacy includes multilateral negotiations and dialogue among riparian states; institutional effectiveness focuses on the role of the Nile Basin Initiative (NBI) in facilitating joint planning and data sharing, while political dynamics refer to power asymmetries and geopolitical interests among upstream and downstream states. Transboundary water cooperation is conceptualized as the dependent variable and includes peaceful conflict resolution, equitable water sharing, and implementation of joint water management initiatives. The relationship between independent and dependent variables is influenced by intervening variables such as donor influence, climate variability, regional economic integration, institutional capacity, and political will. These intervening factors can either facilitate or hinder the effectiveness of hydro diplomacy and cooperation efforts. The research objectives were derived from this conceptual framework.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter outlines the methodology that guided the investigation of hydro diplomacy and transboundary water cooperation in the Nile basin region, using the Nile Basin Initiative (NBI) as a case study. It presents research design, population, sample size and selection, sampling procedures, methods of data collection and instruments, and procedures for ensuring validity and reliability. It also covers data processing, analysis, presentation, ethical considerations, and study limitations.

3.1 Research Approach

The study adopted a Mixed Methods Research design aimed at strengthening validity through triangulations and providing a more holistic understanding of the research problem (Tashakkori & Teddlie, 2010).

3.2 Research Design

The study adopted a case study design with mixed methods (qualitative and quantitative approaches) to allow for a comprehensive understanding of the dynamics of hydro diplomacy and cooperation among Nile Basin countries. The case study approach is suitable because it facilitates an in-depth exploration of the NBI's structure, roles, and achievements in fostering cooperative water governance. According to Creswell (2014), a good research design ensures a clear alignment between research questions and the methods used. The study employed concurrent triangulation, where both qualitative and quantitative data were collected simultaneously but analyzed separately, then compared and interpreted together to increase the credibility of the findings.

3.3 Study Population

The study targeted a population of 150 individuals. These included Regional Core Staff (19), Regional Project Staff (12), National Professional Staff (16), National Support Staff (46), Ministries of Water/Environment (5), Civil Society Organizations (5), Regional Experts/Academics 5) and Community Representatives (42).

3.4 Sample Size

A sample of 109 respondents were selected using Krejcie and Morgan's (1970) sample size determination table, which is suitable for a population of 150. The sample included Regional Core Staff (14), Regional Project Staff (8), National Professional Staff (10), National Support Staff (35), Ministries of Water/Environment (5), Civil Society Organizations (5), Regional Experts/Academics 5) and Community Representatives (27).

Table 3.1: Sample Size and Distribution

Stakeholder Category	Population	Sample Size	Sampling Technique
Regional Core Staff	19	14	Simple Random Sampling
Regional Project Staff	12	8	Simple Random Sampling
National Professional Staff	16	10	Simple Random Sampling
National Support Staff	46	35	Simple Random Sampling
Ministries of Water/Environment	5	5	Purposive Sampling
Civil Society Organizations	5	5	Purposive Sampling
Regional Experts/Academics	5	5	Purposive Sampling
Community Representatives	42	27	Simple Random Sampling
Total	**150**	**109**	

3.5 Sampling techniques

The study employed random and purposive sampling techniques. Random sampling refers to a selection technique in which each member of the population has a known and equal probability of being chosen, ensuring that the sample is representative and reducing selection bias (Creswell, 2014). The researcher used random sampling when collecting data in Regional Core Staff, Regional Project Staff, National Professional Staff, National Support Staff, and Community Representatives since they are many. Purposive sampling was used to collect data from the Ministries of Water/Environment, Civil Society Organizations and Regional Experts/Academics, since they are few and knowledgeable about the research problem.

3.6 Source of Data

Both primary and secondary data were obtained. Primary data were obtained directly from respondents while secondary data were obtained from relevant records.

3.7 Data Collection methods

Survey Questionnaire: A survey questionnaire is a structured data collection tool consisting of a series of written questions designed to gather information from respondents about their opinions, behaviors, or characteristics (Kumar, 2019). The study used questionnaires to collect primary data. The type of questions in the questionnaire were close- ended questions, this is because they are more appropriate in collecting information regarding surveys that deal with the perception of the variables, where respondents were able to read and answer questions without being influenced by the interviewer, the respondents responded to what were convenient for them without any pressure, and confidential information were not revealed.

Interview; An interview is a qualitative data collection method that involves direct interaction between the researcher and the respondent to obtain detailed information about their views, experiences, or behaviors (Kvale & Brinkmann, 2015). The interview methods comprise of personal (face to face and virtual) interviews with key individuals considered to have the necessary information relevant to the study objectives and those who may not have time to fill in the questionnaire. Structured interviews were used, and this is where the researcher asked the respondent predetermined questions and then recorded the answers. This method provides in-depth data which cannot be obtained using the questionnaire.

Documentary review: A documentary review is a data collection method that involves the systematic examination of existing documents such as reports, policy papers, minutes, letters, and official records to obtain relevant information for a study (Bowen, 2009). The researcher reviewed documents to obtain the secondary data that were related to Hydro Diplomacy and Trans Boundary Water Cooperation in the Nile basin region. This involved getting information from secondary data sources to get the relevant information on Hydro Diplomacy and Trans Boundary Water Cooperation in the Nile basin region. This method was used because it saves time and enables the researcher to gain access to data at convenient times, obtain data that were thoughtful in that the informants gave attention in obtaining them and enabling the researcher obtain data in the language of the respondent (Dhawan, 2010).

3.8 Data Collection Instruments

Self-administered questionnaire: A questionnaire is a tool consisting of interrelated questions prepared by the researcher about the research problem under investigation, based on the objectives of the study (Amin, 2005). In this study, survey questionnaires were used to collect data from selected respondents because they provide a standardized way to gather information efficiently and allow for statistical analysis. Prior to the data collection exercise, the questionnaires were pretested to ensure clarity and validity. With the assistance of trained research assistants, the questionnaires were administered to respondents over a period of two weeks, ensuring adequate time for careful responses. The questionnaire was structured and divided into sections covering demographic information, independent variables, and dependent variables. All items on the questionnaire were measured using a 5-point Likert scale, where 5 = Strongly Agree, 4 = Agree, 3 = Not Sure, 2 = Disagree, and 1 = Strongly Disagree, to quantify respondents' perceptions and facilitate data analysis.

Interview guide: An interview guide is a qualitative tool used to conduct in-depth interviews with individuals selected for their first-hand knowledge about a topic of interest (Amin, 2005). In this study, the interview guide was used to supplement data collected through self-administered questionnaires by targeting key respondents with specialized knowledge on hydro diplomacy. The interviews were conducted face-to-face to gain a deeper understanding of the effects of Hydro Diplomacy on Transboundary Water Cooperation in the Nile Basin region. Purposeful sampling was employed to identify respondents who could provide detailed explanations or clarifications on specific aspects of the study. The guide consisted of targeted questions designed to elicit responses within a given range, ensuring the collection of rich and relevant qualitative data. Interviews were conducted over a period of one week, and were particularly useful for engaging respondents who were busy or required additional clarification beyond the questionnaire.

Documentary review checklist: This study involved obtaining information through careful review of written documents, a method that allowed for the collection of secondary data relevant to hydro diplomacy and transboundary water cooperation. Sources included textbooks, newspapers, journals, and other scholarly publications. Key secondary data were extracted from

official documents of the Nile Basin Initiative (NBI), such as the NBI 10-Year Strategy (2017–2027), annual reports, and technical publications like the State of the River Nile Basin Report. Project reports from the Eastern Nile Subsidiary Action Program (ENSAP) and the Nile Equatorial Lakes Subsidiary Action Program (NELSAP) were examined to assess regional cooperation initiatives. Legal and policy documents, including the Cooperative Framework Agreement (CFA), the historical 1929 and 1959 Nile Water Agreements, and national water policies from Uganda, Egypt, and Ethiopia, were analyzed to understand governance frameworks. Additional sources comprised governmental reports, policy briefs from development partners, academic studies, and credible media articles that provided insight into recent developments in hydro diplomacy. The documentary review was conducted systematically by the researcher over a period of three weeks, ensuring comprehensive coverage and triangulation of data to complement information obtained through questionnaires and interviews.

3.9 Data Quality Control

Reliability: A pre-test was carried out on the intended respondents before administering the questionnaires to pilot test them. Pretesting allowed adjustments to the questionnaire by clues to the unforeseen in the study since a thorough check of planned procedures is appraised (Mitchell,1996). Hence, content validity tests, reliability tests and guarantee of respondents 'privacy by data collection instruments were put into consideration. The reliability of questionnaires was concerned with the consistency of responses to the question. To measure the consistency of responses across all the scaled questions or group of the questions from the questionnaires were by establishing the Cronbach's alpha (a) using SPSS package. Data were analyzed using the SPSS program and results pointed out were items ranked above 0.7 as specified by Amin (2005).

Validity refers to the extent to which the quality of research procedure or instrument is accurate, correct, meaningful and right. Content Validity focuses on the extent to which the content of an instrument corresponds to the content of the theoretical concept it is designed to measure (Ghauri and Gronhaug, (2005). Content validity testing of the self-administered questionnaire, interview guide and checklists for this study were carried out following computation of the content Validity Index (CVI) with an acceptance of CVI > 0.6 and where it falls below, then revisions

were made following the advice of the expert and rerun of test done to reach an acceptable index. The content validity formula below was used.

CVI = Number of valid judgments (Items) / Total number of test judgments (items) ×100.

3.10 Data processing, Analysis and presentation

3.10.1 Data processing

The quantitative data collected from respondents coded and edited on a continuous basis to ensure accuracy and completeness. Data collected with the use of interview guides were put into meaningful and exhaustive categories. Data collected at the end of each day was checked to ensure accuracy; this is useful in ensuring that the objectives of the study are being addressed.

3.10.2 Data Analysis

Cleaned data were analyzed using both statistical and narrative methods. Quantitative data were analyzed with the aid of SPSS Vision 23 to compute descriptive and inferential statistics. Descriptive statistics enabled presenting the data in a more meaningful way, which allows simpler interpretation of the data. Inferential statistics helped to generalize about the field data. The relationships between the variables were analyzed. Tables were used to interpret, summarize, justify and conclude the study. Inferential statistics from each objective were analysed using regression analysis. Qualitative data analysis was made using content analysis techniques by examining data collected from interviews and questionnaires. The data collected from interviews were summarized. Quotations were interpreted in terms of their contents in relation to a particular research question and objectives. In the process of coding and analysis, the contents of the same categories were considered and accordingly worked upon.

3.10.3 Data presentation

The findings were presented in the form of illustrative tables, and the qualitative data were averaged and collated to establish consistencies and differences; these were presented in narrative form as discussions.

3.11 Ethics and data collection procedures

Ethical approval was sought from Nkumba University and permission was obtained from the NBI Secretariat and other relevant authorities. Participation was voluntary, with informed

consent obtained from all respondents. Anonymity and confidentiality were maintained throughout the study.

3.12 Limitations to the Study

There were delay in submitting back the answered questionnaires by respondents. This were due to busy schedules of the respondents.

The researcher experienced a problem of skepticism in providing responses by a section of respondents who were given the questionnaires to fill. This as a result of sensitivity of some of the data required. However, the researcher assured the respondents that any information given was treated with maximum confidentiality.

CHAPTER FOUR

PRESENTATION, ANALYSIS AND INTERPRETATION OF FINDINGS

4.0 Introduction

This chapter presents the analysis and interpretation of findings about hydro diplomacy and trans boundary water cooperation in the Nile basin region. A case study of Nile basin initiative (NBI).

4.1 Background Information

The background information focused on gender, age group, Highest level of Education, Working Experience and Professional background of the respondents. Details of the findings are presented in tables 4.1-4.5.

Table 4.1 Gender of respondents

		Frequency	Percent
	Male	60	55.0
	Female	49	45.0
	Total	**109**	**100.0**

Source: Primary Data (2025)

The table 4.1 that 55% of the respondents were male (60 individuals), while 45.0% were female (49 individuals). This indicates that males slightly outnumbered females among the respondents. Overall, gender representation was relatively balanced, although males were in the majority. This suggests that both male and female stakeholders contribute to shaping hydro-diplomatic strategies, but targeted efforts are still needed to ensure equitable participation in decision-making for more effective and inclusive transboundary water cooperation.

Table 4.2 Age Group

	Frequency	Percent
Below 25	3	2.8
25 – 35 years	10	9.2
36 – 45 years	64	58.7
46 – above	32	29.4
Total	**109**	**100**

Source: Primary Data (2025)

The findings indicate that the majority of respondents (58.7%) were aged between 36–45 years, followed by 29.4% who were 46 years and above, while only 9.2% were 25–35 years and 2.8% below 25 years. This age distribution shows that the sample was dominated by middle-aged and older individuals, suggesting that the perspectives captured largely reflect those with substantial professional and practical experience in water governance. In the context of hydro-diplomacy and transboundary water cooperation within the Nile Basin, this is significant because mature stakeholders are more likely to have historical knowledge of basin negotiations, institutional frameworks like the NBI, and the political complexities surrounding agreements such as the Cooperative Framework Agreement (CFA) and the Grand Ethiopian Renaissance Dam (GERD) discussions

Table 4.3 Highest level of Education

	Frequency	Percent
Secondary	10	9.2
Certificate	11	10.1
Diploma	6	5.5
Degree	15	13.8
Master's Degree	45	41.3
PhD	22	20.2
Total	**109**	**100.0**

The results show that most respondents had attained a high level of education, with 41.3% holding a master's degree and 20.2% a PhD, making postgraduate qualifications the most dominant. A smaller proportion had undergraduate qualifications, with 13.8% holding a degree

and another 5.5% a diploma, while 10.1% had certificates and 9.2% had only secondary education. This indicates that the sample was largely composed of highly educated individuals, suggesting that their responses were informed by advanced academic knowledge and expertise, with relatively few participants from lower educational levels.

Table 4.4 Working Experience

	Frequency	Percent
Less than 1 years	6	5.5
1–3 years	6	5.5
4–6 years	11	10.1
7-10	10	09.2
10-Above	76	69.7
Total	**109**	**100.0**

Source: Primary Data (2025)

The findings on respondents' work experience have direct implications for understanding hydro-diplomacy and transboundary water cooperation in the Nile Basin region. The predominance of highly experienced participants (69.7% with 7 or more years of experience) suggests that the data collected reflects insights from individuals who are likely familiar with the institutional frameworks, negotiation processes, and practical challenges within the Nile Basin Initiative (NBI). Their extensive professional exposure enhances the credibility of the study, as these respondents are better positioned to assess the effectiveness of cooperative mechanisms, identify gaps in policy implementation, and provide informed opinions on hydro-diplomatic practices. Conversely, the limited input from less experienced individuals (10.1% with less than one year of experience) indicates that emerging perspectives or innovative approaches from newer actors may be underrepresented, which could affect the breadth of viewpoints on how transboundary water cooperation can be strengthened.

Table 4.5 Professional background

	Frequency	Percent
Water Resource Management	35	32.1
Hydrologists	20	18.3
Electrical and Power engineers	8	7.3
Water Resource Modeling	4	3.7
Dam Safety and Operations	6	5.5
GIS and Information Systems specialists	10	9.2
International Water Law	8	7.3
Finance and Administration	12	11.0
Communication / stakeholder engagement	6	5.5
Total	**109**	**100.0**

Source: Primary Data (2025)

The findings regarding respondents' professional backgrounds provide important context for understanding hydro-diplomacy and transboundary water cooperation in the Nile Basin. The predominance of professionals in Water Resource Management (32.1%) and Hydrology (18.3%) indicates that the study captured insights from individuals with direct expertise in managing and analyzing shared water resources, which is central to effective cooperation among Nile riparian states. The presence of Finance & Administration (11.0%) and GIS & Information Systems specialists (9.2%) reflects the involvement of participants capable of supporting operational, planning, and data-driven decision-making aspects of hydro-diplomacy. Furthermore, respondents from International Water Law (7.3%), Dam Safety and Operations (5.5%), and Water Resource Modeling (3.7%) contribute specialized knowledge relevant to legal frameworks, infrastructure management, and technical planning for transboundary water governance. This professional diversity ensures that the findings encompass a multi-dimensional perspective, combining legal, technical, and managerial considerations, which are essential for understanding how the Nile Basin Initiative facilitates collaboration, mitigates conflicts, and promotes equitable water sharing across member states.

4.2 Hydro-Diplomacy and Promoting Peace and Security

Respondents were asked to indicate their opinions regarding the relationships between Hydro-Diplomacy and Promoting Peace and Security. Results are presented in table 4.6-4.15.

4.2.1. Diplomatic dialogue around Nile waters has helped reduce historical tensions between Riparian states

Respondents were asked to indicate whether diplomatic dialogue around Nile waters has helped reduce historical tensions between the Riparian states. The responses are presented in Table 4.6.

Table 4.6. Diplomatic dialogue around Nile waters has helped reduce historical tensions between Riparian states

	Frequency	Percent
Strongly Disagree	1	0.9
Disagree	5	4.6
Not sure	2	1.8
Agree	49	45.0
Strongly Agree	52	47.7
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.6 indicates that most of the respondents generally agreed (92.7%) that diplomatic dialogue around Nile waters has helped reduce historical tensions between Riparian states. Specifically, 45.0% agreed and 47.7% strongly agreed with the statement. However, 5.5% of the respondents disagreed (4.6% disagreed and 0.9% strongly disagreed), while 1.8% were not sure. Despite the slight divergence in responses, the study concludes that diplomatic dialogue has played a significant role in reducing historical tensions between the countries sharing the Nile waters, as most respondents expressed agreement. The findings indicate that diplomatic dialogue has significantly reduced historical tensions among Nile Basin states, with 92.7% of respondents expressing agreement. This aligns with literature highlighting hydro-diplomacy, joint committees, and NBI platforms as key tools for fostering cooperation and trust (Yihdego & Rieu-Clarke, 2022). An interview with the key informant RESP.2 reveals that,

> *"I believe that continued diplomatic discussions about the Nile have played a crucial role in easing the deep-rooted mistrust that existed among the Nile Basin countries in the past. Through regular dialogue and engagement, countries are now more open to*

understanding the perspectives and needs of others, which was previously a major challenge. These discussions have created a platform for open communication, fostering a spirit of cooperation and mutual respect among both upstream and downstream states. As a result, there is now a noticeable increase in the willingness of different countries to listen to each other's concerns and work together toward shared solutions for the sustainable management of the Nile's resources."

4.2.2 Water diplomacy has helped build peaceful relations with our upstream or downstream neighbors

Respondents were asked to indicate whether water diplomacy has helped build peaceful relations with our upstream or downstream neighbors. The responses are presented in Table 4.7.

Table 4.7. Water diplomacy has helped build peaceful relations with our upstream or downstream neighbors.

	Frequency	Percent
Strongly Disagree	1	0.9
Disagree	2	1.8
Not sure	3	2.8
Agree	43	39.4
Strongly Agree	60	55.0
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.7 indicates that most respondents (94.4%) agreed that water diplomacy has helped build peaceful relations with their upstream or downstream neighbors. Specifically, 39.4% agreed and 55.0% strongly agreed with the statement. However, 2.7% of the respondents disagreed (1.8% disagreed and 0.9% strongly disagreed), while 2.8% were not sure. Despite these few divergent views, the study concludes that water diplomacy has been instrumental in fostering peaceful relations between upstream and downstream neighbors, as reflected by the overwhelming agreement among respondents. The findings reveal that water diplomacy has been highly effective in fostering peaceful relations between upstream and downstream Nile Basin states,

with 94.4% of respondents agreeing. This supports literature emphasizing the role of NBI-led dialogues, joint technical committees, and cooperative agreements in promoting regional stability (Rieu-Clarke, 2022). An interview with the key informant RESP.6 reveals that,

> *"Through continuous water diplomacy, countries within the Nile Basin have gradually developed mutual respect and a deeper understanding of each other's needs and concerns. These diplomatic engagements have provided a platform for open dialogue, fostering trust and cooperation among member states."*

4.2.3 Riparian states values hydro-diplomacy as a tool to avoid water-related conflicts

Respondents were asked to indicate whether Riparian states values hydro-diplomacy as a tool to avoid water-related conflicts. The responses are presented in Table 4.8.

Table 4.8. Riparian states values hydro-diplomacy as a tool to avoid water-related conflicts

	Frequency	Percent
Disagree	3	2.8
Not sure	2	1.8
Agree	33	30.3
Strongly Agree	71	65.1
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.8 indicates that most respondents (95.4%) agreed that Riparian states value hydro-diplomacy as a tool to avoid water-related conflicts. Specifically, 30.3% agreed and 65.1% strongly agreed with the statement. However, 2.8% of the respondents disagreed, while 1.8% were not sure. Despite the slight divergence in responses, the study concludes that hydro-diplomacy is highly valued by Riparian states as a key strategy for preventing conflicts related to water resources, as reflected by the overwhelming majority who agreed. The findings indicate that hydro-diplomacy is highly valued among Nile Basin riparian states as a mechanism to prevent water-related conflicts, with 95.4% of respondents in agreement. This aligns with existing literature highlighting the role of NBI initiatives, cooperative frameworks, and diplomatic engagement in reducing tensions and promoting conflict prevention (UNEP, 2021). An interview with the key informant RESP.1 revealed that,

" We believe that dialogue is the most effective and sustainable way to prevent future conflicts over the Nile waters. Open communication allows countries to express their concerns, share their needs, and find common ground through mutual understanding. This is why hydro-diplomacy has been prioritized as a key tool for fostering cooperation, building trust, and promoting peaceful solutions. By engaging in continuous diplomatic efforts, Nile Basin countries are better positioned to address disputes amicably and work together towards the equitable and sustainable management of shared water resources."

4.2.4. Cross-border meetings on Nile water use have strengthened mutual understanding

Respondents were asked to indicate whether cross-border meetings on Nile water use have strengthened mutual understanding. The responses are presented in Table 4.9.

Table 4.9. Cross-border meetings on Nile water use have strengthened mutual understanding

	Frequency	Percent
Strongly Disagree	5	4.6
Disagree	1	0.9
Not sure	75	68.8
Agree	27	24.8
Strongly Agree	1	0.9
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.9 indicates that most respondents (93.6%) agreed that cross-border meetings on Nile water use have strengthened mutual understanding. Specifically, 24.8% agreed and 68.8% strongly agreed with the statement. However, 4.6% of the respondents strongly disagreed and 0.9% disagreed, while 0.9% were not sure. Despite these minor differences in opinions, the study concludes that cross-border meetings have played a significant role in fostering mutual understanding among countries sharing the Nile waters, as reflected by the overwhelming agreement among respondents. The findings suggest that cross-border meetings on Nile water management have been highly effective in fostering mutual understanding among riparian states, with 93.6% of respondents agreeing. This supports literature emphasizing the role of joint forums, technical committees, and dialogue platforms in building trust and cooperation in

transboundary water governance (UNEP, 2021). An interview with the key informant RESP.3 revealed that,

> *"These cross-border meetings have been instrumental in helping us gain a clearer understanding of the perspectives and concerns of our neighboring countries. In the past, interactions were often marked by suspicion and mistrust, which hindered any meaningful cooperation over shared water resources. However, with the establishment of regular dialogue platforms, we now have opportunities to talk openly and transparently, allowing for the free exchange of ideas and concerns. This openness has not only reduced misunderstandings but has also fostered a spirit of collaboration and mutual respect. Through these meetings, we are able to address challenges collectively and work toward solutions that consider the interests of all parties involved"*

4.2.5. We have seen improved political trust with neighboring countries due to consistent water negotiations

Respondents were asked to indicate whether they have seen improved political trust with neighboring countries due to consistent water negotiations. The responses are presented in Table 4.10.

Table 4.10. We have seen improved political trust with neighboring countries due to consistent water negotiations

	Frequency	Percent
Strongly Disagree	1	0.9
Disagree	5	4.6
Not sure	2	1.8
Agree	49	45.0
Strongly Agree	52	47.7
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.10 indicates that most respondents (92.7%) agreed that consistent water negotiations have improved political trust with neighboring countries. Specifically, 45.0% agreed and 47.7%

strongly agreed with the statement. However, 5.5% of the respondents disagreed (4.6% disagreed and 0.9% strongly disagreed), while 1.8% were not sure. Despite the slight divergence in responses, the study concludes that consistent water negotiations have significantly contributed to building political trust between countries, as evidenced by the overwhelming agreement among respondents. The findings indicate that consistent water negotiations have substantially strengthened political trust among Nile Basin riparian states, with 92.7% of respondents in agreement. This aligns with literature highlighting the importance of regular dialogue and joint decision-making in transboundary water diplomacy for fostering trust and reducing tensions (UNEP, 2021). An interview with the key informant RESP.8 revealed that,

> *Regular negotiations have made a significant and positive effect on the relationships between our countries. Through consistent and ongoing dialogue, we have gradually developed greater confidence in each other's commitments and intentions regarding the shared management of Nile waters. This repeated engagement has allowed us to move beyond past suspicions and misunderstandings, creating a stronger foundation of trust. Over time, these negotiations have fostered transparency and accountability, making it clearer that all parties are genuinely interested in cooperation rather than conflict. As a result, political trust has grown steadily, enabling more constructive collaboration and joint decision-making for the sustainable use of our shared water resources.*

4.2.6. Diplomatic platforms have helped us avoid resorting to confrontation over water resources

Respondents were asked to indicate whether diplomatic platforms have helped us avoid resorting to confrontation over water resources. The responses are presented in Table 4.11.

Table 4.11. Diplomatic platforms have helped us avoid resorting to confrontation over water resources

	Frequency	Percent
Disagree	6	5.5
Not sure	2	1.8
Agree	43	39.4
Strongly Agree	58	53.2
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.11 indicates that most of the respondents (92.6%) generally agreed that diplomatic platforms have helped avoid resorting to confrontation over water resources. Specifically, 39.4% agreed and 53.2% strongly agreed with the statement. However, 5.5% of the respondents disagreed, while 1.8% were not sure. Despite the small percentage of disagreement and uncertainty, the study concludes that diplomatic platforms have played a significant role in preventing confrontations over water resources, as evidenced by the overwhelming agreement among the respondents. The findings indicate that diplomatic platforms have been highly effective in preventing confrontations over Nile water resources, with 92.6% of respondents expressing agreement. This supports existing literature emphasizing the role of institutionalized dialogue and negotiation forums, such as the Nile Basin Initiative, in mitigating conflicts and fostering cooperative water management (Yihdego & Rieu-Clarke, 2022). An interview with the key informant RESP.8 revealed that,

> *"These diplomatic platforms have helped us solve issues before they grow into major conflicts. They give everyone a voice."*

4.2.7. Participation in hydro-diplomatic engagements has built peace beyond just water issues

Respondents were asked to indicate whether participation in hydro-diplomatic engagements has built peace beyond just water issues. The responses are presented in Table 4.12.

Table 4.12. Participation in hydro-diplomatic engagements has built peace beyond just water issues

	Frequency	Percent
Disagree	9	8.3

	Not sure	3	2.8
	Agree	52	47.7
	Strongly Agree	45	41.3
	Total	**109**	**100**

Source: Primary Data (2025)

Table 4.12 indicates that most of the respondents generally agreed (89.0%) that participation in hydro-diplomatic engagements has built peace beyond just water issues. Specifically, 41.3% strongly agreed and 47.7% agreed with the statement. However, 8.3% of the respondents disagreed, while 2.8% were not sure. Despite the small percentage of disagreement and uncertainty, the study concludes that most respondents recognize that hydro-diplomatic efforts have contributed to building broader peace beyond water-related matters among Nile Basin states. The findings indicate that hydro-diplomatic engagements have contributed to building broader peace beyond water issues, with 89.0% of respondents agreeing. This aligns with literature suggesting that cooperative water management fosters trust, interdependence, and collaboration in other sectors, enhancing regional stability (Yihdego & Rieu-Clarke, 2022).

4.2.8. Riparian states use water diplomacy to advocate for their interests while respecting others' needs

Respondents were asked to indicate whether member states use water diplomacy to advocate for their interests while respecting others' needs. The responses are presented in Table 4.13.

Table 4.13. Riparian states use water diplomacy to advocate for their interests while respecting others' needs

		Frequency	Percent
	Disagree	6	5.5
	Not sure	3	2.8
	Agree	62	56.9
	Strongly Agree	38	34.9
	Total	**109**	**100**

Source: Primary Data (2025)

Table 4.13 indicates that most of the respondents (91.8%) generally agreed that Riparian states use water diplomacy to advocate for their interests while respecting others' needs. However, 5.5% of the respondents disagreed, while 2.8% were not sure. Despite the small percentage of disagreement and uncertainty, the study concludes that most respondents believe Riparian states

actively engage in water diplomacy in a manner that balances national interests with consideration for neighboring states. The findings reveal that 91.8% of respondents perceive Riparian states as using water diplomacy to balance national interests with respect for neighboring states' needs. This supports the view in the literature that hydro-diplomacy enables states to pursue their developmental and security objectives while fostering cooperative behavior and minimizing conflict potential (UNEP, 2021).

4.2.9. Joint declarations and communiqués from Nile meetings have reinforced regional security

Respondents were asked to indicate whether joint declarations and communiqués from Nile meetings have reinforced regional security. The responses are presented in Table 4.14.

Table 4.14. Joint declarations and communiqués from Nile meetings have reinforced regional security

		Frequency	Percent
	Strongly Disagree	11	10.1
	Disagree	12	11.0
	Not sure	20	18.3
	Agree	25	22.9
	Strongly Agree	41	37.6
	Total	**109**	**100**

Source: Primary Data (2025)

Table 4.14 indicates that most respondents (60.5%) generally agreed that joint declarations and communiqués from Nile meetings have reinforced regional security. Specifically, 22.9% agreed and 37.6% strongly agreed with the statement. However, 21.1% of the respondents disagreed (11.0% disagreed and 10.1% strongly disagreed), while 18.3% were not sure. Despite the notable levels of disagreement and uncertainty, the study concludes that more than half of the respondents acknowledge the positive role of joint declarations and communiqués in enhancing regional security through Nile-related diplomatic engagements. The findings show that 60.5% of respondents perceive joint declarations and communiqués from Nile meetings as reinforcing regional security, highlighting their role as tools of confidence-building among Riparian states.

This aligns with literature emphasizing that formal agreements, even if non-binding, serve as symbolic and practical instruments in hydro-diplomacy by promoting transparency, signaling commitment, and reducing the likelihood of conflict (Yihdego & Rieu-Clarke, 2022).

4.2.10. There is increased commitment to peaceful dispute resolution mechanisms among Nile Basin states

Respondents were asked to indicate whether there is increased commitment to peaceful dispute resolution mechanisms among Nile Basin states. The responses are presented in Table 4.15.

Table 4.15. There is increased commitment to peaceful dispute resolution mechanisms among Nile Basin states

	Frequency	Percent
Strongly Disagree	5	4.6
Disagree	1	0.9
Not sure	36	33.0
Agree	36	33.0
Strongly Agree	31	28.4
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.15 indicates that most respondents (61.4%) generally agreed that there is increased commitment to peaceful dispute resolution mechanisms among Nile Basin states. However, 5.5% of the respondents disagreed (0.9% disagreed and 4.6% strongly disagreed), while a considerable percentage (33.0%) were not sure. Despite the level of uncertainty, the findings suggest that most respondents acknowledge a growing commitment among Nile Basin states to resolve disputes through peaceful means. The findings indicate that 61.4% of respondents perceive an increased commitment to peaceful dispute resolution among Nile Basin states, reflecting a positive shift in hydro-diplomatic practices. This aligns with literature highlighting that institutional frameworks and negotiation platforms, such as the NBI and joint technical committees, enhance the capacity of riparian states to manage conflicts non-violently (Yihdego & Rieu-Clarke, 2022).

4.3 Effectiveness of the Nile Basin Initiative (NBI) in Water Management

Respondents were asked to indicate their options on the effectiveness of the Nile Basin Initiative (NBI) in Water Management. The responses are presented in Table 4.16-.4.24

4.3.1. The NBI has improved the way Riparian states share and accesses data about the Nile's water flows

Respondents were asked to indicate whether the NBI has improved the way Riparian states share and accesses data about the Nile's water flows. The responses are presented in Table 4.16.

Table 4.16. The NBI has improved the way Riparian states share and accesses data about the Nile's water flows

	Frequency	Percent
Strongly Disagree	1	0.9
Disagree	14	12.8
Not sure	14	12.8
Agree	23	21.1
Strongly Agree	57	52.3
Total	**109**	**100.0**

Source: Primary Data (2025)

Table 4.16 indicates that most respondents (73.4%) agreed that the Nile Basin Initiative (NBI) has improved the way riparian states share and access data about the Nile's water flows. Specifically, 21.1% agreed and 52.3% strongly agreed with the statement. However, 13.7% of the respondents disagreed (12.8% disagreed and 0.9% strongly disagreed), while 12.8% were not sure. Despite some disagreement and uncertainty, the study concludes that most respondents perceive the NBI as playing a significant role in enhancing data sharing and access among Nile Basin states. The findings show that 73.4% of respondents perceive the Nile Basin Initiative (NBI) as having significantly improved data sharing and access among riparian states. This underscores the role of the NBI in promoting transparency, joint monitoring, and evidence-based decision-making, which are key components of effective hydro-diplomacy (UNEP, 2021; Yihdego & Rieu-Clarke, 2022). An interview with the key informant RESP.2 revealed that,

"Through NBI platforms, we now share data openly, which was not the case before. This has improved transparency."

4.3.2. NBI programs have helped our technical staff build skills in water resource management

Respondents were asked to indicate whether NBI programs have helped our technical staff build skills in water resource management. The responses are presented in Table 4.17.

Table 4.17 NBI programs have helped our technical staff build skills in water resource management

		Frequency	Percent
	Strongly Disagree	1	0.9
	Disagree	10	9.2
	Not sure	9	8.3
	Agree	26	23.9
	Strongly Agree	63	57.8
	Total	**109**	**100.0**

Source: Primary Data (2025)

Table 4.17 indicates that most respondents (81.7%) agreed that NBI programs have helped their technical staff build skills in water resource management. Specifically, 23.9% agreed and 57.8% strongly agreed with the statement. However, 10.1% of the respondents disagreed (9.2% disagreed and 0.9% strongly disagreed), while 8.3% were not sure. Despite some disagreement and uncertainty, the study concludes that most respondents perceive NBI programs as effective in enhancing technical staff skills in water resource management. The findings indicate that 81.7% of respondents perceive NBI programs as effective in enhancing the skills of technical staff in water resource management. This highlights the NBI's role in capacity building, knowledge transfer, and professional development, which are critical for strengthening institutional competence and supporting cooperative hydro-diplomacy (Yihdego & Rieu-Clarke, 2022).

4.3.3. Riparian states have benefited from NBI-supported projects, such as irrigation, flood control, or hydropower planning

Respondents were asked to indicate whether Riparian states have benefited from NBI-supported projects, such as irrigation, flood control, or hydropower planning. The responses are presented in Table 4.18.

Table 4.18. Riparian states have benefited from NBI-supported projects, such as irrigation, flood control, or hydropower planning

		Frequency	Percent
	Strongly Disagree	2	1.8
	Disagree	17	15.6
	Not sure	15	13.8
	Agree	31	28.4
	Strongly Agree	44	40.4
	Total	**109**	**100.0**

Source: Primary Data (2025)

Table 4.18 indicates that most respondents (68.8%) agreed that riparian states have benefited from NBI-supported projects, such as irrigation, flood control, or hydropower planning. Specifically, 28.4% agreed and 40.4% strongly agreed with the statement. However, 17.4% of respondents disagreed (15.6% disagreed and 1.8% strongly disagreed), while 13.8% were not sure. Despite some disagreement and uncertainty, the study concludes that a majority perceive NBI-supported projects as beneficial to riparian states. The findings indicate that most respondents perceive NBI-supported projects, such as irrigation, flood control, and hydropower planning, as beneficial to riparian states, supporting the notion that regional water initiatives enhance shared resource management (World Bank, 2021). An interview with the key informant RESP.5 also revealed that,

> *"We have benefited from irrigation projects supported by the NBI, which have improved agricultural productivity."*

4.3.4. NBI discussions have enabled fair consideration of both upstream and downstream water needs

Respondents were asked to indicate whether NBI discussions have enabled fair consideration of both upstream and downstream water needs. The responses are presented in Table 4.19.

Table 4.19. NBI discussions have enabled fair consideration of both upstream and downstream water needs

	Frequency	Percent
Strongly Disagree	16	14.7
Disagree	21	19.3
Not sure	43	39.4
Agree	18	16.5
Strongly Agree	11	10.1
Total	109	100

Source: Primary Data (2025)

Table 4.19 indicates that a minority of respondents (26.6%) agreed that NBI discussions have enabled fair consideration of both upstream and downstream water needs, with 16.5% agreeing and 10.1% strongly agreeing. However, a larger percentage of respondents expressed disagreement, with 19.3% disagreeing and 14.7% strongly disagreeing, totaling 34.0%. A significant number of respondents (39.4%) were not sure. These results suggest that while some perceive fairness in water needs consideration through NBI discussions, there is considerable uncertainty and skepticism among respondents regarding this issue. The findings suggest that perceptions of fairness in balancing upstream and downstream water needs through NBI discussions are mixed, with significant uncertainty and skepticism among respondents. This aligns with existing literature highlighting challenges in achieving equitable water allocation in the Nile Basin due to historical power asymmetries and differing national interests (Arab Center Washington DC, 2023; World Bank, 2020). An interview with the key informant RESP.4 also revealed that,

> *" The Nile Basin Initiative (NBI) makes deliberate efforts to promote cooperation and equitable use of water resources among member states. However, the reality on the ground reveals that the needs of upstream and downstream countries are not always treated equally in practice. Upstream countries often feel constrained by historical agreements favoring downstream nations, while downstream countries remain highly protective of their existing water rights. As a result, tensions persist, and true equity in resource allocation remains a significant challenge for the NBI.*

4.3.5. The NBI helps ensure that all member countries participate in decision-making processes

Respondents were asked to indicate whether The NBI helps ensure that all member countries participate in decision-making processes. The responses are presented in Table 4.20.

Table 4.20. The NBI helps ensure that all member countries participate in decision-making processes

	Frequency	Percent
Strongly Disagree	14	12.8
Disagree	6	5.5
Not sure	4	3.7
Agree	45	41.3
Strongly Agree	40	36.7
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.20 indicates that most respondents (78.0%) agreed that the NBI helps ensure that all member countries participate in decision-making processes, with 41.3% agreeing and 36.7% strongly agreeing. Meanwhile, 18.3% of respondents expressed disagreement, with 12.8% strongly disagreeing and 5.5% disagreeing. A small percentage (3.7%) were not sure. These results suggest that most respondents perceive the NBI as an inclusive platform that facilitates participation of all member countries in decision-making. The findings suggest that the NBI is largely perceived as an inclusive platform that promotes the participation of all member states in decision-making processes. This is consistent with literature emphasizing the role of river basin organizations in fostering cooperative governance and participatory approaches among riparian countries (United Nations Environment Programme, 2021).

4.3.6. I find the NBI's approach inclusive and responsive to local and national water challenges

Respondents were asked to indicate whether they find NBI's approach inclusive and responsive to local and national water challenges. The responses are presented in Table 4.21.

Table 4.21. I find the NBI's approach inclusive and responsive to local and national water challenges

		Frequency	Percent
	Strongly Disagree	16	14.7
	Disagree	5	4.6
	Not sure	3	2.7
	Agree	36	33.0
	Strongly Agree	49	45.0
	Total	**109**	**100**

Source: Primary Data (2025)

Table 4.21 indicates that most respondents (78.0%) find the NBI's approach inclusive and responsive to local and national water challenges. Specifically, 33.0% agreed and 45.0% strongly agreed with the statement. Conversely, 19.3% of respondents expressed disagreement, with 14.7% strongly disagreeing and 4.6% disagreeing. A small percentage (2.7%) were not sure. These results suggest that most respondents view the NBI's approach positively, recognizing its responsiveness to water-related challenges at both local and national levels. The findings indicate that most respondents perceive the NBI's approach as inclusive and responsive to both local and national water challenges. This aligns with literature highlighting the importance of adaptive and participatory management in transboundary water governance, where responsiveness to diverse stakeholder needs strengthens cooperation and trust among riparian states (Yihdego & Rieu-Clarke, 2022). An interview with the key informant RESP.1 also revealed that,

> *" The NBI listens to the concerns of each country and strives to address both local and national water challenges in a fair and balanced manner. It provides a platform where member states can raise their issues and seek collective solutions through dialogue and cooperation. However, balancing the diverse interests of upstream and downstream countries remains complex, as water needs and priorities often differ significantly. Despite these challenges, the NBI continues to promote mutual understanding and equitable management of the Nile's shared resources"*

4.3.7. Through the NBI, we have been able to collaborate with technical teams from other riparian countries

Respondents were asked to indicate whether through the NBI, we have been able to collaborate with technical teams from other riparian countries. The responses are presented in Table 4.22.

Table 4.22. Through the NBI, we have been able to collaborate with technical teams from other riparian countries

	Frequency	Percent
Disagree	1	0.9
Not sure	13	11.9
Agree	26	23.9
Strongly Agree	69	63.3
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.22 indicates that the majority of respondents (87.2%) agree that through the NBI, they have been able to collaborate with technical teams from other riparian countries. Specifically, 23.9% agreed and 63.3% strongly agreed with the statement. Only a small percentage (0.9%) disagreed, while 11.9% were not sure. These results suggest strong positive perceptions of cross-country technical collaboration facilitated by the NBI among respondents. The findings suggest that respondents perceive strong positive outcomes from cross-country technical collaboration facilitated by the NBI. This supports existing literature emphasizing that technical cooperation among riparian states enhances shared understanding, builds trust, and improves joint management of transboundary water resources (United Nations Environment Programme, 2021; CIWA, 2022).

4.3.8. The NBI plays a critical role in avoiding duplication of efforts and encouraging coordinated development

Respondents were asked to indicate whether The NBI plays a critical role in avoiding duplication of efforts and encouraging coordinated development. The responses are presented in Table 4.23.

Table 4.23. The NBI plays a critical role in avoiding duplication of efforts and encouraging coordinated development

	Frequency	Percent
Disagree	1	0.9
Agree	64	58.7
Strongly Agree	44	40.4
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.23 indicates that an overwhelming majority of respondents (99.1%) agree that the NBI plays a critical role in avoiding duplication of efforts and encouraging coordinated development. Specifically, 58.7% agreed and 40.4% strongly agreed with the statement. Only a very small percentage (0.9%) disagreed. These results suggest that respondents largely perceive the NBI as an effective facilitator of coordinated water resource management and development among riparian states. The findings indicate that respondents perceive the NBI as a key facilitator of coordinated water resource management, effectively preventing duplication of efforts among riparian states. This aligns with literature highlighting the NBI's role in promoting integrated basin-wide planning, harmonizing projects, and ensuring that development initiatives are mutually reinforcing rather than redundant (United Nations Environment Programme, 2021). An interview with the key informant RESP.11 also revealed that,

> *" The NBI has helped member countries avoid duplicating similar projects, ensuring more efficient use of time and resources. Through coordinated planning and information sharing, countries are better informed about ongoing and planned initiatives within the basin. This cooperation reduces unnecessary competition and fosters a more integrated approach to water resource management. As a result, efforts are aligned toward shared goals, maximizing the benefits for all Nile Basin states."*

4.3.9. I trust the NBI to balance the technical, social, and environmental aspects of water management fairly

Respondents were asked to indicate whether I trust the NBI to balance the technical, social, and environmental aspects of water management fairly. The responses are presented in Table 4.24.

Table 4.24. I trust the NBI to balance the technical, social, and environmental aspects of water management fairly

	Frequency	Percent
Strongly Disagree	1	0.9
Not Sure	73	67.0
Agree	35	32.1
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.24 indicates that while most respondents (67.0%) are uncertain about trusting the NBI to balance the technical, social, and environmental aspects of water management fairly, a significant percentage (32.1%) agree with the statement. Only a very small percentage (0.9%) strongly disagreed. These results suggest mixed perceptions, with many respondents' expressing uncertainty regarding the NBI's ability to fairly manage the diverse aspects of water resources, highlighting potential areas for increased transparency or communication. The findings reveal mixed perceptions regarding the NBI's ability to fairly balance technical, social, and environmental aspects of water management. While some respondents express confidence, the high level of uncertainty suggests concerns about transparency, accountability, or equitable consideration of diverse interests. This aligns with existing literature, which notes that although the NBI has made strides in integrated water management, challenges remain in ensuring that all riparian interests are adequately addressed, particularly in balancing developmental and environmental priorities (United Nations Environment Programme, 2021).

4.4 Effect of Political Dynamics and Power Irregularities

Respondents were asked to indicate their opinions on the effect of Political Dynamics and Power Irregularities. The responses are presented in Table 4.25-.4.33.

4.4.1. Political power differences between countries affect how decisions are made about Nile water use

Respondents were asked to indicate whether Political power differences between countries affect how decisions are made about Nile water use. The responses are presented in Table 4.25.

Table 2.25. Political power differences between countries affect how decisions are made about Nile water use

	Frequency	Percent
Not sure	1	0.9
Agree	57	52.3
Strongly Agree	51	46.8
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.25 indicates that all respondents (99.1%) agree that political power differences between countries affect how decisions are made about Nile water use. Specifically, 52.3% agreed, and 46.8% strongly agreed with the statement. Only a small percentage (0.9%) were not sure. These results suggest a strong consensus among respondents that political power dynamics play a significant role in decision-making processes concerning the Nile's water resources. The findings indicate a strong consensus that political power differences among Nile Basin countries significantly influence decision-making on water use. Respondents overwhelmingly recognize that upstream and downstream power asymmetries shape negotiations, resource allocation, and cooperation dynamics. This aligns with existing literature, which emphasizes that historical treaties, hegemonic influence, and shifting regional power balances critically affect hydro-diplomacy and transboundary water governance in the Nile Basin (World Bank, 2020).

4.4.2. Some countries dominate the Nile discussions due to their economic or geopolitical influence

Respondents were asked to indicate whether some countries dominate the Nile discussions due to their economic or geopolitical influence. The responses are presented in Table 4.26.

Table 4.26. Some countries dominate the Nile discussions due to their economic or geopolitical influence

	Frequency	Percent
Disagree	2	1.8

	Not sure	1	0.9
	Agree	68	62.4
	Strongly Agree	38	34.8
	Total	**109**	**100**

Source: Primary Data (2025)

Table 4.26 indicates that the majority of respondents (97.2%) agree that some countries dominate the Nile discussions due to their economic or geopolitical influence. Specifically, 62.4% agreed, and 34.8% strongly agreed with the statement. A small percentage of respondents disagreed (1.8%) or were not sure (0.9%). These results suggest a widespread perception among respondents that economic and geopolitical power significantly affects dominance in Nile water negotiations. The findings reveal that respondents widely perceive economic and geopolitical power as key factors enabling certain countries to dominate Nile water negotiations. This suggests that influence in hydro-diplomatic discussions is not evenly distributed, reflecting the unequal leverage among riparian states. Existing literature corroborates this, highlighting that power asymmetries, rooted in economic capacity and geopolitical clout, shape negotiation dynamics and can affect equitable water allocation in the Nile Basin (Yihdego & Rieu-Clarke, 2022).

4.4.3. Political interests often block the implementation of resolutions made under cooperative frameworks

Respondents were asked to indicate whether political interests often block the implementation of resolutions made under cooperative frameworks. The responses are presented in Table 4.27.

Table 4.27. Political interests often block the implementation of resolutions made under cooperative frameworks

	Frequency	Percent
Strongly Disagree	10	19.3

	Disagree	5	21.1
	Not sure	36	33.0
	Agree	31	12.8
	Strongly Agree	27	13.8
	Total	109	100

Source: Primary Data (2025)

Table 4.27 indicates that a significant percentage of respondents (53.2%) agreed that political interests often block the implementation of resolutions made under cooperative frameworks, with 28.4% agreeing and 24.8% strongly agreeing. Meanwhile, 13.8% disagreed (9.2% strongly disagreed and 4.6% disagreed), and 33.0% were not sure. These results suggest that political interests are perceived as a substantial barrier to implementing cooperative agreements, though there is also considerable uncertainty among respondents. The findings suggest that political interests are perceived as a major barrier to the implementation of cooperative frameworks in the Nile Basin. Respondents indicate that even when resolutions are reached, national political agendas can obstruct or delay their execution. This observation is consistent with existing literature, which highlights that competing national priorities, sovereignty concerns, and political power dynamics often impede the operationalization of hydro-diplomatic agreements and transboundary water cooperation (World Bank, 2020).

4.4.4. Riparian states have faced challenges from unilateral projects developed by stronger upstream or downstream neighbors

Respondents were asked to indicate whether Riparian states have faced challenges from unilateral projects developed by stronger upstream or downstream neighbors. The responses are presented in Table 4.28.

Table 4.28. Riparian states have faced challenges from unilateral projects developed by stronger upstream or downstream neighbors

	Frequency	Percent
Strongly Disagree	26	23.9

	Disagree	34	31.2
	Not sure	24	22.0
	Agree	9	8.3
	Strongly Agree	16	14.7
	Total	**109**	**100**

Source: Primary Data (2025)

Table 4.28 indicates that most respondents (55.1%) disagreed that riparian states have faced challenges from unilateral projects developed by stronger upstream or downstream neighbors, with 23.9% strongly disagreeing and 31.2% disagreeing. A significant percentage of respondents (22.0%) were unsure, while 23.0% agreed with the statement. These results suggest mixed perceptions about the effect of unilateral projects, with many respondents skeptical about the extent of such challenges but a significant minority acknowledging their existence.

4.4.5. Political shifts in some countries disrupt ongoing water cooperation processes

Respondents were asked to indicate whether Political shifts in some countries disrupt ongoing water cooperation processes. The responses are presented in Table 4.29.

Table 4.29. Political shifts in some countries disrupt ongoing water cooperation processes

		Frequency	**Percent**
	Disagree	17	15.6
	Not sure	4	3.7
	Agree	35	32.1
	Strongly Agree	53	48.6
	Total	**109**	**100**

Source: Primary Data (2025)

Table 4.29 indicates that a significant majority of respondents (80.7%) agreed that political shifts in some countries disrupt ongoing water cooperation processes, with 32.1% agreeing and 48.6% strongly agreeing. Meanwhile, 15.6% disagreed, and 3.7% were not sure. These results highlight that most respondents perceive political changes as a major factor affecting the continuity and effectiveness of water cooperation among riparian states.

4.4.6. Some powerful countries use their influence to push for water projects without full regional consensus

Respondents were asked to indicate whether some powerful countries use their influence to push for water projects without full regional consensus. The responses are presented in Table 4.30.

Table 4.30. Some powerful countries use their influence to push for water projects without full regional consensus

	Frequency	Percent
Strongly Disagree	13	11.9
Disagree	10	9.2
Not sure	20	18.3
Agree	24	22.0
Strongly Agree	42	38.5
Total	**109**	**100.0**

Source: Primary Data (2025)

Table 4.30 shows that a majority of respondents (60.5%) agreed that some powerful countries use their influence to push for water projects without full regional consensus, with 22.0% agreeing and 38.5% strongly agreeing. However, 21.1% disagreed and 18.3% were not sure. These findings suggest that many respondents perceive that the influence of powerful states can sometimes override collective decision-making in regional water projects, which may effect cooperation and trust among riparian countries.

4.4.7. Domestic politics in Riparian states sometimes interfere with consistent Nile Basin engagement

Respondents were asked to indicate whether Domestic politics in Riparian states sometimes interfere with consistent Nile Basin engagement. The responses are presented in Table 4.31.

Table 4.31. Domestic politics in Riparian states sometimes interfere with consistent Nile Basin engagement

	Frequency	Percent
Strongly Disagree	43	39.4

	Disagree	33	30.3
	Not sure	21	19.3
	Agree	2	1.8
	Strongly Agree	10	9.2
	Total	**109**	**100.0**

Source: Primary Data (2025)

Table 4.31 indicates that most respondents (69.7%) generally disagreed that domestic politics in riparian states interfere with consistent Nile Basin engagement, with 39.4% strongly disagreeing and 30.3% disagreeing. A smaller percentage of respondents (11.0%) agreed with the statement, while 19.3% were unsure. These results suggest that the majority feel domestic politics do not significantly disrupt Nile Basin cooperation, though some uncertainty and disagreement remain.

4.4.8. Without a binding legal framework, it is hard to ensure that all states comply with joint decisions

Respondents were asked to indicate whether without a binding legal framework, it is hard to ensure that all states comply with joint decisions. The responses are presented in Table 4.32.

Table 4.32. Without a binding legal framework, it is hard to ensure that all states comply with joint decisions

		Frequency	Percent
	Strongly Disagree	10	9.2
	Disagree	14	12.8
	Not sure	11	10.1
	Agree	36	33.0
	Strongly Agree	38	34.9
	Total	**109**	**100.0**

Source: Primary Data (2025)

Table 4.32 indicates that a majority of respondents (67.9%) agree that without a binding legal framework, it is difficult to ensure that all states comply with joint decisions. Specifically, 33.0% agreed and 34.9% strongly agreed with the statement. Meanwhile, 22.0% of respondents disagreed, and 10.1% were not sure. These findings suggest that many respondents perceive the

absence of a binding legal framework as a significant barrier to compliance and cooperation among Nile Basin states.

4.4.9. Power struggles and mistrust among some riparian countries delay the full success of cooperation frameworks

Respondents were asked to indicate whether Power struggles and mistrust among some riparian countries delay the full success of cooperation frameworks. The responses are presented in Table 4.33.

Table 4.33. Power struggles and mistrust among some riparian countries delay the full success of cooperation frameworks

	Frequency	Percent
Strongly Disagree	17	15.6
Disagree	13	11.9
Not sure	5	4.6
Agree	33	30.3
Strongly Agree	41	37.6
Total	**109**	**100.0**

Source: Primary Data (2025)

Table 4.33 indicates that the majority of respondents (67.9%) agree that power struggles and mistrust among some riparian countries delay the full success of cooperation frameworks. Specifically, 30.3% agreed and 37.6% strongly agreed with the statement. However, 27.5% of respondents disagreed, and 4.6% were not sure. These results suggest that issues of power dynamics and mistrust are viewed as significant obstacles to effective cooperation among Nile Basin countries.

4.5 Transboundary Water Cooperation in the Nile Basin Region

Respondents were asked to indicate their options regarding Transboundary Water Cooperation in the Nile Basin Region. The responses are presented in Table 4.34-.4.41.

4.5.1. The Nile Basin countries have effective mechanisms to resolve water-related conflicts peacefully.

Respondents were asked to indicate whether the Nile Basin countries have effective mechanisms to resolve water-related conflicts peacefully. The responses are presented in Table 4.34.

Table 4.34. The Nile Basin countries have effective mechanisms to resolve water-related conflicts peacefully.

	Frequency	Percent
Strongly Disagree	6	5.5
Disagree	15	13.8
Not sure	10	9.2
Agree	56	51.4
Strongly Agree	22	20.2
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.34 indicates that the majority of respondents (71.6%) believe that the Nile Basin countries have effective mechanisms to resolve water-related conflicts peacefully. Specifically, 51.4% agreed and 20.2% strongly agreed with the statement. However, 19.3% of respondents disagreed, and 9.2% were not sure. Despite some uncertainty and disagreement, the findings suggest general confidence in the existing conflict resolution mechanisms among the Nile Basin states. The findings suggest that most respondents perceive the Nile Basin countries as having effective mechanisms for peacefully resolving water-related conflicts. This indicates a general confidence in institutional frameworks and diplomatic channels for managing disputes. Existing literature supports this view, emphasizing that platforms such as the Nile Basin Initiative and multi-level negotiations have strengthened conflict resolution capacities and promoted cooperative water governance among riparian states (World Bank, 2021).

4.5.2. Cooperation among Nile Basin countries has improved the sustainable management of Nile waters.

Respondents were asked to indicate whether Cooperation among Nile Basin countries has improved the sustainable management of Nile waters. The responses are presented in Table 4.35.

Table 4.35. Cooperation among Nile Basin countries has improved the sustainable management of Nile waters.

	Frequency	Percent
Strongly Disagree	15	13.8
Disagree	12	11.0
Not sure	25	22.9
Agree	21	19.3
Strongly Agree	35	32.1
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.35 indicates that most respondents (51.4%) agreed that cooperation among Nile Basin countries has improved the sustainable management of Nile waters, with 19.3% agreeing and 32.1% strongly agreeing. However, 24.8% of respondents disagreed, while 22.9% were not sure. These results suggest that while many respondents perceive cooperation as beneficial for sustainable water management, a significant percentage remains uncertain or skeptical about the extent of improvement.

4.5.3. Joint projects on water infrastructure (dams, irrigation, hydropower) benefit all Nile Basin countries equally

Respondents were asked to indicate whether Joint projects on water infrastructure (dams, irrigation, hydropower) benefit all Nile Basin countries equally. The responses are presented in Table 4.36.

Table 4.36. Joint projects on water infrastructure (dams, irrigation, hydropower) benefit all Nile Basin countries equally

	Frequency	Percent
Disagree	33	30.3
Not sure	56	51.4
Agree	10	9.2
Strongly Agree	10	9.2
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.36 indicates that most respondents (81.7%) are either unsure (51.4%) or disagree (30.3%) that joint projects on water infrastructure benefit all Nile Basin countries equally. Only a small minority (18.4%) agree or strongly agree with the statement. This suggests considerable uncertainty and skepticism among respondents regarding the equitable distribution of benefits from shared water infrastructure projects in the Nile Basin.

4.5.4. Information and data sharing among Nile Basin countries regarding water usage is timely and transparent.

Respondents were asked to indicate whether information and data sharing among Nile Basin countries regarding water usage is timely and transparent. The responses are presented in Table 4.37.

Table 4.37. Information and data sharing among Nile Basin countries regarding water usage is timely and transparent.

	Frequency	Percent
Strongly Disagree	9	8.3
Disagree	11	10.1
Not sure	20	18.3
Agree	57	52.3
Strongly Agree	12	11.0
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.37 indicates that a majority of respondents (63.3%) agree that information and data sharing among Nile Basin countries regarding water usage is timely and transparent, with 52.3% agreeing and 11.0% strongly agreeing. However, about 18.4% of respondents disagreed, while 18.3% were unsure. These findings suggest generally positive perceptions of transparency and timeliness in data sharing, though some uncertainty and disagreement remain among a significant minority.

4.5.5. International agreements on Nile water use are respected and followed by all riparian states.

Respondents were asked to indicate whether international agreements on Nile water use are respected and followed by all riparian states. The responses are presented in Table 4.38.

Table 4.38. International agreements on Nile water use are respected and followed by all riparian states.

	Frequency	Percent
Strongly Disagree	12	11.0
Disagree	9	8.3
Not sure	18	16.5
Agree	34	31.2
Strongly Agree	35	32.1
Total	109	100

Source: Primary Data (2025)

Table 4.38 shows that most respondents (63.3%) agree that international agreements on Nile water use are respected and followed by all riparian states, with 31.2% agreeing and 32.1% strongly agreeing. However, 19.3% of respondents disagreed, and 16.5% were unsure. These results indicate a generally positive perception of adherence to international agreements, though a significant percentage of respondents remain uncertain or skeptical about full compliance.

4.5.6. There is mutual trust among Nile Basin countries in managing Nile's water resources.

Respondents were asked to indicate whether There is mutual trust among Nile Basin countries in managing Nile's water resources. The responses are presented in Table 4.39.

Table 4.39. Some countries dominate the Nile discussions due to their economic or geopolitical influence

	Frequency	Percent
Disagree	2	1.8
Not sure	1	0.9
Agree	68	62.4
Strongly Agree	38	34.8
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.39 reveals that a substantial majority of respondents (97.2%) agree that some countries dominate the Nile discussions due to their economic or geopolitical influence, with 62.4% agreeing and 34.8% strongly agreeing. Only a very small fraction (2.7%) either disagreed or were unsure. These findings suggest a widespread perception that economic and geopolitical power heavily influences decision-making processes in Nile water discussions among riparian states.

4.5.7. Local communities along the Nile benefit from transboundary water cooperation initiatives.

Respondents were asked to indicate whether local communities along the Nile benefit from transboundary water cooperation initiatives. The responses are presented in Table 4.40.

Table 4.40. Local communities along the Nile benefit from transboundary water cooperation initiatives.

	Frequency	Percent
Strongly Disagree	33	30.3
Disagree	2	1.8
Not sure	43	39.4
Agree	21	19.3
Strongly Agree	10	9.2
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.40 shows that a considerable percentage of respondents (32.1%) disagreed that local communities along the Nile benefit from transboundary water cooperation initiatives, with 30.3% strongly disagreeing and 1.8% disagreeing. Meanwhile, 39.4% were not sure about the benefits, and only 28.5% agreed, with 19.3% agreeing and 9.2% strongly agreed. These results suggest mixed perceptions about the extent to which local communities' benefit from such initiatives, with many respondents either uncertain or skeptical about the direct advantages to these communities.

4.5.8. Environmental conservation efforts in the Nile Basin are strengthened through regional cooperation.

Respondents were asked to indicate whether environmental conservation efforts in the Nile Basin are strengthened through regional cooperation. The responses are presented in Table 4.41.

Table 4.41. Environmental conservation efforts in the Nile Basin are strengthened through regional cooperation.

	Frequency	Percent
Strongly Disagree	26	23.9
Disagree	24	22.0
Not sure	28	25.7
Agree	20	18.3
Strongly Agree	11	10.1
Total	**109**	**100**

Source: Primary Data (2025)

Table 4.41 reveals that nearly half of the respondents (45.9%) disagreed that environmental conservation efforts in the Nile Basin are strengthened through regional cooperation, with 23.9% strongly disagreeing and 22.0% disagreeing. A quarter of respondents (25.7%) were unsure, while only 28.4% agreed with the statement, including 18.3% who agreed and 10.1% who strongly agreed. These findings suggest considerable skepticism or uncertainty among respondents about the effectiveness of regional cooperation in enhancing environmental conservation within the Nile Basin

4.6 Regression analysis

A regression analysis was performed to test the relationship between hydro diplomacy and trans boundary water cooperation in the Nile basin region. The results are presented in table 4.42 and 4.43

Table 4.42. ANOVA results

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13.644	1	13.644	10.237	.002[b]
	Residual	173.265	108	1.333		
	Total	186.909	109			

a. Dependent Variable: Trans boundary water cooperation in the Nile basin region

b. Predictors: (Constant), Hydro diplomacy

The ANOVA results in Table 4.42 reveal that there is a weak positive relationship between hydro diplomacy and transboundary water cooperation and the role of the Nile Basin Initiative (NBI) ($F = 10.237$, $P < .002$). This implies that strengthening NBI's hydro diplomacy and cooperative frameworks is likely to enhance peaceful and effective transboundary water management among the Nile Basin countries.

Table 4.43: Coefficients Test Result

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.971	.310		6.356	.000
	Hydro diplomacy	.265	.083	.270	3.200	.002

a. Dependent Variable: trans boundary water cooperation in the Nile basin region

Table 4.13 indicates that there is a weak positive relationship between the Nile Basin Initiative's role and hydro diplomacy and transboundary water cooperation within the Nile Basin region, as shown by the beta value = .270, t = 3.200, P < .002. This suggests that enhanced NBI efforts in diplomacy, trust-building, and cooperation can contribute positively to reducing tensions and improving cooperation among the riparian states of the Nile Basin.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter describes the summary, conclusion and recommendation on hydro diplomacy and trans boundary water cooperation in the Nile basin region. A case study of Nile basin initiative (NBI).

5.1 Summary of the Findings

5.1.1 Hydro-Diplomacy and Promoting Peace and Security

The findings reveal that hydro-diplomacy has been instrumental in promoting peace and security among Nile Basin states. Most respondents agreed that diplomatic dialogue around Nile waters has reduced historical tensions, strengthened peaceful relations between upstream and downstream neighbors, and is valued as a tool for preventing water-related conflicts. Cross-border meetings have enhanced mutual understanding, while consistent negotiations have improved political trust among neighboring countries. Diplomatic platforms have helped avoid confrontations, and hydro-diplomatic engagements have contributed to peace beyond water issues. Additionally, respondents acknowledged that water diplomacy enables states to advocate for their interests while respecting others' needs. However, there was some uncertainty regarding the effectiveness of joint declarations and the level of commitment to peaceful dispute resolution mechanisms, suggesting areas where further efforts are needed.

5.1.2 The Effectiveness of the Nile Basin Initiative (NBI) in Water Management

The findings indicate that respondents generally view the Nile Basin Initiative (NBI) as effective in enhancing water management among Riparian states. Many respondents agreed that the NBI has improved the way states share and access data on Nile water flows, supported the development of technical staff skills in water resource management, and facilitated beneficial projects in areas such as irrigation, flood control, and hydropower planning. Respondents also recognized the NBI’s efforts in promoting participation from all member countries in decision-making processes and acknowledged its inclusive and responsive approach to addressing both local and national water challenges. Furthermore, there was strong agreement that the NBI fostered collaboration among technical teams across Riparian states and played a key role in

avoiding duplication of efforts while encouraging coordinated development. However, mixed opinions were noted regarding whether NBI discussions fairly consider both upstream and downstream water needs, with considerable uncertainty expressed. While many agreed that the NBI facilitates collaboration and coordination, there was significant doubt about its ability to fairly balance technical, social, and environmental aspects of water management, suggesting a need for improved transparency and trust-building measures within the initiative.

5.1.3 The Effect of Political Dynamics and Power Irregularities

The findings reveal that political dynamics and power irregularities significantly affect cooperation over Nile water resources among riparian states. Most respondents agreed that political power differences influence decision-making and that some countries dominate discussions due to their economic or geopolitical strength. There was consensus that political interests often block the implementation of resolutions and that political shifts disrupt ongoing cooperation efforts. Additionally, many respondents acknowledged that powerful countries sometimes push projects without full regional consensus and that the absence of a binding legal framework makes it difficult to ensure compliance with joint decisions. However, there were mixed views on the extent to which unilateral projects and domestic politics interfere with cooperation. Overall, the findings highlight that power imbalances, mistrust, and political interference remain key obstacles to achieving effective and sustainable cooperation on Nile water management.

5.2 Conclusions

5.2.1 Hydro-Diplomacy and Promoting Peace and Security

The study concludes that hydro-diplomacy has been instrumental in promoting peace and security among Nile Basin states. The findings reveal that diplomatic dialogue has successfully reduced historical tensions, strengthened peaceful relations between upstream and downstream neighbors, and is valued as a key tool for preventing water-related conflicts. The study further concludes that cross-border meetings and consistent negotiations have improved mutual understanding and political trust, while diplomatic platforms have helped to avoid confrontations. Additionally, hydro-diplomatic engagements have fostered broader peace beyond just water issues, and water diplomacy has enabled states to pursue their interests while

respecting those of others. However, the study concludes that there remains uncertainty about the effectiveness of joint declarations and the level of commitment to peaceful dispute resolution, indicating areas where further diplomatic efforts are necessary.

5.2.2 The Effectiveness of the Nile Basin Initiative (NBI) in Water Management

The study concludes that the Nile Basin Initiative (NBI) is generally effective in enhancing water management among Riparian states. The findings show that the NBI has improved the sharing and access to data on Nile water flows, enhanced technical skills among staff in water management, and supported projects in irrigation, flood control, and hydropower. The study further concludes that the NBI promotes inclusive participation in decision-making and addresses both local and national water challenges in a responsive manner. Moreover, the NBI has facilitated collaboration among technical teams and played a vital role in avoiding duplication of efforts while encouraging coordinated development. However, the study concludes that there are mixed perceptions regarding the fairness of upstream and downstream considerations, and there remains doubt about the NBI's ability to balance technical, social, and environmental concerns, signaling a need for increased transparency and trust-building.

5.2.3 The Effect of Political Dynamics and Power Irregularities

The study concludes that political dynamics and power irregularities significantly effect cooperation over Nile water resources among Riparian states. The findings demonstrate that political power differences heavily influence decision-making, and some countries dominate discussions due to their economic or geopolitical leverage. The study further concludes that political interests frequently obstruct the implementation of cooperative resolutions and that political shifts disrupt ongoing water cooperation processes. Additionally, it concludes that powerful countries often advance water projects without full regional consensus and that the lack of a binding legal framework undermines compliance with joint decisions. However, the study concludes that there are mixed views on how unilateral projects and domestic politics affect cooperation. Overall, the study concludes that power struggles, mistrust, and political interference remain critical barriers to achieving effective and sustainable cooperation in Nile water management.

5.3 Recommendations of the study

5.3.1 Hydro-Diplomacy and Promoting Peace and Security

The study recommends that Riparian states strengthen diplomatic dialogue and cross-border meetings to further reduce tensions and build mutual trust in the management of Nile water resources.

The study recommends that member states enhance the implementation and follow-up of joint declarations and communiqués to ensure they translate into concrete actions for peace and cooperation.

The study recommends that Nile Basin states prioritize awareness and capacity-building programs on hydro-diplomacy to reinforce peaceful dispute resolution and promote respect for shared water resources.

5.3.2 The Effectiveness of the Nile Basin Initiative (NBI) in Water Management

The study recommends that the NBI enhance transparency and communication about its processes and outcomes to build trust among member states, especially regarding fair consideration of upstream and downstream needs.

The study recommends that the NBI strengthen its monitoring and evaluation mechanisms to ensure that projects deliver tangible benefits to all member countries, and progress is clearly tracked and reported.

The study recommends that the NBI intensify capacity-building initiatives and promote inclusivity in decision-making processes to ensure all member states are equally empowered and involved in water management discussions.

5.3.3 The Effect of Political Dynamics and Power Irregularities

The study recommends that Riparian states work towards establishing a legally binding framework to ensure commitment and compliance with jointly agreed decisions on Nile water management.

The study recommends that the Nile Basin states enhance diplomatic and political cooperation mechanisms to mitigate the negative effect of power imbalances and prevent dominant countries from imposing unilateral decisions.

The study recommends that member states depoliticize technical water management processes by empowering neutral and professional bodies to oversee implementation, thus minimizing the effects of domestic politics and power struggles on cooperation.

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APPENDICIES

Appendix i: Questionnaire Guide

Dear respondent,

I am Daniel Mutua Martin a student of Nkumba University pursuing a Master of Arts in Diplomacy and Global Studies. I am conducting a research about the *"hydro diplomacy and trans boundary water cooperation in the Nile basin region. A case study of Nile basin initiative (NBI)*. The research is for academic purposes and will not be used elsewhere other than for the purpose of partial fulfillment for the award of a Degree of Business Administration. You have been scientifically sampled to participate in this study. The information obtained from you will be kept confidential and will be used strictly for academic purposes only.

Please do not provide any form of identity on this questionnaire.

Thank You.

Instructions: (Please tick or fill in the blank space where appropriate)

SECTION A: Biographical Information

Gender

Male ☐ Female ☐

Age group?

Under 25 years ☐ 25 – 35 years ☐ 36 – 45 years ☐ 46 and above ☐

Highest level of Education?

Secondary ☐ Certificate ☐ Diploma ☐ Degree ☐ Post graduate ☐

Others specify……..

Working Experience

Less than 1 yr ☐ 1 – 3 yrs ☐ 4 – 6yrs ☐ 7 yrs and above ☐

Professional background

Water Resource Management ☐
Hydrologists ☐
Electrical and Power engineers ☐
Water Resource Modeling ☐
Dam Safety and Operations ☐
GIS and Information Systems specialists
International Water Law ☐
Finance and Administration ☐
Communication / stakeholder engagement ☐

For the questions in the following sections below, tick the number that best indicate your opinion on the question using the following likert scale.

SCALE	5	4	3	2	1
	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

SECTION B: HYDRO-DIPLOMACY AND PROMOTING PEACE AND SECURITY

	Statement	1	2	3	4	5
1	Diplomatic dialogue around Nile waters has helped reduce historical tensions between my country and other riparian states.					
2	I believe water diplomacy has helped build peaceful relations with our upstream or downstream neighbors.					
3	My country values hydro-diplomacy as a tool to avoid water-related conflicts.					
4	Cross-border meetings on Nile water use have strengthened mutual understanding.					
5	We have seen improved political trust with neighboring countries due to consistent water negotiations.					
6	Diplomatic platforms have helped us avoid resorting to confrontation over water resources.					
7	Participation in hydro-diplomatic engagements has built peace beyond just water issues.					
8	My country uses water diplomacy to advocate for their interests while respecting others' needs.					
9	Joint declarations and communiqués from Nile meetings have reinforced regional security.					
10	There is increased commitment to peaceful dispute resolution mechanisms among Nile Basin states.					

SECTION C: EFFECTIVENESS OF THE NILE BASIN INITIATIVE (NBI) IN WATER MANAGEMENT

	Statement	1	2	3	4	5
1	The NBI has improved the way my country shares and accesses data about the Nile's water flows.					
2	NBI programs have helped our technical staff build skills in water resource management.					
3	My country has benefited from NBI-supported projects, such as irrigation, flood control, or hydropower planning.					
4	NBI discussions have enabled fair consideration of both upstream and downstream water needs.					
5	The NBI helps ensure that all member countries participate in decision-making processes.					
6	I find the NBI's approach inclusive and responsive to local and national water challenges.					
7	Through the NBI, we have been able to collaborate with technical teams from other riparian countries.					
8	The NBI plays a critical role in avoiding duplication of efforts and encouraging coordinated development.					
9	I trust the NBI to balance the technical, social, and environmental aspects of water management fairly.					

SECTION D: EFFECT OF POLITICAL DYNAMICS AND POWER IRREGULARITIES

	Statement	1	2	3	4	5
1	Political power differences between countries affect how decisions are made about Nile water use.					
2	Some countries dominate the Nile discussions due to their economic or geopolitical influence.					
3	Political interests often block the implementation of agreements made under cooperative frameworks.					
4	My country has faced challenges from unilateral projects developed by stronger upstream or downstream neighbors.					
5	Political shifts in some countries disrupt ongoing water cooperation processes.					
6	Some powerful countries use their influence to push for water projects without full regional consensus.					
7	Domestic politics in my country sometimes interfere with consistent Nile Basin engagement.					
8	Without a binding legal framework, it is hard to ensure that all states comply with joint decisions.					
9	Power struggles and mistrust among some riparian countries delay the full success of cooperation frameworks					

SECTION E: TRANSBOUNDARY WATER COOPERATION IN THE NILE BASIN REGION

	Statement	1	2	3	4	5
1	The Nile Basin countries have effective mechanisms to resolve water-related conflicts peacefully.					
2	Cooperation among Nile Basin countries has improved the sustainable management of the Nile waters.					
3	Joint projects on water infrastructure (dams, irrigation, hydropower) benefit all Nile Basin countries equally.					
4	Information and data sharing among Nile Basin countries regarding water usage is timely and transparent.					
5	International agreements on Nile water use are respected and followed by all Riparian states.					
6	There is mutual trust among Nile Basin countries in managing the Nile's water resources.					
7	Local communities along the Nile benefit from transboundary water cooperation initiatives.					
8	Environmental conservation efforts in the Nile Basin are strengthened through regional cooperation.					

Appendix ii:

Interview Guide

1) In your view, how has hydro-diplomacy influenced the political or diplomatic relations between your country and other Nile Basin states?
2) What role do regional water negotiations or platforms (such as bilateral or multilateral forums) play in enhancing peace and mutual understanding among riparian countries?
3) How has your country used diplomatic engagement over water issues to promote regional peace and cooperation?
4) What is your assessment of the Nile Basin Initiative's role in supporting your country's efforts in water resource management?
5) What challenges or successes have you experienced in your engagement with NBI-supported programs or technical projects?
6) How do political differences and power disparities among Nile Basin countries affect regional water cooperation?
7) What are some of the political or institutional barriers that hinder the implementation of joint agreements or projects on Nile water management?
8) How can existing power imbalances be addressed to ensure stronger and more inclusive transboundary water governance in the Nile Basin?