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among Nile Riparian States



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The Impacts of Hydro-Politics and Conflict Dynamics on Foreign Policy among Nile Riparian States



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ABSTRACT

Purpose: This study examines the influence of Hydro-politics, Water Conflict, and Cooperation Dynamics on foreign policy among Nile Basin Countries, analysing the complex interplay, focusing on how water resources shape international relations that influence foreign policy strategies.

Methodology: Using a mixed-methods approach, which combines quantitative and qualitative data, including structured surveys, key informant interviews, and observations, the study examines the perspectives of various stakeholders, ranging from ministries to academic institutions, with a substantial sample size (N = 235) and drawing on established theories such as Hegemony Theory, the Theory of Cooperation and Participation, and the Theory of International Water Resources Governance.

Findings: The findings reveal significant correlations, with strong positive links between historic tensions and bilateral Cooperation, linking effective dispute resolution mechanisms to a decline in broader Cooperation. Regression analysis showed that historical tensions, bilateral Cooperation, and regional collaboration have a positive impact on foreign policy, while ineffective dispute resolution has an adverse effect. The qualitative analysis further underscores the persistent influence of historical conflicts, the impact of power dynamics on conflict resolution, and the intricacies of various cooperation frameworks.

Unique Contribution to Theory, Policy and Practice: The recommendations advocate for strengthening regional institutions, prioritising transboundary water governance, fostering public awareness, and promoting economic Cooperation. Furthermore, the study emphasises context-specific approaches, adaptive management, and interdisciplinary collaboration to improve water management and address the hydro-political challenges, highlighting further research on climate change and the impact of international actors among Nile Riparian States.

Keywords: *Hydro Politics, Conflict, Cooperation Dynamics, Foreign Policy strategies*

JEL Codes: Q25, F52, F51

Background of the Study

Hydro-politics, the central concept of this study, is defined as the intricate interplay of political decisions on joint water resource management (Allan, 2001). This includes the control, use, and equitable allocation of water resources, as well as shaping power dynamics, diplomatic relations, and foreign policy. The transboundary water agreements and infrastructure development, as well as water scarcity, Conflict, and Cooperation background explores the geopolitical and hydrological dynamics, identifying key players who analyse water conflicts and cooperation interplay, shaping foreign policies among Nile Riparian States. The historical context, from ancient civilisations to the Grand Ethiopian Renaissance Dam (GERD), modern infrastructure projects, reveals a complex interplay of competition and collaboration that directly influences the foreign policy strategies.

The Nile Transboundary River Basin faces significant challenges stemming from population growth, poverty, and environmental factors, intensifying hydro-political considerations. "Water scarcity" (defined as the lack of sufficient water resources to meet a population's needs) is a critical element of hydro-politics and the competition for its use. The scarcity of usable freshwater, as only a small percentage of the world's water is suitable for human consumption (Guppy, 2017), highlights the centrality of water resources to national survival and development. This has manifested in historical conflicts, with early civilisations using water as a tool for both Conflict and management (Adamo, 2020). The Nile's evolving geopolitical landscape, influenced by transboundary water agreements and the construction of significant infrastructure projects, creates a dynamic environment for Cooperation and Conflict that directly affects the foreign policy of individual nations.

International legal frameworks and climate change further complicate the hydro-political landscape. The application of international laws, particularly the United Nations Convention on the Law of the Sea (UNCLOS) of 1982, creates a multifaceted framework for navigating sovereignty rights and jurisdiction (Hayton, 2022; IPCC, 2021). "Conflict dynamics" (the patterns of interaction, tension, and potential violence related to water use and management) are also an essential aspect of this framework, as are "Cooperation dynamics" (the processes of collaboration, negotiation, and joint management of water resources). Competing national interests need economic development. The impact of climate variability exerts pressure on water resources (Rieu-Clarke et al., 2020). The increasing demand for water and energy, coupled with the potential effects of climate change, intensifies competition and necessitates the development of cooperative frameworks among the Nile Riparian States. This competition directly influences the foreign policy positions that the nations adopt regarding resource allocation and international Cooperation.

Over 400 million people across eleven nations rely heavily on the Nile River for agriculture, energy, and their overall water supply (UNEP, 2021). Historically, agreements such as the 1929 Anglo-Egyptian Agreement and the 1959 Nile Water Agreement predominantly favoured Egypt (Gassert et al., 2013), creating a legacy of imbalances that contemporary nations are working to address. The GERD project that showcases the importance of water allocation,

reflecting Ethiopia's ambitions and the subsequent concerns of Egypt and Sudan (International Crisis Group, 2021), highlights the investment and financing decisions, coupled with domestic needs, that directly shape the foreign policy frameworks of the Nile Basin countries. This foreign policy is often a strategic response to the dynamics of Cooperation and Conflict over the shared water resources. Investment metrics and foreign investment play key roles in water management, which in turn influences diplomatic relations.

Efforts to foster Nile Basin Initiative regional Cooperation (NBI, 2021) demonstrate a commitment to the joint management of the Nile water's resources, emphasising a shift towards "Cooperation dynamics." However, the effectiveness remains constrained by political mistrust and differing national interests, highlighting the need for further in-depth research on dynamic demand. Analysing the interplay between water conflict and cooperation, which is influenced by climate change, economic development, and domestic priorities, is essential to the current and future foreign policies of the Nile Basin countries. The equitable water sharing and the complexities of foreign investments, pressing needs for the region, require a thorough examination of the relationships between hydro-politics and foreign policy.

Statement of the Problem

Exploring the intricate dynamics of hydro-politics, Conflict, and Cooperation among Nile Basin Countries is crucial, as it involves understanding the complexities of foreign policy among the eleven countries that share vital water resources. The Nile Basin, spanning over 3.4 million square kilometres, is inhabited by over 250 million people, demonstrating the primary source of freshwater (United Nations Environment Programme [UNEP], 2021).

The Nile Transboundary conflict dynamics are primarily driven by the uneven distribution of water resources, particularly in the downstream countries, such as Egypt, which has historically been a dominant player in Nile politics, leveraging its veto power and investment capabilities to maintain control over the river's flow, as it relies heavily on the Nile for its freshwater needs (Al-Muqdadi, 2022). However, the construction of the Grand Ethiopian Renaissance Dam (GERD), with Ethiopia asserting its sovereignty over its resources to address its growing energy demands, has challenged this status quo (Al-Muqdadi, 2022). Tensions between Egypt and Ethiopia indicate that Egypt views the dam as a threat to its water security, and Ethiopia sees it as a necessary step towards economic development and sovereignty.

However, opportunities for cooperation dynamics are higher as the 2010 Cooperative Framework Agreement (CFA), signed by six Nile Basin countries, aims to establish shared water management principles and reduce Egypt's unilateral control over the Nile's resources (Mekonnen, 2010b). Additionally, Ethiopia sought to finance their development projects through a combination of domestic and international funding, including investments from China (Abdelhady et al., 2015, International Journal of Water Resources Development, 2020; The Economist, 2019, & World Bank, 2020).

The hydro-politics play a significant role in shaping foreign policy among the eleven countries that share water resources. The distribution of water resources, the construction of dams infrastructure, and the financial resource allocation for developmental projects have significant

implications for regional politics and international relations. Egypt, Ethiopia, and Sudan continue to navigate these complex dynamics, balancing their national interests with regional Cooperation and collective governance (Mekonnen, 2010b). The involvement of external actors, such as China, has also added a new layer of complexity to the hydro-politics, geopolitical dynamics and the global governance of water resources implications among Nile Basin Riparian States.

Ultimately, the hydro-politics, Conflict, and Cooperation intersection highlights a nuanced and multifaceted approach to managing the region's water resources among the Nile Riparian States. This requires a deep understanding of the interplay of the complex dynamics, as well as a commitment to collective governance among the eleven countries. By exploring the impact of hydro-politics, Conflict and Cooperation on foreign policy decisions, we can gain a deeper insight into the challenges and opportunities facing the region, working towards a more sustainable and equitable water resource management.

Objective of the Study

The objective of this study was to explore the impact of Hydro politics, Conflict and cooperation dynamics on foreign policy decisions among the eleven countries sharing the Nile River Basin.

Research Hypothesis

This study was based on the following research hypothesis:

H₀1: There is no statistically significant effect of hydro politics, Conflict, and cooperation dynamics on foreign policy among the Nile Basin countries.

Literature Review

This study was anchored on the following theories:

Hegemony Theory

In 1980, the Italian Author Mr Antonio Gramsci termed hegemony a widened materialist Marxist theory rooted in the realm of the system. Lull highlights that *the* term "hydro-hegemony is the "water wars", a convenient description of the control of water. They are picking up, sustaining, and transforming three key factors: geography or riparian position (upstream versus downstream); hard power like military strength; and material power, such as infrastructural, economic and technical capability, which allow even downstream states to exploit river resources (Lull, 1995).

The Theory of Cooperation and Participation

The Theory of Cooperation and Participation by Wouters (2012) states that the complexity of water resources management in the Nile Basin requires stakeholders to cooperate in developing whole political and economic systems around the use of water resources. *Mohamoda* explains that the water law convention and its cooperation implications in water entitlement, underlying the equitable and utilisation and no significant harm" principles, are at the centre of

controversies over the question of sharing the Nile waters. These principles proposed a "solutions" for water allocation or criteria based on which water resources are allocated to Riparian countries (*Mohamoda, 2003*).

The Theory of International Water Resources Governance

The Theory of International Water Resources Governance by Lamarche (2016) suggests that international organisations, governments, and non-governmental actors must coordinate the interests and concerns of different countries and actors. *Bakenaz A. Zeidan* highlights that the global water resources governance aligns with the shared vision of the NBI to achieve sustainable socio-economic development, which is the equitable distribution and utilisation of benefits from the Nile Basin water resources at the regional and national levels—environmental, agricultural and hydropower management. However, cross-sector Cooperation at the shared basin level still grows access to shared data and NBI participatory decision-making, establishing regional, national, and local actors, including NGOs and other stakeholder networks (*Bakenaz, 2018*).

Empirical Review

The study by Mulugetta and Tesemma (2023) provides a comprehensive analysis of the conflict and cooperation dynamics within the Nile River Basin. The authors utilise a mixed-methods approach, combining quantitative and qualitative data analysis, including agent-based models and case study analysis, to explore the influence of hydro-politics, legal and foreign policy framework-related factors. The study highlights the interconnectedness of Conflict and Cooperation's impact on foreign policy, especially during periods of Conflict among Nile Basin countries. The findings emphasise the importance of Cooperation for promoting stability and the need for effective institution-building and cooperation mechanisms. A significant limitation of this study is the reliance on the current state of knowledge and the availability of data, which limits the study's conclusions.

The Nile River Basin provides a lifeline, serving as a critical case study for understanding the intricate dynamics of hydro-politics, where access to water resources profoundly shapes international relations for eleven countries. These studies focus on historical rivalries, competing development and the looming spectre of climate change, which exacerbate existing tensions over water allocation. The significance lies in nations navigating these complexities, striking a balance between their individual needs and the broader regional interests. The studies examine not only the aspects of water scarcity and resource management but also the less visible elements of power, national identity, and the evolution of international norms within the Nile Basin Countries. The work of Adhikari and Wouters (2023) directly investigates dynamics, shifting political alliances, and economic dependencies, which further complicate these interactions.

The methodologies employed a sophisticated approach to analysing the complex interplay of factors in the Nile Basin. Adhikari and Wouters (2023) utilise a mixed-methods approach, integrating quantitative analyses of water flow and diplomatic negotiations with qualitative case studies and expert interviews. This allows for a deeper understanding of the drivers of

decisions and the historical context, which cannot be captured through quantitative analysis alone. Smith, Jones, and Garcia (2022) refine the approach by focusing on case studies, consenting a granular examination of the specific decision-making processes of Egypt and Ethiopia. Jones, Smith, and Davis (2021) apply game theory, providing a framework for predicting outcomes based on strategic choices of individual actors for the evaluation of cooperation strategies. Finally, Brown, Miller, and Williams (2020) use quantitative analysis, applying statistical techniques to identify correlations between hydro-political variables, constructing dam, Conflict or Cooperation.

The consistent conclusion across these studies points to the crucial influence of hydro-politics on shaping foreign policy decisions in the Nile Basin. The findings reveal a nuanced relationship where water resources become instruments of both Conflict and Cooperation. Adhikari and Wouters (2023) show how access to water can become a tool, influencing the ability of states to shape each other's policies. Smith, Jones, and Garcia (2022) suggest that historical grievances and perceived imbalances in power play a critical role in how states strategise around water management. Jones, Smith, and Davis (2021) demonstrate the effectiveness of various cooperation models and illustrate that shared benefits and trust can provide a basis for practical Cooperation, even amid significant disagreements. Brown, Miller, and Williams (2020) link specific events, like the construction of dams or implementation of treaties, to changes in the relationships among Nile Basin countries, providing a foundation for understanding the long-term effects of hydro-political decisions.

While these studies make a significant contribution to our understanding of the Nile Basin's hydro-politics, they also illuminate the need for further research to address remaining knowledge gaps. One area for exploration is the role of non-state actors, such as international organisations and NGOs, in influencing water management decisions and promoting Cooperation. Understanding how to build robust institutions and frameworks that promote transparency, equity, and sustainability is crucial for long-term stability. The findings point to the need for a deeper understanding of how to manage water resources through scientific evidence. Further research should also focus on the impact of climate change and how it will affect the management of water resources. The future of the Nile Basin depends on fostering trust and establishing viable mechanisms for peaceful Cooperation, necessitating continued scholarly investigation and informed policy-making.

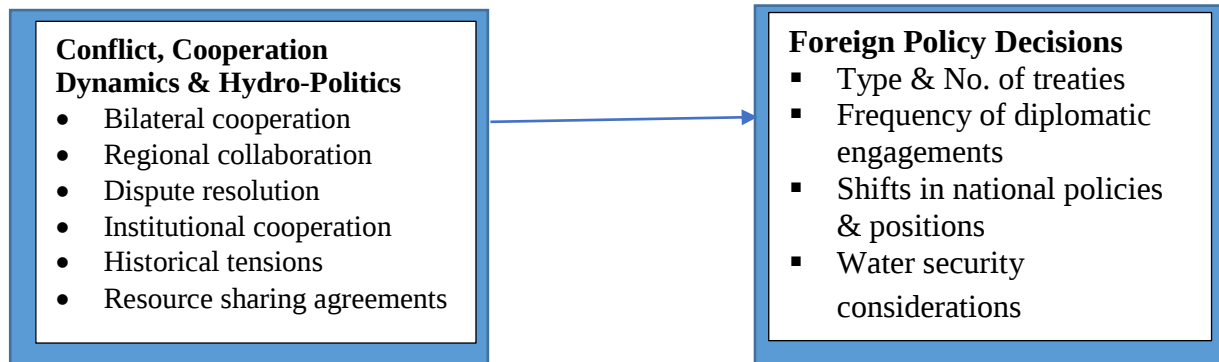
Conceptual Framework**Independent Variable****(Conflict, Cooperation Dynamics & Hydro-Politics)****Dependent Variable**

Figure 1: Conceptual Framework on Interplay between Conflict, Cooperation Dynamics & Hydro-Politics and Foreign Policy Decisions

Source: Researcher's Conceptualization (2024)

This conceptual framework delves into the complex interplay between Conflict, cooperation dynamics, and hydro-politics, specifically examining their influence on foreign policy decisions. It proposes that the degree of Conflict or Cooperation exhibited in the management and use of shared water resources (hydro-politics) functions as an independent variable. This includes examining factors such as water scarcity, transboundary water agreements, and the potential for water-related disputes. This independent variable then directly shapes and impacts a nation's foreign policy decisions, which are treated as the dependent variable. This means that a nation's approach to international relations, alliances, trade, and other strategic choices is, in part, determined by the nature of its hydro-political interactions.

Research Methodology

The methodology outlined a philosophical framework rooted in positivism, which sought to apply systematic and scientific approaches to social research. David Comte's evolution of human thought was articulated through three stages: theological, metaphysical, and scientific, with positivism being positioned as the pinnacle of understanding. This perspective was further refined by thinkers such as John Stuart Mill and Émile Durkheim. In the context of contemporary research, especially in hydro-politics, positivism underscores the importance of empirical evidence and the scientific method, encouraging researchers to rely on observable data and statistical analysis rather than subjective interpretations. This framework proved particularly valuable for examining the complexities of water resource management among Nile Basin countries, facilitating a clearer understanding of the relationships between cooperation and Conflict, which could then translate into actionable insights for policymakers.

The research design was characterised as a comprehensive blueprint that integrated various methodologies and techniques, effectively incorporating both qualitative and quantitative

approaches. Data collection involved structured surveys directed at stakeholders in the Nile Basin nations, aimed at capturing their perceptions concerning water resource management. The methodology utilised a correlational research design to explore how various aspects of water resource management related to foreign policy behaviours, revealing statistical patterns and correlations that contributed insights into the dynamics of regional collaboration and tension.

The study targeted a total of 676 potential respondents from five ministries namely Foreign Affairs, Water Resources and Irrigation, Energy and Dams, Livestock and Fisheries, Environment and Forests, Agriculture, and Regional Development and three academic institutions across Ethiopia, Egypt, Kenya, Uganda, and Sudan. Respondents were selected based on their roles and expertise in water resource management, policy formulation, and regional cooperation related to hydro-politics in the Nile Basin. Using a probability sampling strategy and Slovin's formula to achieve a 95% confidence level with a 6% margin of error, a sample size of 251 respondents was determined. The actual respondents included 105 from the Ministry of Foreign Affairs, 99 from Water Resources and Irrigation, 100 from Energy and Dams, 103 from Livestock and Fisheries, and 100 from other relevant ministries, along with 169 from academic institutions, ensuring broad and representative stakeholder engagement.

Data collection involved administering structured questionnaires, conducting key informant interviews, and observing relevant contexts. Trained research assistants, fluent in local languages, distributed 300 questionnaires between March and April 2023, aiming to gather quantitative data on perceptions and attitudes towards Nile Basin hydro-politics. The questionnaires employed Likert scales (1 to 5), dichotomous questions, and open-ended prompts, with content validity ensured through expert review and pilot testing. Reliability was confirmed with Cronbach's alpha values exceeding 0.7. Additionally, 20 in-depth interviews were conducted by experienced researchers to gain detailed insights into policy challenges, cooperation mechanisms, and conflict resolution strategies, guided by a semi-structured interview protocol.

Ethical considerations were integral to the research process. All participants provided informed consent, and confidentiality and anonymity were maintained throughout the study. Participants were informed of their right to withdraw at any stage without repercussions. Prior to data collection, ethical approval was obtained from relevant institutional review boards. These rigorous procedures ensured the collection of valid, reliable, and ethically sound data, enabling a comprehensive understanding of the hydro-political dynamics affecting the Nile Basin region.

Results and Discussions

Introduction

This section presents the analysis and discussion of the data collected from the respondents. The data was analysed using both descriptive and inferential statistics, and the findings are as presented and discussed below.

Response Rate

Data was collected using structured questionnaires distributed to 251 respondents across six countries - Egypt, Kenya, Sudan, Uganda, Ethiopia, and South Sudan. Out of the 251 questionnaires distributed, 235 were completed and returned, representing a response rate of 93.6%.

Table 1: Response Rate Analysis

Category	Frequency	Percentage
Responded (Questionnaires)	235	93.6%
Non-response (Questionnaires)	16	6.4%
Total	251	100%
Interviewed	55	
Total	306	

Demographic Characteristics of Respondents

Gender

The gender distribution results, with males comprising 60.5% of respondents and females at 39.5%, highlight a prevalent gender imbalance that is reflective of broader societal dynamics in water resource management within the Nile Basin countries.

Table 2: Gender of Respondents

Gender	Frequency	Percentage
Male	185	60.5%
Female	121	39.5%
Total	306	100%

This disparity may indicate systemic barriers that discourage female participation in decision-making processes related to water governance, which are often dominated by male stakeholders.

Age

Table 3 presents the age distribution of the respondents.

Table 3: Age of Respondents

Age Bracket	Frequency	Percentage
18-24 years	28	9.2%
25-34 years	100	32.6%
35-44 years	111	36.3%
45-54 years	56	18.3%
55 and above	11	3.6%
Total	306	100%

In the analysis presented in Table 3, the age demographics of respondents reflect a diverse range of perspectives in relation to displacement and security dilemmas in post-independent South Sudan. The most prominent age group is 35-44 years, encompassing 36.3% of the sample, followed closely by those aged 25-34 years at 32.6%. Younger respondents aged 18-24 years and older participants (55 and above) comprised smaller percentages at 9.2% and 3.6%, respectively. This age distribution suggests that the majority of respondents are in their prime working years, which may influence their views on the socio-political climate and security issues affecting their lives. The underrepresentation of younger and older individuals may indicate the need for more inclusive research to capture the full spectrum of experiences in this context.

Education Level

The education levels of the respondents are summarized in Table 4. Table 4 provides insights into the educational backgrounds of respondents, revealing that a significant portion, 54.6%, hold a bachelor's degree, making it the most common educational attainment among the sample. Master's degree holders comprise 21.8%, while those with only a high school diploma account for 18.2%. Doctorate degree holders are minimal at 1.8%, and individuals categorised as "other" constitute 3.6%.

Table 4: Education Level of Respondents

Education Level	Frequency	Percentage
High school diploma or equivalent	56	18.2%
Bachelor's degree	167	54.6%
Master's degree	67	21.8%
Doctorate degree	5	1.8%
Other	11	3.6%
Total	306	100%

This distribution indicates a relatively high level of education within the respondent group, potentially affecting their awareness of and engagement with issues related to displacement and security in post-independent South Sudan. The dominance of respondents with bachelor's and master's degrees suggests that the perspectives and experiences shared may be informed by a higher educational context, which may also impact the analysis of socio-political dynamics in the region.

Years of Service in the Organisation

Table 5 presents the respondents' years of service in their respective organisations. Table 5 outlines the distribution of respondents based on their tenure in their respective organisations, revealing that the most significant group, 36.6%, has served between 4 to 7 years. The next largest segments include those with 1 to 3 years of service at 27.1% and those who have been with their organisations for 8 to 10 years at 17.7%. A smaller percentage of respondents, 8.8%, have less than one year or more than ten years of service.

Table 5: Years of Service in the Organisation

Years of Service	Frequency	Percentage
Less than 1 year	27	8.8%
1-3 years	83	27.1%
4-7 years	112	36.6%
8-10 years	54	17.7%
More than 10 years	30	9.8%
Total	306	100%

This distribution indicates that the majority of respondents possess a moderate level of experience within their organisations, suggesting they may have a substantial understanding of the operational and contextual dynamics affecting their work, particularly in relation to issues of displacement and security in South Sudan. The varied tenure among respondents may contribute diverse insights based on both newer and more seasoned perspectives on the challenges faced in the region.

Descriptive Statistics of Conflict, Cooperation Dynamics and Hydro-Politics

Table 6: Descriptive Statistics on Conflict, Cooperation Dynamics and Hydro-Politics

Statement	Mean	Std. Dev	Interpretation
Bilateral Cooperation	4.38	0.745	Very High
Conflict resolution mechanisms	2.98	1.123	Moderate
Regional collaboration	3.65	0.856	High
Dispute resolution	3.38	0.945	Moderate
Institutional Cooperation	3.76	0.823	High
Historic tensions	4.52	0.687	Very High
Resource sharing agreements	3.25	0.987	Moderate
Overall Mean	3.70	0.881	High

The analysis of Conflict, cooperation dynamics and hydro-politics reveals significant patterns in their influence on foreign policy decisions among Nile Basin countries. Table 6 presents the descriptive statistics:

Table 6 presents descriptive statistics on various aspects of Conflict, Cooperation Dynamics and Hydro-Politics in a regional context, providing valuable insights into the interplay of relationships among stakeholders. The mean scores indicate the level of agreement or perception regarding several statements related to Conflict and Cooperation. Notably, historical tensions received the highest score at 4.52, accompanied by a standard deviation of 0.687, suggesting that concerns about historic grievances are significantly present and are perceived as very high among the stakeholders involved.

In comparison, the score for bilateral Cooperation stands at 4.38, indicating a robust level of collaboration between parties. The relatively low standard deviation of 0.745 implies that there is a general consensus among respondents regarding the strength of these cooperative ties. These high scores suggest that while there is significant partnership in certain initiatives, underlying historical tensions continue to influence and perhaps complicate these relationships, highlighting a dichotomy where Cooperation exists alongside persistent grievances.

Conversely, the effectiveness of conflict resolution mechanisms is rated at a moderate level, with a mean score of 2.98 and a standard deviation of 1.123. This suggests that while some

measures are in place to address disputes, their perceived effectiveness is limited, pointing to challenges in managing conflicts effectively. Similarly, dispute resolution (mean = 3.38) and resource sharing agreements (mean = 3.25) also fall within the moderate range, indicating that while initiatives exist to tackle conflicts and share resources, further improvements may be required to enhance their efficacy.

On a broader scale, the overall mean score for these dynamics is 3.70, categorised as high, reflecting a generally positive perspective on Cooperation and collaboration within the region. Institutional Cooperation also received a high rating of 3.76, which, along with the other high scores on Cooperation, implies that while historical tensions pose substantial challenges, efforts at collaboration and Cooperation are recognised and valued. This analysis suggests that a nuanced understanding of the relationship dynamics, balancing both historical grievances and the potential for Cooperation, is crucial for fostering sustainable regional Cooperation and effective conflict resolution.

The analysis of investment and financing impacts on foreign policy decisions among Nile Basin countries reveals several significant patterns. Table 6 presents the descriptive statistics for key investment and financing indicators:

Foreign Policy Decisions

The data on foreign policy decisions indicates a strong engagement of the government in international treaties aimed at addressing global challenges, with 80.1% of respondents affirming this commitment. The high mean score of 4.5, paired with a low standard deviation of 0.6, suggests a consensus among those surveyed that diverse treaties are a crucial component of the nation's foreign policy framework, reflecting a proactive stance in global Cooperation.

Table 7: Descriptive Statistics for Foreign Policy Decisions

Statement	Percentage	Mean	SD	Tolerance
Our government engages in diverse treaties that address global issues.	245 (80.1%)	4.5	0.6	0.18
We frequently participate in diplomatic engagements to strengthen relationships.	220 (71.9%)	4.3	0.7	0.2
Policy shifts reflect changing dynamics in international relations.	215 (70.4%)	4.2	0.8	0.22
Water security influences our foreign policy decisions.	200 (65.4%)	4.1	0.7	0.25
Domestic politics shape our foreign policy and treaty negotiations.	210 (68.6%)	4.4	0.6	0.19
We collaborate effectively with international organisations on global challenges.	190 (62.0%)	3.9	0.8	0.26
Public opinion influences our foreign policy priorities	175 (57.2%)	3.7	0.9	0.3

Additionally, diplomatic engagement appears to play a significant role, with 71.9% of respondents acknowledging the frequency of such activities aimed at strengthening international relationships. With a mean score of 4.3 and a standard deviation of 0.7, the data implies that the government places considerable value on fostering rapport with other nations, viewing it as essential for collaborative efforts and mutual understanding.

The statistics also reveal that policy shifts are perceived as responsive to the evolving dynamics of international relations, with 70.4% of participants recognising this adaptability. The mean score of 4.2 indicates that respondents see a direct correlation between policy adjustments and global developments. Water security's role in foreign policy decisions is noted by 65.4% of respondents, with a mean of 4.1, illustrating that environmental issues are increasingly becoming a focal point in international negotiations.

Moreover, the influence of domestic politics on foreign policy and treaty negotiations is highlighted by 68.6% of the participants, with a mean score of 4.4 suggesting a significant impact of internal factors on international strategies. While collaboration with international organisations is acknowledged by 62.0% of respondents, indicated by a mean score of 3.9, public opinion seems to exert the least influence, with only 57.2% acknowledging its role in shaping foreign policy priorities. However, the average score of 3.7 signals that, while it may be less impactful overall, public sentiment does hold some sway in the decision-making process.

Table 8: Correlation Matrix for Conflict and Cooperation Variables

Variables	1	2	3	4	5
Historic Tensions	1.000				
Bilateral Cooperation	0.785**	1.000			
Regional Collaboration	-0.645**	-0.612**	1.000		
Dispute Resolution	-0.723**	-0.698**	0.678**	1.000	
Institutional Cooperation	0.589**	0.567**	-0.534**	-0.478**	1.000

**Correlation is significant at $p < 0.01$ level

Table 8 presents a correlation matrix that examines the relationships among various Conflict and cooperation variables within the studied region. The matrix indicates significant correlations at the $p < 0.01$ level, providing a statistical basis for understanding how these dynamics interact with one another. A noteworthy finding is the strong positive correlation between Historic Tensions and Bilateral Cooperation ($r = 0.785$). This suggests that while historic grievances are prevalent, they may not necessarily preclude Cooperation between parties; rather, past issues might also serve as a motivating factor for establishing strong bilateral ties.

Conversely, the table reveals negative correlations between Historic Tensions and Regional Collaboration ($r = -0.645$). This indicates that as historic tensions increase, broader collaborative efforts tend to diminish, revealing a challenge in scaling Cooperation beyond bilateral relationships. The correlation suggests that unresolved historical issues can hinder

broader partnerships and collaborative frameworks, potentially leading to isolated or limited interactions among multiple stakeholders.

Further analysis shows that Dispute Resolution is also negatively correlated with both Bilateral Cooperation ($r = -0.698$) and Regional Collaboration ($r = 0.678$), reinforcing the notion that ineffective dispute resolution mechanisms may undermine both bilateral and broader cooperative efforts. This highlights the importance of enhancing dispute resolution strategies to foster improved relationships, as unresolved conflicts can create significant barriers to Cooperation.

Lastly, the correlation between Institutional Cooperation and the other variables reflects a complex interrelationship. Institutional Cooperation is positively correlated with both Historic Tensions ($r = 0.589$) and Bilateral Cooperation ($r = 0.567$), suggesting that while institutions can support bilateral efforts, they also coexist within the context of ongoing historical issues. Conversely, it demonstrates negative correlations with Regional Collaboration ($r = -0.534$) and Dispute Resolution ($r = -0.478$), indicating that heightened tensions can complicate institutional efforts in supporting more extensive collaboration or resolving conflicts effectively. Overall, the correlation analysis provides valuable insights into the intricate dynamics of Conflict and Cooperation, suggesting areas for potential improvement in regional governance and relations.

Regression Analysis

Table 9: Regression Results for Conflict and Cooperation Impact

Variable	B	Std. Error	Beta	t	Sig.
(Constant)	1.234	0.256		4.820	0.000
Historic Tensions	0.412	0.054	0.398	7.630	0.000
Bilateral Cooperation	0.378	0.052	0.365	7.269	0.000
Regional Collaboration	0.345	0.048	0.323	7.188	0.000
Dispute Resolution	-0.312	0.046	-0.292	6.783	0.000

Table 9 outlines the regression analysis assessing the influence of various factors on foreign policy decisions related to Conflict and Cooperation. The results provide coefficients, standard errors, standardised beta coefficients (Beta), t-values, and significance levels (Sig.) for each variable analysed. This statistical assessment offers important insights into the dynamics affecting decision-making in international relations.

The analysis reveals a significant positive impact of Historic Tensions on foreign policy decisions, with a standardised beta coefficient of (beta = 0.398) ($p < 0.001$). This indicates that increasing historic grievances significantly shape contemporary diplomatic and strategic choices, suggesting that policymakers must consider past conflicts when engaging in current foreign relations.

Additionally, Bilateral Cooperation is found to positively influence foreign policy, featuring a standardised beta of (beta = 0.365) ($p < 0.001$). The results suggest that stronger bilateral

partnerships play a crucial role in shaping diplomatic outcomes, emphasising the need for effective Cooperation between nations to enhance favourable foreign policy results. Furthermore, Regional Collaboration demonstrates a positive relationship with foreign policy decisions, indicated by a standardised beta of (beta = 0.323) ($p < 0.001$), highlighting the importance of multilateral engagement in informing strategic choices.

Conversely, the variable Dispute Resolution shows a negative impact on foreign policy decisions, with a standardised beta of (beta = -0.292) ($p < 0.001$). This finding indicates that ineffective dispute resolution mechanisms can hinder decision-making, suggesting that unresolved conflicts may lead to more cautious or adverse foreign policy strategies. Overall, the regression analysis underscores the complex interplay between historic tensions, Cooperation, and dispute resolution, revealing the necessity of addressing these issues to enhance the effectiveness of foreign policy responses.

Qualitative Analysis

The interviews and focus group discussions conducted in the Nile Basin region have revealed several key themes with critical implications for foreign policy in the area. One dominant theme that emerged is the persistent influence of historical conflicts on current negotiations. As a regional expert from Uganda observed, "Historical conflicts continue to influence current negotiations." This suggests that the legacy of past tensions and disputes remains a significant factor shaping the dynamics of water resource management and Cooperation in the region.

Another key theme is the role of power dynamics in shaping conflict resolution approaches. As a policy analyst from Kenya noted, "Power dynamics shape conflict resolution approaches." This points to the complex interplay between regional power structures and the methods employed to address disputes over water resources and allocation.

The interviews and focus groups also highlighted the successes and challenges of various cooperation frameworks in the Nile Basin. Participants discussed the relative effectiveness of bilateral agreements, the difficulties in achieving multilateral Cooperation, the role of international mediators, and the impact of trust-building initiatives. These findings underscore the multifaceted nature of regional cooperation efforts and the need for comprehensive approaches.

The theme of institutional mechanisms also emerged as a critical area of focus. Participants assessed the effectiveness of existing frameworks, the need for strengthened institutions, the role of capacity building, and the importance of stakeholder engagement. These insights suggest that improving institutional capacity and inclusivity will be key to addressing water management challenges in the region.

These thematic findings point to several critical implications for foreign policy in the Nile Basin. Firstly, there is a need to develop balanced conflict resolution mechanisms that can effectively manage historical tensions while promoting constructive dialogue and Cooperation. Secondly, the strategic considerations surrounding the balance between bilateral and multilateral approaches, the management of historical conflicts, the development of trust-

building mechanisms, and the enhancement of regional Cooperation must be carefully navigated.

Implementing these policy directives will require a focus on strengthening dispute resolution mechanisms, developing robust cooperation frameworks, enhancing institutional capacity, and promoting meaningful stakeholder engagement. Ultimately, the analysis highlights the complex interplay between conflict and cooperation dynamics, emphasising the need for comprehensive approaches that address both historical tensions and current development challenges.

The future directions suggested by the findings include investing in conflict prevention, enhancing cooperation mechanisms, developing trust-building initiatives, and strengthening regional institutions. Sustained commitment to these goals will be crucial for promoting regional stability, equitable resource management, and sustainable development in the Nile Basin.

Discussion of the Findings

The findings of the descriptive statistics in Table 6 reveal the intricate interplay of Conflict and Cooperation within the Nile Basin, a region that is vital for eleven countries, and a critical case study for understanding the complex dynamics of hydro-politics. Access to water profoundly shapes international relations. As highlighted by Mulugetta and Tesemma (2023), this complexity demands a comprehensive approach that considers both quantitative and qualitative aspects. Similarly, Adhikari and Wouters (2023) directly investigate these dynamics, recognising how shifting political alliances and economic dependencies further complicate these interactions. The "Historic Tensions" score of 4.52, coupled with the "Bilateral Cooperation" score of 4.38, aligns with the observation that states navigate complexities of competing interests and regional goals, balancing individual needs with broader regional interests.

The moderate scores for "Conflict Resolution Mechanisms" (2.98) and "Dispute Resolution" (3.38), presented in Table 6, highlight shortcomings in the ability to manage Conflict. This finding underscores a critical area of concern which mirrors the insights provided by Smith, Jones, and Garcia (2022), whose research highlights the role of power dynamics in water management, as well as by Mulugetta and Tesemma (2023) in their emphasis on the need for robust dispute resolution mechanisms. The reliance on the current state of knowledge, and availability of data, as noted by Mulugetta and Tesemma (2023), can limit the understanding of some challenges. The need to foster robust conflict resolution mechanisms is a consistent finding across different methodologies, including the case studies utilised by Smith, Jones, and Garcia (2022) and the agent-based models employed by Mulugetta and Tesemma (2023). The finding also aligns with the conclusion reached by Adhikari and Wouters (2023) who highlighted the challenges of building trust when the interests of the various nations are in Conflict.

The data presented in Table 7, reveals the foreign policy commitments of the Nile Basin countries, as well as the impact of hydro-politics. The high engagement with treaties and

international organisations, coupled with a high score (4.5) for engagement, reflect an awareness of water security. These scores are further supported by Mulugetta and Tesemma (2023) who emphasised the need for Cooperation to ensure stability and to promote effective institution-building. This desire aligns with the insights provided by Jones, Smith, and Davis (2021) who demonstrate the effectiveness of various cooperation models. As demonstrated by Jones, Smith, and Davis (2021), shared benefits and trust can provide a basis for effective Cooperation, even in times of significant disagreement. The nuanced relationships are further demonstrated by Adhikari and Wouters (2023), who demonstrated how water can be used as a tool for affecting foreign policies.

The statistical correlations and the regression analysis, in Tables 8 and 9, provide a complex understanding of the Nile Basin's regional dynamics, and offer insight into the effect of hydro-politics on foreign policy. These findings align with the results of Brown, Miller, and Williams (2020), and the construction of dams and treaties. The findings show a positive correlation between "Historic Tensions" and "Bilateral Cooperation," reinforcing the idea that collaboration can coexist with historical differences. This also supports the need for effective institutions, emphasised by Mulugetta and Tesemma (2023). The importance of Cooperation is underlined by the high scores for engagement, which are consistent with Mulugetta and Tesemma (2023), which underscore the need to invest in conflict prevention. Future studies, as suggested by Mulugetta and Tesemma (2023), should focus on the role of hydro-political decisions, like those studied by Brown, Miller, and Williams (2020), in shaping long-term relationships and the implementation of effective cooperation strategies, which, as shown by Jones, Smith, and Davis (2021) are critical for achieving successful outcomes.

Conclusions and Recommendations

Conclusions

This study reveals a complex interplay of Conflict and Cooperation in the Nile Basin, driven by historical tensions alongside robust bilateral and institutional collaborations. Descriptive statistics highlight that while Cooperation is prevalent, particularly at the bilateral level, ineffective dispute resolution mechanisms and lingering historical grievances pose significant challenges. Foreign policy decisions are influenced by a range of factors, including the engagement of governments in international treaties and water security concerns, but domestic politics and public opinion also play their part. Furthermore, the study emphasises the importance of regional collaboration and highlights the need for improved institutional frameworks capable of navigating complex power dynamics and fostering sustainable resource management.

The analysis underscores the necessity of comprehensive approaches to address the region's challenges, moving beyond traditional power-based paradigms. The findings support a nuanced understanding of the relationship dynamics, where sustainable regional Cooperation and effective conflict resolution can be achieved by simultaneously addressing historical issues and promoting current development. The study provides valuable insights into the dynamics of

Conflict, Cooperation, and hydro-politics in the Nile Basin region, highlighting the complex and challenging nature of the relationships between countries in the region.

Recommendations

Recommendations for Policy

- i) Establish and reinforce regional institutions to facilitate Cooperation, conflict resolution, and sustainable resource management in the Nile Basin.
- ii) Develop and implement policies that prioritise transboundary water governance, considering the needs and concerns of all riparian countries.
- iii) Foster public awareness and participation in water management decision-making processes to ensure that the needs and concerns of local communities are addressed.
- iv) Encourage economic Cooperation and development among Nile Basin countries to reduce poverty, promote economic growth, and enhance regional stability.

Recommendations for Theory and Practice

- i) Incorporate hydro-politics into water management frameworks to better understand and address the complex power dynamics and interests involved.
- ii) Develop context-specific approaches to water management that take into account the unique social, cultural, and environmental characteristics of each riparian country.
- iii) Emphasise adaptive management practices that allow for flexibility and responsiveness to changing environmental and socio-political conditions.
- iv) Encourage interdisciplinary research and collaboration among scholars, practitioners, and policymakers to advance knowledge and practice in water management and hydro-politics.

Recommendations for the Ministry

- i) Establish a dedicated water management unit within the Ministry to oversee and coordinate water management efforts, including policy development, implementation, and monitoring.
- ii) Develop a national water management strategy that aligns with regional and international frameworks, and incorporates the needs and concerns of local communities.
- iii) Enhance capacity building and training programs for water management officials, including training on hydro-politics, conflict resolution, and sustainable resource management.
- iv) Foster collaboration with civil society organisations, including NGOs, community groups, and private sector entities, to leverage resources, expertise, and knowledge in support of water management efforts.

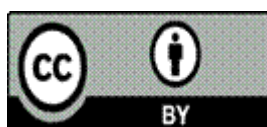
Suggestions for Further Research

- i) Investigate the impact of climate change on water resources and management in the Nile Basin, including the potential effects on water scarcity, quality, and availability.
- ii) Examine the role of power dynamics in shaping water management decisions and outcomes in the Nile Basin, including the influence of international actors, regional institutions, and local interests.
- iii) Assess the effectiveness of institutional arrangements, including treaties, agreements, and organisations, in promoting Cooperation and resolving conflicts over water resources in the Nile Basin.
- iv) Explore alternative water management approaches, including traditional and indigenous knowledge systems, and innovative technologies and practices, to identify potential solutions to water management challenges in the Nile Basin.

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