



WATER DIPLOMACY AND SUSTAINABLE DEVELOPMENT GOALS (SDGs): STRATEGIC IMPLICATIONS FOR SUSTAINABLE DEVELOPMENT IN INDONESIA

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Abstract

This article discusses the strategic implications of water diplomacy for sustainable development in Indonesia, emphasizing its role in achieving the Sustainable Development Goals (SDGs). The research approach chosen is a qualitative method that incorporates case study analysis. This research uses primary and secondary data and is conducted with thematic analysis to identify, analyze, and describe reporting patterns in the data related to challenges, opportunities, and strategies in water diplomacy. The concepts of power and interdependence are adopted to understand this article. The results of the study show that water diplomacy is essential for Indonesia as a form of global water governance cooperation involving various parties to manage water effectively. The implications can contribute to the achievement of Sustainable Development Goals (SDGs) and promote world peace. The study emphasizes the importance of multi-level water governance and the involvement of state and non-state actors in water diplomacy, so Indonesia's participation in water diplomacy is critical to the UN 2030 Agenda, SDGs, and global security.

Keywords: Global Water Governance, Indonesia, Sustainable Development, Sustainable Development Goals (SDGs), Water Diplomacy

Introduction

Water is the source of life for civilization, an essential resource that shapes the destiny of nations (Hafezi et al., 2023). The Earth's surface is mostly covered by water, with about 71% of its total area being water. The majority of this water, approximately 97%, is found in the oceans and is salty. According to the IPCC report (IPCC, 2021), the proportion of freshwater on Earth is now estimated to be less than 2%, down from 2.5%, and less than 4% of the Earth's freshwater is accessible and usable for ecosystem functions and meeting the water resource needs of human societies (Shiklomanov, 1998). The impacts of climate change on the water cycle are non-linear and depend on various interconnected feedback mechanisms (IPCC, 2022). The concentration of greenhouse gases (GHGs) in the atmosphere and human-induced climate change directly impacts temperature, evapotranspiration, and rainfall patterns. These changes, in turn, affect water availability for human activities. Therefore, water is a critical issue that requires global attention and action, one of which can be through diplomacy.

In understanding global geopolitics and environmental sustainability, water emerges not only as a resource that must be managed but also as an important instrument of diplomacy and international cooperation (Krzyszowski, 2021). This is particularly true for Indonesia, as an archipelagic nation that emphasizes the centrality of water in its national narrative (Agastia, 2021; Kementerian Luar Negeri RI, 2023). The early 21st century brought about events that caused major changes in the dimensions of global security, directly related to water, in addition to increasing environmental challenges and climate change. Thus, it is crucial to consider water as a tool for struggle and cooperation (Krzyszowski, 2021). Principles such as interdependence and hegemony are directly linked to water issues, which can trigger conflict, even armed conflict.

This article adopts two research questions. First, what are the strategic implications of water diplomacy for Indonesia in achieving the Sustainable Development Goals (SDGs) and national and global security? This question emphasizes that water diplomacy, as a network of cooperation between states and non-state actors in the field of water, can contribute to the effectiveness of SDG implementation and promote world peace. Second, what role can Indonesia play in broader global security through water diplomacy? This raises a hypothesis about how Indonesia can transcend its national interests to contribute to and influence global discourse and actions on global security regarding water, an

intriguing dynamic in international relations. Salmoral et al. (2019) emphasize that everyone agrees on the role of diplomacy as fundamental, involving many actors, from states to non-state actors, and multilateral cooperation (Salmoral et al., 2019). Water diplomacy is crucial for the UN 2030 Agenda because it relates to the SDGs and global security. The UN has categorized water as the most significant global challenge in recent decades (United Nations Water, 2018). According to the UN report, more than 2 billion people will face severe water shortages. This is due to the increasing impacts of the climate crisis, and a large migration of up to 700 million people is predicted. These phenomena will directly affect international policy and structures.

The water crisis in Indonesia is diverse, ranging from access to clean water to ineffective irrigation systems, exacerbated by river pollution, particularly in rapidly developing urban centres. These challenges are not only logistical or environmental but also related to social-economic dimensions, affecting the most vulnerable segments of society. The urgency of this crisis cannot be ignored, as water scarcity and pollution directly impact public health, agricultural productivity, and overall socio-economic stability (Anwar et al., 2020). Furthermore, the water crisis in Indonesia is a microcosm of a larger global narrative – where access and water quality increasingly become the axis and engine for international diplomacy and cooperation (Nicollier et al., 2022). This article presents a new approach to water diplomacy, also framing it as part of modern diplomacy. Diplomacy builds a global network of interdependencies that then work together to strengthen strategic relationships in facing challenges at the bilateral, regional, and global levels related to water (Hare, 2016). This interdependent network consists of many parties, such as states, international organizations, local governments, social groups, civil society organizations, think tanks, researchers, and business groups. This study also recognizes the evolving nature of international water diplomacy. In recent years, there has been a paradigm shift in how water issues are addressed globally. From technical and environmental management problems, water has become a central theme in discussions on human rights, sustainable development, and even security. This shift is evident in various international platforms, from the UN's Sustainable Development Goals (SDGs) to regional cooperation frameworks in Asia and beyond. Therefore, Indonesia's involvement in water diplomacy must be aware of and responsive to this global cooperation trend, and the international community must recognize the importance of

water for sustainable development, peace, and international security (United Nations, 2018).

The aim of this research is to explore the role and importance of a strategic approach for Indonesia in water diplomacy to address global challenges, specifically the implementation of SDGs that contribute to the enforcement of global water justice. Thus, this research aligns with the growing recognition of water diplomacy as an essential tool in international relations and environmental governance. The concept of water diplomacy, which includes various activities ranging from transboundary water management to advocacy for global water rights, offers a promising way for countries like Indonesia to not only address their water challenges but also enhance their diplomatic status and influence in the international arena.

Methodology

The author uses research data from 2014-2024, discussing events, projects, and strategies related to water diplomacy. This research adopts a qualitative approach based on literature, using both primary and secondary data sources, with a focus on case study analysis and policy document reviews. This methodology is designed to provide a comprehensive understanding of the water-related issues in Indonesia and its diplomatic efforts to address them, both domestically and internationally.

To address the issues discussed in this research, the author uses case studies based on their relevance to Indonesia's water challenges and the potential lessons they provide for water diplomacy, as well as reviewing both successful and challenging water diplomacy initiatives from within the Asia and Africa regions. This comparative analysis will offer insights into the factors contributing to the success or failure of water diplomacy initiatives, which could be applied to Indonesia. The author examines the involvement of various actors, both state and non-state actors. The study also analyzes the role of the United Nations (UN) as an organization that has adopted the SDGs and is also involved in water diplomacy.

The case studies used are analytical and empirical in nature, making it important to employ a qualitative method aimed at explaining and interpreting causal relationships. Data collected from the case studies and document reviews will be analyzed using thematic analysis, as described by Fereday & Muir-Cochrane (2006). This analysis will

involve identifying, analyzing, and reporting themes within the data (Fereday & Muir-Cochrane, 2006). These themes will be related to challenges, opportunities, and strategies in water diplomacy, specifically tailored to the context of Indonesia. The concepts of power and interdependence are adopted to understand this article.

Literature Review

Essentially, water diplomacy refers to the process of managing water resources that cross national boundaries, with the goal of creating conditions that support peace, welfare, and sustainability (Ganoulis, 2023; Keskinen et al., 2021; Ramawadh et al., 2023). In this context, water management is viewed not only as a technical matter but also as a form of strategic cooperation that links various countries in addressing shared challenges related to the use of water resources. In recent literature, water diplomacy is seen more broadly, combining security and social welfare in water resource management. Vij et al. (2020) mention that water diplomacy involves not only countries that share water resources but also political actors that influence the transnational distribution of water, prioritizing water security at both the global and local level. Water diplomacy is defined as a form of international cooperation aimed at avoiding conflicts and ensuring the fair distribution of water resources (Vij et al., 2020). One example of an international agreement that underpins water diplomacy is the United Nations Watercourses Convention, which regulates the principles of equitable water distribution and does not harm other parties (United Nations, 1997).

Water diplomacy is also closely related to the achievement of the Sustainable Development Goals (SDGs), particularly SDG 6, which emphasizes the importance of access to clean water and the sustainable management of water resources. Salmoral et al. (2019) suggest that water diplomacy should integrate various sectors, including energy and food, through a nexus approach, to create better sustainability in the management of transboundary water resources. Countries involved in water diplomacy should promote international cooperation to achieve sustainable water use and reduce inequalities in access to clean water worldwide. Klimes et al. (2019) also reveal that water diplomacy should not only focus on technical aspects but also consider the political and social factors that influence joint decision-making in water resource management.

The process of water diplomacy can be carried out through various steps and approaches, such as multilateral negotiations, international mediation, and technical cooperation. Tomalová et al. (2020) explain the importance of multi-track diplomacy, which involves multiple levels of negotiations between countries, international institutions, and civil society, to create more coordinated and comprehensive solutions in transboundary water management (Young et al., 2020). For example, countries in the Brahmaputra River basin have used this approach to enhance regional cooperation in sustainable water management. This approach also supports the importance of technical cooperation between countries in monitoring and managing both the quality and quantity of available water. Countries that share water resources must collaborate in the exchange of data, technology, and experience related to water management to ensure the sustainability of its use. As pointed out by Sehring et al. (2023), international mediation processes, such as those conducted by the UN, can play a crucial role in resolving conflicts related to transboundary water management, such as in the case of the Nile River between Egypt, Sudan, and Ethiopia.

Water diplomacy must be integrated into national development policies. Water diplomacy should be part of development policies that support SDG goals, such as the provision of clean water, efficient water management, and addressing climate change impacts on water resources. The water diplomacy nexus approach is becoming increasingly important in this context because it includes the interconnection between water, energy, and food, which are key factors in achieving sustainable development. Therefore, water diplomacy is not only key to addressing political disparities in the management of water resources but is also crucial in supporting sustainable development by ensuring both economic and social sustainability worldwide (Salmoral et al., 2019; Sehring et al., 2022).

Concept of Indonesia's Water Diplomacy in the Context of SDGs and Global Security

Water diplomacy is one of the important instruments in the management of transboundary water resources. In the context of international water management, water diplomacy aims to ensure fair and sustainable access to water among countries that share water resources, whether rivers, lakes, or aquifers. This diplomacy is also closely related to water security, which includes the availability, access, and quality of water to support human life, food

security, and economic sustainability. Therefore, water security becomes one of the aspects that must be maintained through international cooperation to ensure not only the sufficient availability of water but also fair and efficient management (Gain, 2024; Salmoral et al., 2019). In this regard, water diplomacy must prioritize both technical and political and social aspects in resolving shared issues faced by countries that share water resources.

One of the most relevant concepts in water diplomacy is human security, which focuses on basic human needs, including access to clean water. Human security emphasizes the importance of fair water distribution to ensure the continuity of human life across countries (Schneider & Mozumder, 2025). Human security also encompasses water management that can address inequalities in distribution and ensure that every individual has equal access to this vital resource (Susskind, 2013). In this context, water diplomacy plays a key role in maintaining social and political stability, which is built on the foundation of justice in the management of transboundary water resources (Rodrigues et al., 2025).

Managing transboundary water resources, hydro-hegemony is a concept that illustrates how countries with greater political or economic power often dominate the allocation and use of water (Vij et al., 2020; Zeitoun & Warner, 2006). This concept examines the inequality in the relationships between countries that share international rivers or lakes, where dominant countries can influence water agreements and the distribution of water resources for their own benefit. The hydro-hegemony theory, developed by Zeitoun & Warner (2006), provides a useful perspective in understanding the power dynamics in the management of transboundary water resources. In the context of Indonesia, this is crucial for analysing how larger countries in Southeast Asia may influence Indonesia's water diplomacy and the smaller countries around it.

The concept of the water-energy-food nexus becomes increasingly relevant in the context of a more holistic water diplomacy approach. This approach links three crucial interdependent sectors: water, energy, and food (Ganoulis, 2023; Hafezi et al., 2023; Salmoral et al., 2019; Scott, 2019). These sectors cannot be separated, as effective water management also impacts the energy and food sectors, both of which are heavily reliant on water resources. Therefore, in transboundary water management, it is essential for countries sharing resources to integrate water management policies with energy and food

policies to create better sustainability (Salmoral et al., 2019). This nexus approach is important to consider in Indonesia's water diplomacy, as these three sectors play a vital role in sustainability and sustainable development.

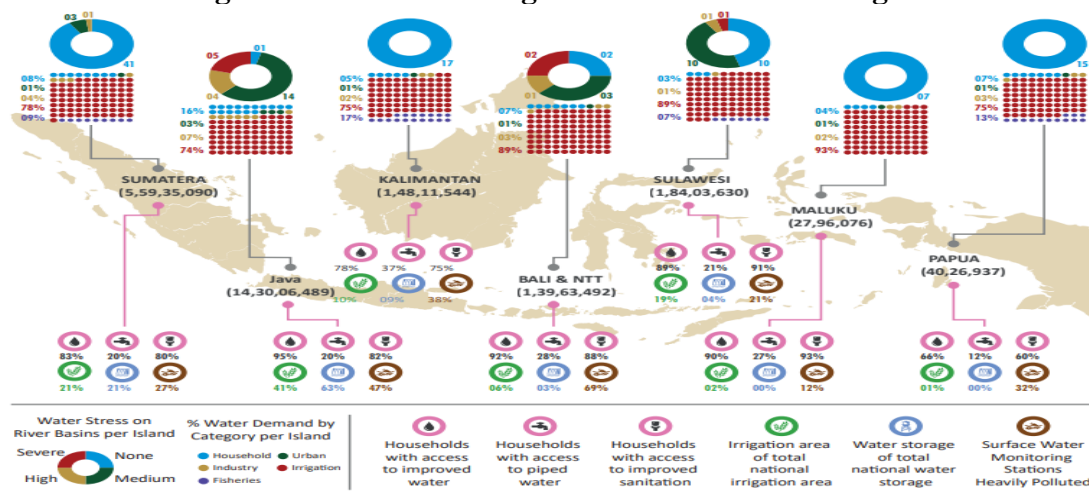
Multilateral cooperation in the management of transboundary water resources is also a highly important concept. Multilateral cooperation involves countries that share water resources agreeing on common regulations that govern the fair and sustainable use of water. International agreements such as the UN Convention on the Law of Non-Navigational Uses of International Watercourses provide the legal basis for the distribution of water resources among countries sharing international rivers or lakes. Indonesia must be active in international forums, whether through ASEAN or other international institutions, to ensure that transboundary water management is conducted with attention to social justice and sustainability.

Result and Discussion

The Issues and Challenges of Water Resource Management in Indonesia

The escalating water crisis due to climate change is affecting Indonesia, which faces serious challenges related to water scarcity and quality. As an archipelagic country with more than 17,000 islands, Indonesia has geographical and water management challenges that differ across its regions. Climate change has worsened the situation by causing extreme rainfall variability and exacerbating water scarcity in various areas. In addition, rapid population growth and urbanization are placing increasing pressure on the availability of clean water. According to reports from the World Bank and the Ministry of National Development Planning/Bappenas (2021), regions such as Java, Bali, and East Nusa Tenggara (NTT) face severe water stress, while Papua, Kalimantan, and Sumatra struggle with access to clean water and the management of Water, Sanitation, and Hygiene (WASH). The following figure provides a visualization of water challenges across different regions of Indonesia, including water stress, access to clean water, sanitation, irrigation, and water storage.

Figure 1- Water Challenges Across Indonesia's Regions



Source: World Bank & Ministry of National Development Planning (Bappenas) Indonesia (2021)

The figure illustrates that nearly all regions in Indonesia are facing severe water pollution, with Java, Bali, NTT, and Kalimantan being the most affected areas. Java and Sumatra, which serve as the central hubs for the national rice production and storage, face high water stress due to the high demand from the household, industrial, and irrigation sectors. On the other hand, regions like Papua and Kalimantan experience limitations in access to adequate clean water services and sanitation. This situation underscores the need for a comprehensive and flexible approach to water management in Indonesia.

In addition to domestic challenges, climate change also poses additional risks, such as increased frequency of droughts and floods, which exacerbate rainfall variability and water scarcity in many regions (Cordeiro et al., 2023; Yıldız, 2015). These challenges become more complex due to severe river pollution in major cities, such as Jakarta and Surabaya, as well as the low percentage of households with access to clean water, which stands at only 11.8% nationally (Kementerian Kesehatan RI, 2023). These factors indicate that Indonesia cannot tackle these challenges independently and requires international cooperation to support sustainable water resource management.

Water diplomacy can be a crucial strategy. Water diplomacy allows Indonesia to strengthen international cooperation, both regionally and globally, to manage transboundary water resources fairly and sustainably. For example, Indonesia has partnered with the Netherlands through the WaterWorX program, aimed at providing sustainable drinking water access for millions of people, including in Indonesia (Government of Netherlands, 2023). Indonesia has partnered with USAID through the

Global Water Strategy Indonesia High Priority Country Plan, which invests over 50 million USD to improve access to safe, sustainable drinking water and sanitation, and resilience to climate change by 2027 (USAID, 2023). This cooperation not only strengthens Indonesia's capacity to address domestic challenges but also enhances the country's credibility at both regional and global levels.

The figure highlights that water diplomacy plays a key role in supporting the achievement of SDG 6 (Clean Water and Sanitation) and other SDGs. Through international cooperation, Indonesia can expand access to clean water, improve sanitation quality, and promote sustainable water management, which will ultimately support social, economic, and environmental sustainability. Therefore, integrating water diplomacy with domestic policies becomes a strategic step to address challenges and seize opportunities in water management in Indonesia.

Water conflicts emerging in regions like Africa, the Middle East, and Asia have demonstrated the importance of water diplomacy in addressing geopolitical and geoeconomic issues between countries sharing water resources (Krzymowski, 2021; Ramawadh et al., 2023; Sehring et al., 2022). Examples of such conflicts show how the lack of international cooperation can escalate tensions and affect access to clean water, which is a basic human need. In the context of Indonesia, although it has not yet faced similar transboundary conflicts, the challenges of water management within the country and in Southeast Asia demand a greater role in water diplomacy. Indonesia has forged cooperation with the Netherlands through the WaterWorX program, which aims to provide sustainable drinking water access for millions, including in Indonesia. The Global Water Strategy program, managed by USAID, is a strategic step to improve clean water and sanitation access domestically. By learning from water conflicts in other regions, Indonesia can play a key role in developing regional cooperation through forums like ASEAN. This water diplomacy can help prevent future transboundary conflicts while ensuring fair and sustainable management of water resources.

Opportunities for International Cooperation

Indonesia's involvement in international water diplomacy presents significant opportunities to address domestic water challenges while simultaneously strengthening its international image. In the context of water management and mitigation efforts,

Indonesia has formed strategic collaborations with countries like the Netherlands, the United States, and international organizations such as the United Nations. These partnerships serve as an important platform to expand bilateral and multilateral relations, facilitating the exchange of technology and knowledge, which can help Indonesia improve its complex water governance capacity. By adopting a global approach, Indonesia also leverages water as a platform for international collaboration, which is increasingly relevant in addressing global challenges related to water scarcity and sustainable water management (Yıldız, 2015).

Collaboration with the United Nations through the Water Scarcity Program under the United Nations Food and Agriculture Organization (FAO) is a tangible example of Indonesia's water diplomacy, focused on technical assistance and policy. This program supports countries, including Indonesia, in managing water use in the agricultural sector sustainably and productively, particularly amidst increasing water scarcity. Moreover, the program emphasizes the achievement of SDGs 2 (Zero Hunger) and SDG 6 (Clean Water and Sanitation), which are highly relevant to Indonesia's national needs (Global Water Partnership, 2023b, 2023a).

The UN programs, other international bodies such as UNEP, UNDP, UNESCO, WHO, FAO, and UNIDO play an active role in supporting solutions for global water governance issues. These agencies have adopted the Comprehensive Assessment of the Freshwater Resources of the World, which serves as the standard for global water resource assessment (United Nations Economic and Social Council (ECOSOC), 1997). Coordination among these bodies is facilitated by the Global Water Partnership, established in 2002 to promote cross-country cooperation and international organizations through United Nations Water (UN Water) (Global Water Partnership, 2023a). The existence of these bodies demonstrates that water management is not only a domestic issue but also a key element in global diplomacy, with water being an essential and crucial sector for international cooperation (Guntay, 2023).

Currently, the international community is increasingly aware of the importance of global cooperation in water-related matters (United Nations Water, 2018). Indonesia also acknowledges that the water challenges it faces cannot be solved independently but require closer international collaboration. This opportunity for international cooperation positively impacts various layers of society, including civil society organizations,

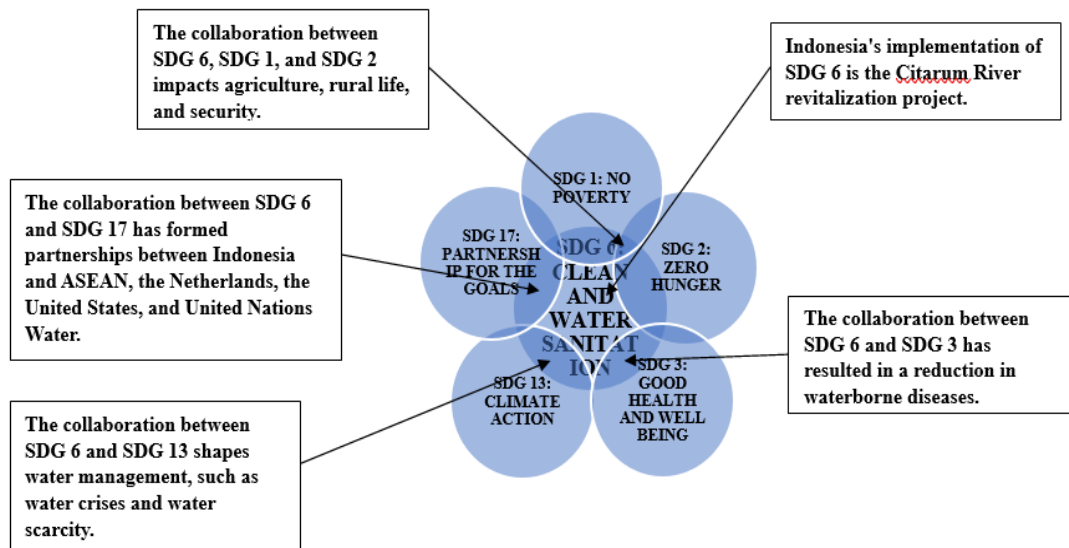
international organizations, and governments as the main initiators. The potential impact of water diplomacy includes innovative solutions, economic projects, and efficient global platforms to address water challenges (Hare, 2016; Krzymowski, 2021). Challenges remain in optimizing international cooperation. Some UN bodies and global cooperation forums still face barriers, such as limited activities and responsibilities that are entirely dependent on member countries (Matthews & Vivoda, 2023). The dynamics of international relations, which include interdependence, rapid changes, and the difficulty of predicting new dynamics, present challenges for Indonesia's water diplomacy. Therefore, a more flexible, comprehensive, and strategic approach is needed to capitalize on these international cooperation opportunities.

Within the context of ASEAN, Indonesia has the potential to lead regional cooperation in transboundary water management, which can strengthen its position both regionally and globally. Such cooperation not only strengthens national efforts in water management but also helps create sustainability, improve technological capacity, and contribute to the broader achievement of the SDGs. With an integrated water diplomacy strategy, Indonesia can serve as an example for other countries in utilizing international cooperation to tackle domestic challenges while strengthening global stability in water governance.

Sustainable Development for Indonesia

Water diplomacy is a crucial element in achieving the Sustainable Development Goals (SDGs) due to its multidimensional role in supporting sustainability across various sectors. Water, as a vital resource for life, is not only linked to SDG 6 (Clean Water and Sanitation) but also contributes to several other SDGs, such as SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 3 (Good Health and Well-being), SDG 13 (Climate Action), and SDG 17 (Partnerships for the Goals). Effective water management through water diplomacy has a significant impact on food security, public health, poverty alleviation, and climate change mitigation. This makes water diplomacy an essential instrument for supporting sustainable socio-economic development (Krzymowski, 2021; Salmoral et al., 2019). The following Venn diagram illustrates the relationship between SDG 6 and other SDGs, showing how sustainable water management affects various development sectors:

Figure 2 - Venn Diagram Showing the Relationship between SDG 6 and other SDGs.



Source: adapted by the author.

Collaboration among SDGs is a key element in supporting Indonesia's water diplomacy strategy. For example, collaboration between SDG 6 (Clean Water and Sanitation) and SDG 2 (Zero Hunger) supports the agricultural sector by providing sufficient water for irrigation, thereby supporting the livelihoods of rural communities. In SDG 3 (Good Health and Well-being), easy access to clean water helps reduce the risk of waterborne diseases, such as diarrhea, which are prevalent in areas with limited access to sanitation. Meanwhile, the collaboration between SDG 6 and SDG 13 (Climate Action) provides mitigation solutions to the impacts of climate change, such as droughts and floods, through better water management (United Nations, n.d.).

Indonesia's water diplomacy has become a strategic tool to support sustainable development both domestically and internationally. At the regional level, Indonesia has been involved in ASEAN agreements related to cross-border haze pollution, which indirectly supports the management of water resources in the region. Furthermore, bilateral cooperation with the UK and the Netherlands on the management of river basins in Kalimantan serves as a concrete example of cross-country collaboration that contributes to regional water security and aligns with SDG 17 (Partnerships for the Goals) (Hendrizen et al., 2023). Domestically, initiatives such as the Citarum River revitalization project underscore Indonesia's commitment to sustainable water management and directly contribute to SDG 6 (Laituri, 2020).

Despite various initiatives, challenges in implementing water diplomacy remain. The political complexity in managing transboundary water often acts as a barrier, especially when the countries involved have conflicting interests. Economic constraints, such as funding for large-scale water projects, also pose a challenge, particularly when financing new technologies required for efficient and sustainable water management. Environmental challenges, such as deforestation and rainfall variability caused by climate change, further complicate efforts to uniformly achieve SDGs across Indonesia's regions.

To address these challenges, a multifaceted water diplomacy strategy is needed. Politically, building regional cooperation through ASEAN and other international platforms is a crucial step to ensure fair and sustainable transboundary water management. Economically, Indonesia can leverage public-private partnerships to fund large-scale projects, as seen in its collaboration with the Netherlands through the WaterWorX program (Government of Netherlands, 2023). Environmentally, an integrative approach that combines traditional knowledge with modern technologies can provide resilient solutions for water management challenges across various regions. Additionally, a decentralized approach to water management allows local communities to directly engage in the process, ensuring that their specific needs are met (Umami et al., 2022).

Through water diplomacy, Indonesia can integrate these strategies to create a flexible, cohesive, and effective approach to support the achievement of SDGs. By strengthening regional and international cooperation, encouraging technological innovation, and prioritizing community-based approaches, Indonesia can not only address domestic water challenges but also make a significant contribution to the global SDG agenda (Global Water Partnership, 2023a; Scott, 2019; World Bank & Ministry of National Development Planning (BAPPENAS) Indonesia, 2021). Integrated water diplomacy also offers a roadmap for sustainable development, connecting environmental management with social and economic progress (Agastia, 2021; Wahyuningrum et al., 2023). With a comprehensive strategy that capitalizes on opportunities in water management, Indonesia can become a model for successful sustainable development in Southeast Asia and globally.

National and Global Security

Water diplomacy is a crucial element in achieving the Sustainable Development Goals (SDGs) due to its multidimensional role in supporting sustainability across various sectors. The importance of water in national and global security cannot be overlooked, especially for archipelagic countries like Indonesia, which is highly vulnerable to water-related issues. Water, as a vital resource, has a complex relationship with various dimensions of security, ranging from public health to economic and social stability. Insufficient water resources can lead to social unrest, economic instability, and even interstate conflict, particularly in regions that share transboundary water resources (Sehring et al., 2022). Moreover, Indonesia's geographical position as a maritime nation with numerous transboundary rivers exacerbates water security challenges, both domestically and regionally (Anwar et al., 2020; Ganoulis, 2023).

In this context, water diplomacy becomes a strategic tool for managing water security challenges, both within the country and in international relations. Water diplomacy allows countries to use diplomatic means to resolve water-related conflicts and ensure the fair and sustainable distribution of water resources (Mguni et al., 2022; Ramawadh et al., 2023; Sehring et al., 2022). For Indonesia, water diplomacy is becoming increasingly important due to domestic challenges such as water rights disputes, limited access to clean water, and the impacts of climate change on water availability. These challenges are not only public health or environmental issues but also directly impact national security.

Indonesia's involvement at both the regional and global levels strengthen its position in addressing water security challenges. For example, at the regional level, Indonesia's active role in ASEAN is vital for promoting transboundary cooperation regarding the management of shared water resources, particularly in Southeast Asia, which shares several transboundary rivers. At the bilateral level, Indonesia's cooperation with countries such as the Netherlands and the United States demonstrates how water diplomacy can improve domestic water management infrastructure. For instance, the WaterWorX program with the Netherlands aims to increase access to clean water, while cooperation with USAID through the Global Water Strategy program supports the strengthening of clean water and sanitation sectors in Indonesia (Government of Netherlands, 2023; USAID, 2023).

However, water diplomacy is not without challenges. National interest conflicts, infrastructure limitations, and the impacts of climate change remain major obstacles to the implementation of water diplomacy. This complexity is further exacerbated by the limited coordination between sectors and countries, which often complicates the achievement of effective agreements. For example, climate change increases uncertainty in water distribution patterns, which risks triggering conflicts over the availability and distribution of water in specific regions (Ganoulis, 2023; Salmoral et al., 2019).

Indonesia can take strategic steps by strengthening domestic policies and water management infrastructure, including investments in sustainable technologies and practices. Additionally, active participation in regional and global water diplomacy initiatives is essential to create fair and sustainable solutions. Cooperation, such as that achieved through ASEAN, and efforts to lead dialogues and transboundary agreements, enable Indonesia to make significant contributions to regional stability and security. Looking ahead, water diplomacy will become an increasingly important tool in addressing global challenges such as climate change, water scarcity, and resource-related conflicts. By prioritizing integrated water diplomacy aligned with domestic and regional policies, Indonesia can play a key role in mitigating potential conflicts and fostering sustainable security. Furthermore, Indonesia's role in water diplomacy can strengthen inter-state relations, create global stability, and ensure national well-being. This strategy will not only enhance national security but also position Indonesia as a model for other countries in managing transboundary water resources.

Conclusion

Water diplomacy is a highly relevant strategic tool that supports Indonesia's efforts to address both domestic and global challenges related to water resource management. As an archipelagic country with diverse geographic, social, and environmental challenges, Indonesia faces serious issues such as water scarcity, pollution, inequitable distribution, and the impacts of climate change. These challenges not only affect public health, but also have significant consequences for economic stability and national security.

Through active involvement in both bilateral and multilateral cooperation, such as the WaterWorX program with the Netherlands, Global Water Strategy with USAID, and regional initiatives within ASEAN, Indonesia demonstrates a strong commitment to

utilizing water diplomacy as a means to strengthen water governance, ensure sustainability, and support the achievement of the Sustainable Development Goals (SDGs), particularly SDG 6 (Clean Water and Sanitation). Water diplomacy also contributes to other SDGs, including poverty alleviation (SDG 1), food security (SDG 2), public health (SDG 3), climate change mitigation (SDG 13), and global partnerships (SDG 17).

However, these efforts in water diplomacy are not without challenges, such as national interest conflicts, infrastructure limitations, and the increasingly complex impacts of climate change. To overcome these barriers, Indonesia requires a multifaceted approach that includes strengthening domestic policies, investing in sustainable technologies, integrating traditional knowledge with modern innovations, and developing public-private partnerships. This approach will enable Indonesia to enhance its capacity to manage water resources fairly and efficiently, both domestically and internationally.

Water diplomacy will not only serve as a solution to water management challenges but also become an important instrument for enhancing global stability, national security, and sustainable development. This article is conceptual and does not yet include in-depth empirical analysis regarding the success of Indonesia's water diplomacy at the domestic or global level. The quantitative impact of bilateral and multilateral cooperation has also not been discussed in detail. Furthermore, the political barriers in transboundary water diplomacy, such as those in the ASEAN region, still require further exploration. Empirical research is needed to complement this discussion, particularly in evaluating the impact of water diplomacy on achieving SDGs and national security.

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