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GLOBAL WATER CRISIS AND CROSS-BORDER CONFLICTS FROM AN INTERNATIONAL LEGAL PERSPECTIVE

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ABSTRACT

The global water crisis has become one of the most serious challenges in 21st-century international relations. Population growth, climate change, urbanization, environmental pollution, and unsustainable exploitation of water resources have increased pressure on clean water availability in various regions of the world. This condition triggers the potential for cross-border conflicts, especially in rivers, lakes, and aquifers shared by two or more countries. This study aims to analyze the global water crisis and its implications for cross-border conflicts from an international legal perspective. The method used is normative legal research with an approach of international legislation, international legal principles, and relevant literature studies. The results show that international law has provided various instruments to regulate the use of transboundary water resources, including the principle of equitable and reasonable utilization, the obligation to not cause significant harm, and the obligation of cooperation between countries. However, the implementation of these principles still faces various obstacles, such as differences in national interests, imbalances in political power, and weak international law enforcement mechanisms. Therefore, it is necessary to strengthen international cooperation, enhance water diplomacy, and develop effective dispute resolution mechanisms to ensure sustainable, equitable water resource management and prevent future conflicts.

KEYWORDS

Global Water Crisis, Transboundary Conflict, International Law, Water Diplomacy, Water Resources.

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INTRODUCTION

Water is a natural resource that plays a fundamental role in the sustainability of human life, economic development, and the social and political stability of a country. The availability of adequate clean water is a crucial indicator of social well-being and sustainable development. However, in recent decades, the world has faced an increasingly complex water crisis due to population growth, climate change, rapid urbanization, environmental pollution, and uncontrolled exploitation of water resources. This situation has led to an imbalance between water demand and availability in various regions of the world, posing serious challenges to the international community in managing water resources equitably and sustainably (United Nations, 2024).

The current global water crisis has become a strategic issue receiving widespread attention from the international community. Various reports indicate that pressure on water resources continues to increase along with global population growth, industrial development, agricultural expansion, and rising energy needs. At the same time, the availability of freshwater for human use is increasingly limited due to environmental degradation, pollution, and climate change. This phenomenon not only creates environmental problems but also impacts social, economic, political, and international security aspects. Therefore, the water crisis is no longer viewed as a domestic issue for individual countries, but rather as a global challenge requiring a collective response from the entire international community (UNESCO, 2024).

A United Nations report shows that billions of people worldwide still experience limited access to clean water and adequate sanitation. This situation has direct implications for people's quality of life, public health, and economic development. A lack of clean water can increase the risk of disease transmission, reduce economic productivity, and widen social inequality. In many developing countries, limited access to water is even a factor exacerbating structural poverty and hindering the achievement of the Sustainable Development Goals (SDGs) set by the United Nations (United Nations, 2024).

Climate change is a major factor exacerbating the global water crisis. Rising global temperatures have altered rainfall patterns, accelerated glacier melting, increased the frequency of droughts, and triggered flooding in various regions of the world. The impacts of climate change have made water distribution increasingly erratic and unpredictable. In the long term, this situation has the potential to reduce the availability of clean water for human use and increase competition for increasingly scarce water

resources (World Bank, 2023). Problems become increasingly complex when water resources cross national borders. Currently, there are more than 300 international river basins shared by two or more countries. Furthermore, hundreds of transboundary aquifers serve as the primary source of water for millions of people worldwide. The dependence of various countries on the same water resources often gives rise to differing interests regarding their utilization, distribution, conservation, and management. In certain situations, these differences can escalate into inter-state conflicts that threaten regional stability and international peace (McCaffrey, 2019).

The global water crisis is not merely an environmental issue, but also a legal, economic, and international security issue. Water scarcity in various regions has transformed water from a basic necessity into a strategic resource with high political value. Countries located upstream of rivers generally hold a more dominant position than downstream countries due to their ability to control water flows. This imbalance often gives rise to political and diplomatic tensions due to differing interests in the use of shared water resources. Therefore, transboundary water management requires an international legal framework capable of ensuring a balance of rights and obligations between countries (McIntyre, 2018).

The global water crisis is also closely related to the increasing demand for water due to economic growth and industrial development. International organizations predict that global water demand will continue to increase significantly in the coming decades. Meanwhile, water resource capacity tends to decline due to overexploitation and ecosystem degradation. This imbalance between water demand and availability has the potential to intensify competition between countries, particularly in regions with a high dependence on transboundary water resources (World Bank, 2023).

From an international security perspective, water is increasingly viewed as a non-traditional security issue. Unlike conventional military threats, threats stemming from water crises have broader impacts because they affect basic human needs. Water scarcity can trigger decreased food production, increased poverty, population migration, social conflict, and even political instability. Under certain conditions, these impacts can escalate into inter-state disputes, potentially disrupting international peace and security (Biswas & Tortajada, 2019).

Numerous examples of international disputes demonstrate that transboundary water resources have significant potential to trigger conflict if not managed effectively. The dispute over the construction of the Grand Ethiopian Renaissance Dam (GERD) on the Nile River, involving Ethiopia, Egypt, and Sudan, is one of the most prominent examples in recent years. Egypt, as a downstream country, is concerned that the dam's construction will reduce water supplies, which are crucial for the lives of its people and economy. Meanwhile, Ethiopia views the project as part of its sovereign right to utilize natural resources for national development (Salman, 2021).

Besides the Nile River, the conflict over the management of the Indus River between India and Pakistan also demonstrates how water resources can be a sensitive issue in international relations. Although the two countries have a water-sharing agreement through the Indus Waters Treaty, various political tensions continue to affect its implementation. Similarly, in the Mekong River, which involves several Southeast Asian countries, dam construction and energy projects in upstream areas often raise concerns for downstream countries regarding ecosystem sustainability and water availability (McCaffrey, 2019).

However, water resources are not always the cause of conflict. In many cases, water serves as a means to strengthen international cooperation. Various countries have successfully established collaborative mechanisms for international river management through the establishment of joint commissions, the exchange of hydrological data, and the drafting of bilateral and multilateral agreements. This cooperation demonstrates that water can function as a diplomatic instrument that strengthens relations between countries. The concept of water diplomacy has developed as an approach that prioritizes dialogue, negotiation, and shared interests in resolving cross-border water resource disputes (Pohl et al., 2014).

In this context, international law plays a crucial role in regulating the use of transboundary water resources to prevent conflict and ensure their sustainable use. International law provides a set of norms and principles aimed at striking a balance between a state's right to utilize water resources and its obligation to respect the interests of other states. Through a legal approach, conflicts arising from disputes over water resources are expected to be resolved peacefully and in accordance with the principles of international justice (Loures & Rieu-Clarke, 2018).

One of the most important international legal instruments in this area is the 1997 Convention on the Law of the Non-Navigational Uses of International Watercourses.

The Convention sets out various basic principles in the management of international water resources, including the principle of equitable and reasonable utilization, the obligation to do no significant harm, and the obligation of cooperation between countries. The principle of equitable and reasonable use affirms that every country has an equal right to utilize shared water resources while still taking into account the needs and interests of other countries concerned (United Nations, 1997).

Furthermore, the principle of preventing significant harm requires states to avoid actions that could negatively impact other states when utilizing transboundary water resources. This principle reflects a shared responsibility for maintaining the sustainability of water resources and preventing conflicts that could disrupt international relations. In practice, this principle is often controversial because each state has a different interpretation of what constitutes significant harm (Tanzi & Arcari, 2020).

Developments in modern international law also demonstrate the increasingly strong link between water resource management and human rights protection. Recognition of the right to water as a fundamental human right affirms that every individual has the right to access safe, clean, affordable, and sufficient water to meet their needs. Therefore, state policies in managing water resources must not only consider economic and political interests but also guarantee the fulfillment of the basic rights of communities dependent on these resources (United Nations General Assembly, 2010).

However, the effectiveness of international law in resolving transboundary water conflicts still faces various challenges. Not all countries are parties to international legal instruments governing water resources, so the implementation of these norms often depends on the political willingness of each country. Furthermore, differing economic, political, and security interests often lead countries to prioritize national interests over the principles of international cooperation. Weaknesses in international law enforcement mechanisms also hamper effective dispute resolution (Loures & Rieu-Clarke, 2018).

Amid the increasing complexity of the global water crisis, international law is required to provide more effective, adaptive, and responsive regulatory mechanisms to current developments. These challenges include climate change, increasing water

demand, technological developments, population growth, and the ever-changing political dynamics between countries. Therefore, strengthening international legal norms, enhancing institutional capacity, developing more effective dispute resolution mechanisms, and a strong political commitment from countries are needed to ensure that transboundary water resources can be managed peacefully, fairly, and sustainably for the benefit of present and future generations.

Based on the above description, this study aims to analyze the phenomenon of the global water crisis as one of the main challenges in international relations and examine how international law plays a role in regulating and resolving conflicts arising from the use of transboundary water resources. This study also aims to evaluate the effectiveness of international legal principles in realizing equitable, sustainable water resource management and maintaining the stability of relations between countries. This study is expected to provide academic contributions to the development of international law and serve as a reference in formulating policies and international cooperation to address the increasingly complex global water crisis in the 21st century.

METHOD

This research uses a normative legal research method (normative juridical). Normative legal research focuses on the study of legal norms, principles, and rules contained in various laws and regulations, international conventions, and legal doctrines relevant to the problem under study (Marzuki, 2021). This method was chosen because the research focuses on analyzing international legal regulations regarding the global water crisis and cross-border water resource conflicts between countries.

The research approaches used consist of a statute approach, a conceptual approach, and a case approach. The statutory approach is used to examine various international legal instruments governing the management of transboundary water resources, such as the 1997 Convention on the Law of the Non-Navigational Uses of International Watercourses, various international agreements regarding international rivers, as well as resolutions and legal documents issued by related international organizations (United Nations, 1997). The conceptual approach is used to understand various concepts related to the research, such as the global water crisis, water security, transboundary water conflicts, the principle of equitable and reasonable utilization, the principle of no significant harm, and the obligation to cooperate between countries (McCaffrey, 2019). Meanwhile, a case study approach is used to analyze

several transboundary water conflicts that have occurred in various regions of the world, such as the disputes over the Nile, Indus, and Mekong Rivers, as a form of implementation of international law in practice (Salman, 2021).

The legal sources used in this study consist of primary legal materials, secondary legal materials, and tertiary legal materials. Primary legal materials include international conventions, treaties, international agreements, international court decisions, and various official documents related to transboundary water resource management (Shaw, 2021). Secondary legal materials include international law books, scientific journals, academic articles, previous research results, and expert opinions discussing the global water crisis and transboundary water resource conflicts (Loures & Rieu-Clarke, 2018). Tertiary legal materials include legal dictionaries, legal encyclopedias, and various other supporting references used to clarify the concepts and terminology used in the study (Soekanto & Mamudji, 2019).

The legal data collection technique was conducted through library research, which involves collecting, identifying, and reviewing various literature relevant to the research object. Data collection was conducted through searches of books, national and international scientific journals, international organization reports, international conventions, and various legal documents related to transboundary water resource management and interstate conflict resolution (IRWC, 2024).

The legal materials were analyzed using descriptive qualitative analysis methods. The analysis involved inventorying, classifying, interpreting, and evaluating the various legal materials collected. These legal materials were then analyzed based on applicable international legal principles to determine how international law regulates the use of transboundary water resources and to assess the effectiveness of its application in preventing and resolving conflicts arising from the global water crisis (Tanzi & Arcari, 2020). The results of the analysis were then systematically compiled to produce conclusions that align with the research objectives.

By using normative legal research methods, this research is expected to be able to provide a comprehensive analysis of the effectiveness of international law in regulating the management of transboundary water resources and its contribution in preventing conflicts arising from the global water crisis in the modern era (McIntyre, 2018).

RESULTS AND DISCUSSION

RESULTS

Based on research conducted through a review of various international legal instruments, academic literature, and case studies on transboundary water resource management, it was found that the global water crisis has developed into a strategic issue affecting the stability of international relations. The water crisis is not only related to the decreasing availability of clean water but also has implications for economic, social, political, security, and human rights aspects. The increasing global population, climate change, urbanization, and overexploitation of water resources are the main factors accelerating the water crisis in various regions of the world (United Nations, 2024).

Research shows that limited water resources have increased the potential for conflict in areas with transboundary water resources. International rivers and transboundary aquifers shared by two or more countries often give rise to conflicting interests in water utilization, management, and distribution. This situation has led to political and diplomatic tensions between countries, particularly when one country undertakes water infrastructure development that could potentially impact water availability for other countries within the same hydrological system (McCaffrey, 2019).

This study also found that international law has provided a fairly comprehensive legal framework for regulating the management of transboundary water resources. Through the 1997 Convention on the Law of the Non-Navigational Uses of International Watercourses, international law recognizes the principles of equitable and reasonable utilization, the no significant harm principle, and the duty to cooperate as the primary basis for the utilization of shared water resources (United Nations, 1997).

Research results show that the principle of equitable and reasonable use is the most dominant principle in international water law. This principle grants every country sharing water resources the right to utilize water proportionally, taking into account geographic conditions, social and economic needs, the population dependent on the water resources, and the potential impact on other countries. Therefore, no country has the absolute right to unilaterally control or utilize international water resources (Tanzi & Arcari, 2020).

However, research has found that the implementation of these international legal

principles still faces various obstacles. One major obstacle is the differing interests between upstream and downstream countries in the utilization of water resources. Upstream countries tend to have a stronger position because they can control water flows through dam construction, irrigation, and hydroelectric power generation. Conversely, downstream countries often face the risk of reduced water supplies due to policies adopted by upstream countries (Zeitoun & Warner, 2006).

Research findings also indicate that several transboundary water conflicts occurring in various regions of the world illustrate the continued weakness in the implementation of international law in practice. The dispute over the construction of the Grand Ethiopian Renaissance Dam (GERD) on the Nile River between Ethiopia, Egypt, and Sudan demonstrates differing interpretations of international water resource utilization rights. Ethiopia views the dam's construction as a sovereign right to support national development, while Egypt and Sudan believe the project has the potential to reduce the availability of water, a primary need for their communities (Salman, 2021).

In addition to the Nile River, research has also found similar issues in the management of the Mekong and Indus Rivers. Dam construction and water management projects in upstream areas often raise concerns for downstream countries because they can impact ecosystems, agriculture, fisheries, and domestic needs. This demonstrates that despite the existence of various international legal instruments, the potential for conflict remains if countries fail to optimally implement the principles of cooperation and information transparency (McIntyre, 2018).

This study also found that international cooperation mechanisms through water diplomacy are more effective in preventing and resolving transboundary water resource conflicts than confrontational approaches. Countries that build cooperation through the establishment of joint river commissions, the exchange of hydrological data, technical consultations, and regular negotiations show lower levels of conflict. This cooperation allows the countries involved to reach mutually beneficial agreements and reduces the risk of protracted disputes (Pohl et al., 2014).

Furthermore, research findings indicate significant developments in international law regarding the recognition of the right to water as a human right. This recognition expands state responsibilities in water resource management, ensuring that it is not

solely focused on national interests but also considers meeting the community's basic needs for access to clean water and adequate sanitation (United Nations General Assembly, 2010).

Overall, the research findings indicate that international law provides an adequate normative foundation for regulating transboundary water resource management and preventing interstate conflict. However, the effectiveness of international law still depends heavily on state commitment to implementing agreed-upon principles, strengthening international cooperation, and prioritizing peaceful dispute resolution. Therefore, strengthening cooperation mechanisms, enhancing water diplomacy, and complying with international legal norms are crucial factors in addressing the global water crisis and preventing future transboundary conflicts (Loures & Rieu-Clarke, 2018).

DISCUSSION

1. The Global Water Crisis as a Challenge in International Relations

Water is a natural resource that plays a vital role in human life, economic development, food security, public health, and environmental sustainability. In recent decades, the world has faced increasing pressure on clean water availability due to population growth, climate change, urbanization, industrialization, and unsustainable exploitation of natural resources. This situation has led to an imbalance between water demand and availability in various regions of the world, giving rise to a phenomenon known as the global water crisis (United Nations, 2024).

The global water crisis is characterized not only by a reduction in the quantity of available water, but also by declining water quality due to environmental pollution and unequal distribution of water resources. Many countries are struggling to meet their population's water needs, particularly in regions with high population growth and limited water resource capacity. This situation is further complicated when the water resource in question is a transboundary resource shared by two or more countries (UNESCO, 2024).

From an international relations perspective, water has transformed from a basic human need into a strategic resource with significant economic and political value. Countries with access to substantial water resources benefit from supporting national development, agriculture, industry, and energy production. Conversely, countries with limited water resources tend to face greater challenges in maintaining social and economic stability. Therefore, water availability is increasingly linked to issues of

national and international security (water security) (Biswas & Tortajada, 2019).

Climate change is further exacerbating these conditions. Rising global temperatures are causing changes in rainfall patterns, melting glaciers, increasing the frequency of droughts, and extreme weather events, all of which directly impact water resource availability. Consequently, countries sharing cross-border water resources face greater pressure to meet their respective domestic needs. This situation often triggers tensions and conflicts between countries over the use of shared water resources (World Bank, 2023).

2. Cross-Border Conflicts Over Water Resources

Transboundary conflicts related to water resources generally arise from differing interests between countries sharing the same water resources. These differences can manifest themselves in differing needs, levels of dependence on water resources, and management policies implemented by each country. In many cases, conflicts arise between upstream and downstream countries because upstream countries have greater control over water flows.

Upstream countries often leverage their position to build dams, irrigation projects, or hydropower plants to support national development. However, these policies can raise concerns for downstream countries, as they could potentially reduce the volume of water flowing into their territories. This imbalance in position is a major factor fueling tensions in transboundary water resource management (Zeitoun & Warner, 2006).

One of the most relevant examples is the dispute over the construction of the Grand Ethiopian Renaissance Dam (GERD) on the Nile River. Ethiopia, as the upstream country, views the dam's construction as a sovereign right to increase energy capacity and national economic development. Egypt and Sudan, on the other hand, believe the project could reduce water supplies, crucial for their agricultural, industrial, and domestic needs. These differing views demonstrate how water resources can become the subject of competing interests between countries, potentially leading to prolonged conflict (Salman, 2021).

Besides the Nile River, water resource conflicts can also be found in the Indus River between India and Pakistan, and the Mekong River, which involves several countries in Southeast Asia. While each region has distinct characteristics, the emerging conflict patterns are fundamentally related to countries' efforts to secure their

national water needs without neglecting or even sacrificing the interests of other countries sharing the same resources (McCaffrey, 2019).

However, research shows that water conflicts do not always result in the use of military force. In many cases, the disputes that arise are more often manifested in diplomatic tensions, protracted negotiations, or disagreements over water resource management policies. This suggests that while water has the potential to become a source of conflict, the existence of international cooperation mechanisms can reduce the likelihood of direct armed conflict.

3. The Role of International Law in Transboundary Water Resources Management

International law plays a crucial role in regulating relations between nations regarding the use of transboundary water resources. International law aims to create a balance between a nation's right to exploit water resources and its obligation to respect the interests of other nations sharing those resources.

Regulations regarding international water resources have developed through customary international law, international treaties, decisions of international courts, and various legal instruments drafted by international organizations. One of the most important instruments is the 1997 Convention on the Law of the Non-Navigational Uses of International Watercourses, adopted by the United Nations (United Nations, 1997).

The Convention provides a legal basis for governing the rights and obligations of states in the use of transboundary water resources. The Convention demonstrates the international community's recognition of the importance of collective and sustainable water resource management to prevent future conflicts.

In addition to the 1997 Convention, various regional and bilateral agreements also play a role in regulating the use of international water resources. These agreements generally contain provisions regarding water sharing, consultation mechanisms, information exchange, and dispute resolution. Thus, international law serves as both a preventive instrument and a conflict resolution mechanism that can be used by countries in dispute.

4. Analysis of International Legal Principles in Transboundary Water Management

The most fundamental principle in international water law is the principle of equitable and reasonable utilization. This principle recognizes that every country

sharing water resources has the right to utilize those resources, but this utilization must be carried out proportionally and with due regard for the interests of other countries. This principle aims to strike a balance between national needs and international responsibilities (McCaffrey, 2019).

In its application, the principle of fair and equitable use takes into account various factors, such as geographic conditions, social and economic needs, the population dependent on water resources, and potential environmental impacts. Therefore, there is no absolute criterion for determining what constitutes fair use. Assessment of fair water use must be conducted contextually based on the conditions of each region.

The next principle is the no significant harm principle. This principle requires countries to avoid actions that could cause serious negative impacts on other countries when utilizing transboundary water resources. For example, the construction of a dam that drastically reduces water flow or causes environmental damage in downstream countries could be considered contrary to this principle (Tanzi & Arcari, 2020).

Furthermore, international law also recognizes the principle of cooperation (duty to cooperate). This principle emphasizes that countries sharing water resources have an obligation to consult, exchange information, provide early notification of projects with potential transboundary impacts, and resolve disputes peacefully. The principle of cooperation is crucial because transboundary water resource management cannot be carried out unilaterally without considering the interests of other countries.

5. Water Diplomacy as a Solution to Conflict Resolution

Research shows that water diplomacy is the most effective approach in reducing the potential for conflict and strengthening cooperation between countries. Water diplomacy is a process of negotiation and dialogue aimed at reaching an understanding on the management of shared water resources without prioritizing the use of political pressure or military force (Pohl et al., 2014).

Through water diplomacy, countries can build sustainable cooperation mechanisms, such as the establishment of international river commissions, the exchange of hydrological data, joint research, and the development of early warning systems for water-related disasters. This approach allows countries to resolve differences of interest through constructive communication based on shared interests.

The success of various international river management organizations

demonstrates that sustainable cooperation can foster stability and reduce the risk of conflict. Therefore, water diplomacy needs to be continuously strengthened as part of implementing the principle of cooperation under international law.

6. Challenges and Prospects of International Law in Facing the Global Water Crisis

Although international law has provided a fairly adequate normative framework, its effectiveness still faces various challenges. One major challenge is the unequal participation of states in various international legal instruments governing transboundary water resources. Furthermore, international law enforcement mechanisms remain relatively weak, relying on states' willingness to comply with agreed-upon provisions (Loures & Rieu-Clarke, 2018).

Another challenge stems from climate change, which makes hydrological conditions increasingly unpredictable. These changes require adaptations to international legal instruments to remain relevant to current developments. Furthermore, increasing water demand due to population growth and economic development also requires more innovative and sustainable management approaches.

Going forward, international law needs to be continuously strengthened through increased cooperation between nations, the development of more effective dispute resolution mechanisms, and the strengthening of recognition of the right to water as a fundamental human right. Thus, international law will serve not only as a regulatory instrument but also as a means to achieve justice, sustainability, and peace in global water resource management.

CONCLUSION

The global water crisis is one of the most complex challenges facing the international community in the 21st century. Increasing water demand due to population growth, urbanization, industrialization, and the impacts of climate change have placed increasing pressure on the availability of global water resources. This situation not only creates environmental problems but also impacts economic, social, political, security, and human rights aspects. In the context of transboundary water resources, limited water availability has the potential to trigger conflicts between countries with differing interests in the use of the same water resources.

The research results show that international law has provided a fairly

comprehensive normative framework to regulate the management of transboundary water resources through various international legal instruments, particularly the 1997 Convention on the Law of the Non-Navigational Uses of International Watercourses. The Convention places the principle of equitable and reasonable utilization, the principle of no significant harm, and the duty to cooperate as the main foundations in international water resources management. These three principles aim to create a balance between a country's right to utilize water resources and its obligation to respect the interests of other countries sharing the same resources.

However, this study found that the effectiveness of international law in preventing and resolving transboundary water conflicts still faces various obstacles. Differing interests between upstream and downstream countries, imbalances in political and economic power, and weak international law enforcement mechanisms often hinder the implementation of international legal principles in practice. The various disputes surrounding the Nile, Indus, and Mekong Rivers demonstrate that the existence of international legal norms is not entirely capable of eliminating the potential for conflict without the support of political commitment and good faith from the countries involved.

This research also shows that international cooperation through a water diplomacy approach is the most effective mechanism for reducing the potential for conflict and achieving sustainable water resource management. Dialogue, consultation, information exchange, the establishment of joint management institutions, and peaceful dispute resolution have proven more effective in creating stability than unilateral approaches that prioritize national interests alone. Furthermore, developments in international law that increasingly recognize the right to water as a human right strengthen the obligation of states to ensure that water resource management is oriented not only toward national interests but also toward meeting the basic needs of the community.

Thus, it can be concluded that international law plays a crucial role in addressing the global water crisis and managing transboundary conflicts. However, its successful implementation depends heavily on states' commitment to comply with the principles of international law, strengthen cross-border cooperation, and prioritize the principles of justice, sustainability, and peace in the management of shared water resources. Therefore, strengthening international legal instruments, enhancing water diplomacy,

and developing more effective dispute resolution mechanisms are strategic steps to prevent conflict and ensure the sustainability of water resources for current and future generations.

REFERENCE

- Biswas, A. K., & Tortajada, C. (2019). Water crisis and water wars: Myths and realities. *International Journal of Water Resources Development*, 35(5), 727–731. <https://doi.org/10.1080/07900627.2019.1636502>
- Bulto, T. S. (2015). *The human right to water and sanitation*. Cambridge University Press. <https://doi.org/10.1017/CBO9781316152494>
- Dellapenna, J. W., & Gupta, J. (Eds.). (2020). *The evolution of the law and politics of water*. Springer. <https://doi.org/10.1007/978-94-017-9081-9>
- Loures, F. R., & Rieu-Clarke, A. (2018). *The UN Watercourses Convention in force: Strengthening international law for transboundary water management*. Routledge.
- Marzuki, P. M. (2021). *Legal research* (Rev. ed.). Kencana.
- McCaffrey, S. C. (2019). *The law of international watercourses* (3rd ed.). Oxford University Press.
- McIntyre, O. (2018). *Environmental protection of international watercourses under international law*. Routledge.
- Pohl, B., Kramer, A., Michel, D., & Schlacke, S. (2014). *The rise of hydro-diplomacy: Strengthening foreign policy for transboundary waters*. Springer.
- Rieu-Clarke, A., Moynihan, R., & Magsig, B. O. (2017). *UN Watercourses Convention user's guide*. UNESCO International Hydrological Programme.
- Salman, S. M. A. (2021). The Grand Ethiopian Renaissance Dam and the Nile Basin: Implications for transboundary water cooperation. *Water International*, 46(4), 595–611. <https://doi.org/10.1080/02508060.2021.1881368>
- Schmeier, S. (2018). *Governing international watercourses: River basin organizations and the sustainable governance of internationally shared rivers and lakes*. Routledge.
- Shaw, M. N. (2021). *International law* (9th ed.). Cambridge University Press.
- Soekanto, S., & Mamudji, S. (2019). *Normative legal research: A brief review*. Rajawali Pers.
- Tanzi, A., & Arcari, M. (2020). *The United Nations Convention on the Law of International Watercourses: A framework for sharing*. Brill Nijhoff.
- United Nations. (1997). *Convention on the law of the non-navigational uses of international watercourses*. United Nations.
- United Nations. (2024). *United Nations World Water Development Report 2024: Water for prosperity and peace*. UNESCO Publishing.
- United Nations Economic Commission for Europe. (2013). *Convention on the protection and use of transboundary watercourses and international lakes*. United Nations.
- United Nations General Assembly. (2010). *Resolution 64/292: The human right to water and sanitation*. United Nations.
- UNESCO. (2024). *United Nations World Water Development Report 2024: Water for prosperity and peace*. UNESCO Publishing. <https://www.unesco.org/reports/wwdr/2024/en>
- Wolf, A. T. (2017). *The transboundary freshwater dispute database project: Water conflict and cooperation*. Oregon State University.
- World Bank. (2023). *Water security and climate adaptation: Global challenges and policy responses*. World Bank Group. <https://www.worldbank.org/en/topic/water>

Zeitoun, M., & Warner, J. (2006). Hydro-hegemony: A framework for analysis of trans-boundary water conflicts. *Water Policy*, 8(5), 435–460.
<https://doi.org/10.2166/wp.2006.054>