Journal of Human Rights and Peace Studies

journal homepage: https://www.tci-thaijo.org/index.php/HRPS/index

The Mekong River Commission's Water Diplomacy Framework in Managing Transboundary Water Tensions: An Empirical Analysis of the Chinese Dam Cascade and the Laotian Xayaburi Dam

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ARTICLE INFO

Article History:

Received: 31-Dec-22024

Revised: 28-Feb-2025

Accepted: 19-Apr-2025

Keywords:

water diplomacy, Mekong River Commission, transboundary water tensions, China, Laos

ABSTRACT

Transboundary water governance in the Mekong River Basin presents complex challenges for regional cooperation between riparian states as hydropower development and climate change intensify pressures on shared water resources. The Mekong River Commission (MRC) employs water diplomacy as a key framework for managing these transboundary water tensions. Current scholarship debates water diplomacy's effectiveness, some scholars emphasizing its potential for trust-building and cooperation, while others caution against oversimplification of water disputes in broader political contexts. This article aims to identify and understand how the MRC deploys its water diplomacy framework through two cases: the Chinese dam cascade on the Upper Mekong River and the Laotian Xayaburi Dam on the Lower Mekong Mainstream. Using documentary research and qualitative content analysis of official MRC records, policy reports, and academic literature from 2010-2024, this article reveals that the MRC adapts its water diplomacy framework based on the specific context and relationship with involved parties. With China as a dialogue partner, the MRC developed incremental, technically-focused cooperation centered on data-sharing agreements, while with Laos, a member state, the MRC employed more structured consultation processes. Despite achieving incremental improvements in both cases, the MRC's effectiveness remains constrained by limited enforcement authority and sovereign priorities.

ISSN (Online): 2697-3804

This article contributes to peace-building and water diplomacy by demonstrating how power asymmetries between upstream and downstream countries influence diplomatic approaches and how regional organizations navigate the tension between national sovereignty and regional cooperation.

Introduction

Transboundary basins are river, lake, and aquifer systems across two or more countries (UN-Water, 2024). They present complex regional cooperation and conflict prevention challenges, particularly in Asia, where rapid development and climate change intensify pressures on shared water resources. Spanning six countries, the Mekong River Basin (MRB) exemplifies these challenges as hydropower development and changing water flows create tensions between riparian states. For example, upstream water retention has weakened the Tonle Sap Lake's seasonal flood cycle, with river gauge data indicating that wet-season water levels are approximately two meters below average (Rosslan & Hobbs, 2024). Meanwhile, Vietnam's Mekong Delta has experienced unprecedented drought and saltwater intrusion, affecting over 95,000 families and damaging 40,000 hectares of rice paddies (Hoang, 2020).

The Mekong River Commission (MRC) has emerged as a key actor in promoting cooperation and sustainable development among its member states—Thailand, Laos, Cambodia, and Vietnam—and between member states and dialogue partners, China and Myanmar. As the primary intergovernmental organization in the Lower Mekong Basin, the MRC employs water diplomacy to manage transboundary water tensions and foster collaborative solutions. While water diplomacy can potentially prevent conflicts and manage tensions, its effectiveness has been debated among scholars. Some demonstrate how environmental cooperation can facilitate symbolic peace and trust-building through institutional mechanisms, while others caution against oversimplifying water disputes that involve complex political, cultural, and economic dimensions beyond mere resource allocation (Ide, 2018; Link et al., 2016). Within the MRB context, these debates take on particular significance given the complex power dynamics between upstream and downstream states and the increasing pressures from hydropower development, climate change, and competing national interests (Giovannini, 2018; Hensengerth, 2015; Kittikhoun & Staubli, 2018).

This article addresses a critical question in Mekong water governance: How does the MRC employ water diplomacy to manage transboundary water tensions in the MRB? It argues

that the MRC adapts its water diplomacy framework by employing different legal, institutional, and strategic mechanisms based on the specific context and relationships with involved parties, demonstrating flexibility in its approach while revealing the potential and limitations of water diplomacy in the MRB.

Objective

This article aims to identify and understand how the MRC deploys its water diplomacy framework through two cases: the Chinese dam cascade on the Upper Mekong River and the Laotian Xayaburi Dam on the Lower Mekong Mainstream.

Literature Review: Water Diplomacy and Transboundary Water Governance

Conceptualizing Water Diplomacy

Water diplomacy can be defined as "the elevation of water issues to a foreign policy domain" (Zhang & Li, 2020). This conceptualization represents a shift from viewing water primarily as a technical or environmental concern to recognizing its geopolitical dimensions. Mirumachi (2020) emphasizes that water diplomacy aims to prevent conflicts and enhance peace through the cooperative management of shared water resources. Sehring et al. (2022) characterize water diplomacy as involving "deliberative political processes and the development of joint water governance arrangements by applying foreign policy means which are embedded in bi- and multilateral relations beyond the water sector and operating at different tracks and scales." This approach distinguishes water diplomacy from purely technical forms of cooperation, as water diplomacy emphasizes political engagement between riparian states (Smith & Winterman, 2022).

A key component identified in the literature is using scientific data, assessments, and knowledge to inform negotiations. Kittikhoun and Staubli (2018) and Mirumachi (2020) highlight how these knowledge-based elements are implemented through legal, institutional, and strategic mechanisms to facilitate cooperation over shared water resources. This integration of scientific knowledge with diplomatic practice represents a distinctive feature of water diplomacy compared to traditional diplomatic approaches. Another defining characteristic of water diplomacy is its recognition of diverse actors beyond the traditional state-centric approach to international

relations. The literature acknowledges the involvement of states, multinational corporations, non-governmental organizations, civil society groups, and regional and international organizations in water diplomacy. Studies show that third parties can contribute positively to mediation efforts due to lower sovereignty costs (Fausett & Volgy, 2010; Lundgren, 2015). For instance, the United Nations has been identified as a driving force in promoting water diplomacy as an important policy instrument for resolving transboundary water problems (Zhang & Li, 2020). This global endorsement has led to increased attention from national governments, with countries such as China incorporating this concept into their official documents (Zhang & Li, 2020).

Building on these foundations, scholars highlight that the strategic dimensions of water diplomacy go beyond crisis management and conflict prevention. Zhang and Li (2020) argue that water diplomacy plays a role in advancing broader foreign policy objectives, including improving regional security and stability, promoting regional integration, managing water resources, boosting trade relations, and expanding geopolitical influence. This perspective positions water diplomacy not merely as reactive to water-related tensions but also as a proactive tool within a state's broader diplomatic toolkit that can advance multiple foreign policy goals.

The Effectiveness Debate in Water Diplomacy

The effectiveness of water diplomacy has been a subject of debate among scholars. A significant body of literature suggests that environmental cooperation, including water diplomacy, can contribute to peacemaking under certain conditions. Ide (2018) identifies three forms of peace (absence of violence, symbolic rapprochement, and substantial integration) and four mechanisms connecting environmental cooperation to peace. The most effective mechanism is building institutions and increasing understanding and trust. He concludes that environmental peacemaking can be effective when high-intensity conflict is absent, external support is available, and locally accepted environmental knowledge exists.

However, critical perspectives caution against oversimplifying the relationship between water cooperation and conflict prevention. Link et al. (2016) argue that water conflicts rarely center solely on water allocation but involve complex political, social, economic, and cultural factors. They demonstrate that "simply making more water available" cannot resolve conflicts, as seen in the Israeli-Palestinian water dispute. Similarly, Selby (2003) argues that a lack of conflict in a basin does not necessarily indicate willful cooperation between riparian nations; instead, it may reflect a regional hegemon's assertion of control, which presents domination as cooperation.

The institutional dimension of water diplomacy has received particular attention in recent scholarship. Smith and Winterman (2022) emphasize that purely technical approaches to water governance are insufficient for preventing conflict. They argue that effective water diplomacy requires both robust technical and political engagement across governance structures. Williams (2020) provides a specific case study of this dynamic in the MRB by examining how the introduction of the Chinese-led Lancang-Mekong Cooperation (LMC) might alter relationships between existing institutions. Williams cautions that the LMC could marginalize other institutions, such as the MRC, and institutionalize China's position as a basin hegemon, potentially exacerbating upstream tensions. A contrasting perspective on China's role in Mekong water diplomacy comes from Zhang and Li (2020), who document what they characterize as a paradigm shift in China's approach. They argue that China has moved from being perceived as a "malevolent water hegemon" to adopting a more cooperative water diplomacy strategy.

The debate around treaties and agreements further illustrates the complexity of water diplomacy's effectiveness. Wolf et al. (2003) observe that basins without treaties are "significantly more conflict-ridden than basins with treaties." Nevertheless, Smith and Winterman (2022) note that many treaties lack specific conflict resolution mechanisms, limiting their effectiveness in preventing conflicts. This limitation is evident in the case of the Nile Basin, where despite the 2015 Agreement on Declaration of Principles, disagreements over the Grand Ethiopian Renaissance Dam continue to cause friction between Ethiopia, Egypt, and Sudan (Krzymowski, 2021).

Water Diplomacy and Its Implications for Sustainable Development and Peace

The relationship between water diplomacy, sustainable development, and peace has become increasingly evident as global challenges such as climate change, population growth, and resource scarcity continue to intensify. Water diplomacy serves as a mechanism for preventing and managing conflicts through cooperative management of transboundary waters while supporting sustainable development goals (SDGs). By elevating water issues to the realm of foreign policy, water diplomacy enables riparian states to engage in deliberate political processes that can transform potential sources of conflict into opportunities for cooperation.

The emphasis on scientific data and knowledge in water diplomacy aligns with the "well-defined procedures for consultation on transboundary water agreements" in SDG 16.3 and "integrated water resources management" in SDG 6.5. This evidence-based approach supports

SDG 6 on clean water and sanitation by fostering transboundary cooperation over shared water resources and facilitating economic and technical assistance for water and sanitation projects. When stakeholders make decisions informed by shared hydrological data, they reduce the likelihood of disputes escalating into conflicts. Moreover, gathering and sharing hydrological data creates opportunities for technical cooperation between states, building trust and establishing channels for dialogue even in politically tense situations. In this way, water diplomacy strengthens SDG 16's broader goals of peace and strong institutions by providing avenues for cooperation.

The critical role of water diplomacy in preventing conflicts is particularly evident in regions where water scarcity threatens stability. Transboundary waters serve over three billion people across 153 countries, making cooperative management essential for regional peace (UN-Water, 2024). The urgency of effective water diplomacy is underscored by projections that water scarcity, exacerbated by climate change, could displace an estimated 700 million people by 2030, potentially triggering or intensifying conflicts over limited resources (Cook, 2022).

Despite its promise, water diplomacy faces many challenges when moving from theoretical frameworks to practical implementation. Recent literature identifies power dynamics and competing national interests as significant challenges that complicate diplomatic efforts to manage shared water resources (Macpherson et al., 2024). Certain states' traditional dominance over water resources can make them resistant to water control changes, while other states' infrastructure development can represent shifts in regional power dynamics. Water diplomacy attempts to manage these challenges by providing a framework that incorporates technical data and scientific evidence. While the framework aims to create more balanced discussions, its effectiveness in addressing power asymmetries varies depending on multiple factors, including political engagement, historical relationships, and the available mechanisms for dispute resolution. For instance, in the MRB, power dynamics between upstream and downstream countries continue to influence negotiations and outcomes even with scientific data sharing.

Water diplomacy integrates technical expertise with diplomatic engagement to provide a framework for preventing and managing water-related conflicts. As climate change and population growth increase pressure on shared water resources, water diplomacy's role in maintaining peace becomes increasingly important, mainly through its ability to foster cooperation, prevent conflicts, and support SDGs.

Methodology

This article employs qualitative content analysis as its primary analytical method, utilizing documentary research to gather secondary data sources. The data collection focused on three classes of documents: 19 official MRC records, 8 policy reports, and 14 academic papers from 2010-2024. Documents were selected based on their relevance to the two case studies, emphasizing materials directly addressing diplomatic processes and water governance. The analytical process followed three phases. First, the author read the collected documents to identify relevant content related to the MRC's water diplomacy framework. Second, the author developed a coding framework based on three predetermined categories—legal, institutional, and strategic mechanisms—which aligned with the MRC's water diplomacy framework. Third, the author performed a detailed analysis that involved (1) systematically examining how these mechanisms were employed in each case, (2) identifying recurring patterns in diplomatic approaches across different contexts, and (3) conducting a comparative analysis of how the organization managed transboundary water tensions differently with dialogue partners versus member states. This approach allows a nuanced understanding of how the MRC adapts and implements its water diplomacy framework across different contexts and stakeholder relationships.

While recognizing that factors such as domestic political considerations, economic development priorities, and broader geopolitical dynamics influence transboundary water cooperation in the MRB, this article concentrates on the MRC's approaches to managing transboundary water tensions. China's emphasis on hydropower development for economic growth and energy security, along with Laos's aspirations to become the "Battery of Southeast Asia," represent compelling national interests that shape their engagement with regional water governance (Biba, 2019; Cronin & Hamlin, 2012; Gong, 2004; Tran, 2022). Rather than comprehensively evaluating all factors influencing Chinese and Laotian cooperation in the MRB, this article analyzes how the MRC deploys its water diplomacy framework to manage transboundary water tensions and foster regional stability. This approach allows a detailed examination of water diplomacy while recognizing that the MRC's efforts represent one actor within a complex web of factors affecting transboundary water governance in the region.

The MRC's Water Diplomacy Framework

Building on the foundation of the "Mekong Spirit," which emphasizes cooperation, research, and information sharing, the MRC was formally established in 1995 through the

Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin (Jacobs, 1994; Mekong River Commission For Sustainable Development [MRC], 1995). The MRC's water diplomacy framework operates through legal, institutional, and strategic mechanisms.

Legal Mechanisms

The MRC has developed several procedural frameworks to mitigate conflicts and compliance issues related to water use projects among member states. These include the Procedures for Data and Information Exchange and Sharing (adopted in 2001); the Procedures for Water Use Monitoring and the Procedures for Notification, Prior Consultation and Agreement (adopted in 2003); the Procedures for the Maintenance of Flows in the Mainstream (adopted in 2006); and the Procedures for Water Quality, adopted in 2007.

The most important of these procedures is the Procedures for Notification, Prior Consultation, and Agreement (PNPCA). It aims to facilitate sharing information on water-related development projects and encourage transparent dialogue among member countries. It sets rules for managing water use in the MRB based on three key factors: the type of river (mainstream or tributary), the season (dry or wet), and the nature of water use (inter-basin or intra-basin)[1]. It also outlines procedures for communicating potential impacts and requiring varying notification levels, consultation, or agreement depending on the proposed project's scope and timing.

Member states must notify others of activities in the tributaries within their territory. For mainstream projects, prior consultation with other member states is required as a basis for an agreement, but consensus is not mandatory. Therefore, the MRC has no enforcement instruments if a member acts unilaterally. This flexibility is meant to balance regional development with the need for cooperation, but it also highlights limitations in enforcement. Since 1998, numerous notifications and consultations have appeared without specific agreements, indicating a gap in collaborative planning (Toriyabe, 2025).

[1] During the dry season, inter-basin projects require consent from affected countries, while intra-basin projects need prior consultation with those countries. During the wet season, the rules are less strict; inter-basin projects still require consultation, but intra-basin projects only need notification. For tributaries, mere notification suffices regardless of the season.

Institutional Mechanisms

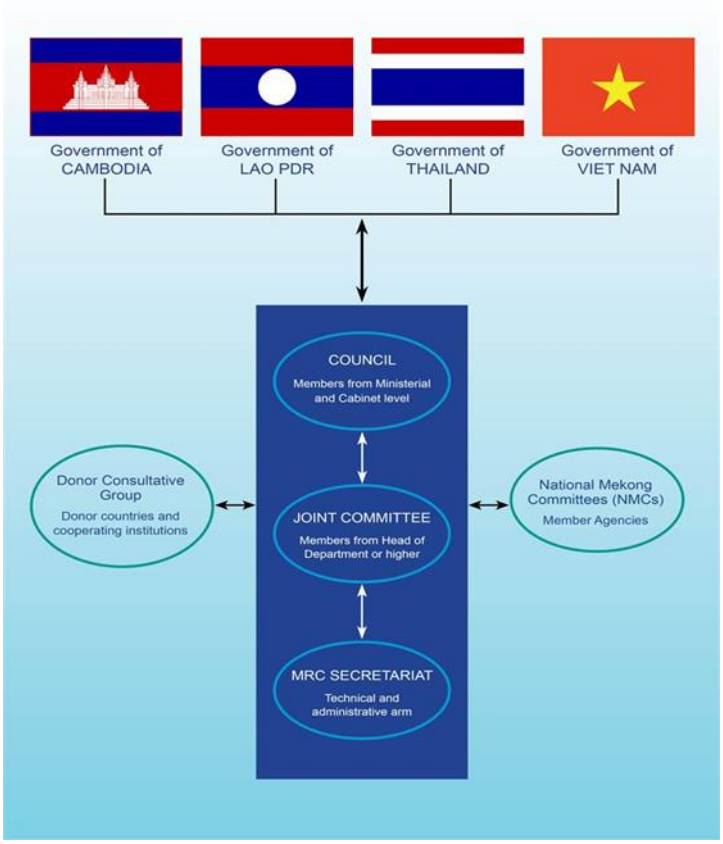

Figure 1. The MRC's governance structure

Source: Limcom (2020)

The MRC includes the four Lower Mekong Basin states: Thailand, Laos, Cambodia, and Vietnam. It is governed by a Council of Ministers, a Joint Committee (JC) of Department Heads, and a Secretariat acting as a technical knowledge hub and water diplomacy platform facilitator (see Figure 1)[2]. National Mekong Committees and their secretariats further support the structure to ensure coordination between the regional and national levels and are complemented by a donor consultative group. These institutional mechanisms ensure regular high-level political engagement and coordination among member countries while providing mechanisms for other stakeholders' engagement through initiatives such as the Annual Mekong Forums and Regional Stakeholder Forums. A major limitation is the absence of China and Myanmar as full members.

[2] The Council of Ministers, which is comprised of ministerial-level representatives from each member country and meets yearly, serves as the highest decision-making body. The JC, with members at the Head of Department level, meets twice a year and is responsible for implementing the Council of Ministers' policies and decisions. The Secretariat, led by a CEO appointed by the Council of Ministers, functions as the operational arm of the MRC to provide technical and administrative support.

Although they participate as dialogue partners, their exclusion restricts the MRC's authority over the river's upstream areas, where China can influence water flow and dam operations.

Strategic Mechanisms

The mandate of the MRC, as outlined in Article 1 of the 1995 Mekong Agreement, is to foster cooperation among member states "in all fields of sustainable development, utilization, management, and conservation of the water and related resources." In alignment with this mandate, the MRC has developed a set of strategic initiatives to promote sustainable development in the MRB. At the core of these efforts is the Basin Development Strategy (BDS), which has evolved from the original Basin Development Plan (BDP) in 1995.

Initially created as a cooperative framework among four member countries, the BDS began by establishing technical foundations and institutional mechanisms for joint planning and decision-making known as the BDP. This foundational phase transformed into a basin-wide approach in 2001 by introducing a five-stage planning process that moved beyond project-by-project water governance to develop essential capabilities such as advanced modeling techniques and knowledge bases for more integrated and forward-thinking management strategies. From its focus on poverty alleviation through water resource development in 2006-2010, the "plan" progressed to become a "strategy" by embracing Integrated Water Resources Management (IWRM) principles in 2011-2015, marking a shift from national interests to true basin-wide coordination.

The most recent strategy (2016-2020) outlines a common goal of achieving the full potential of sustainable benefits from the river basin by implementing proper IWRM principles and identifies key priorities for development and management, such as improving ecological functions, enhancing water access and use, promoting sustainable, inclusive growth, building climate and disaster resilience, and fostering basin-wide cooperation (Mekong River Commission For Sustainable Development [MRC], 2016a). It is implemented through the MRC Strategic Plan and National Indicative Plans 2016-2020 to ensure alignment between regional and national efforts. Along with the BDS, the MRC has also developed more specific strategies for climate change, hydropower, navigation, and fisheries. Notable initiatives include the development of the Climate Change Adaptation Initiative in 2007, integrating climate change as a key factor in the BDS for 2021-2030, and implementing the Mekong Climate Change Adaptation Strategy and Action Plan. However, the MRC's lack of enforcement power limits its ability to ensure compliance with its

recommendations and guidelines. The absence of China and Myanmar as full members also undermines the MRC's capacity to implement basin-wide management strategies and achieve its goal of sustainable and equitable water resource management. Consequently, the MRC's initiatives risk being perceived as reactive rather than strategic, especially when upstream actions impact downstream countries.

China's Dam Cascade on the Upper Mekong River

Background

China has constructed large-scale dams on the Upper Mekong River for hydroelectricity generation and water diversion. The development began in 1986 with the construction of the Manwan Dam. As of February 2024, 12 major dams—including Nuozhadu, Xiaowan, and Jinghong—have been built (see Figure 2).

Figure 2. Map of Mainstream Dams on the MRB

Source: Stimson Center (2024)

While initially meeting little opposition due to limited information, debates over dam impacts intensified from the 1990s onward (Li et al., 2011; Richardson, 2009). Concerns over unusual water level fluctuations first emerged in the 1990s and grew in the 2000s as droughts and floods in Thailand and Laos were increasingly linked to Chinese dam operations (McCartan & Gunn, 2008; Yeophantong, 2014). Events such as the 2010 drought and sudden water rise in 2013–2014 further fueled concerns over the role of Chinese dams in disrupting downstream water availability (Fuller, 2010; Reuters, 2010; Yeophantong, 2014; Mekong River Commission For Sustainable Development [MRC], 2014).

Chinese dams on the upper Mekong River have disrupted water flow downstream, threatening livelihoods and food security. Basist and Williams (2020) show that these dams restricted flow during the 2019 monsoon, leaving the Mekong dry along the Thai-Laos border while China's portion remained well-supplied. This artificial control disrupts the monsoon pulse vital for fish spawning and causes unpredictable flooding, damaging riverside communities (Eyler, 2020). The impact also extends to Cambodia's Tonle Sap Lake, which was filled for only five weeks in 2019, reducing fish production that provides up to 70 percent of Cambodians' protein (Eyler, 2020). The lack of transparency in China's dam operations further complicates downstream adaptation (Eyler, 2020).

The MRC's Water Diplomacy Framework in Practice

Legally, the MRC and China cooperate to enhance data sharing through a series of agreements. The 2002 Agreement on the provision of hydrological information on the Lancang-Mekong River during the flood season marked the beginning of this collaboration, requiring China to share daily hydrological data from two stations: Yunjinghong on the Mekong mainstream and Manan on a tributary (Mekong River Commission For Sustainable Development [MRC], 2002). This agreement was renewed in 2008 and again in 2013, with the 2013 renewal extending the data-sharing period from 1 June to 31 October, adding 30 days to the original timeframe (Mekong River Commission For Sustainable Development [MRC], 2008a; 2024a). Cooperation further advanced in 2019 with the signing of a Memorandum of Understanding between the MRC Secretariat and the Lancang-Mekong Water Resources Cooperation Center (Mekong River Commission For Sustainable Development [MRC], 2019). From 2020 onward, China began providing year-round hydrological data for dry and wet seasons (Reuters, 2020).

Institutionally, the relationship between the MRC and China is structured as a dialogue partnership, with China being one of only two dialogue partners (the other being Myanmar). This partnership involves regular annual formal dialogue meetings and expertise exchanges, which serve as a platform for ongoing communication and cooperation between China and the MRC (Mekong River Commission For Sustainable Development [MRC], 2024a). High-level engagement is a key feature of this relationship, exemplified by visits from Chinese officials to the Mekong River Commission Secretariat (MRCS) in Vientiane and reciprocal visits by officials from the Lower Mekong countries to Chinese dam sites.

Strategically, the MRC has employed a collaborative strategy that includes joint research

and analysis projects, such as the Joint Observation and Evaluation on the Emergency Water Supplement from China to the Mekong River, carried out by the Ministry of Water Resources of China and the MRC, and the Joint Research on Hydrological Impacts of the Lancang Hydropower Cascade on Downstream Extreme Events, conducted by the China Institute of Water Resources and Hydropower Research, MRCS, and the International Water Management Institute (Chuthong et al., 2019; Lancang-Mekong Water Resources Cooperation Center [LMC Water Center], 2021; Mekong River Commission For Sustainable Development [MRC], 2016d). The mechanisms also involve crisis management and response mechanisms, as demonstrated during drought events in 2004, 2010, and 2014, when the MRC requested additional information from China (Asia Times Online, 2008; Mekong River Commission For Sustainable Development [MRC], 2010; 2014). Mechanisms have evolved to include more comprehensive cooperation, as evidenced by the 2018 commitment from the Minister of Water Resources of China to strengthen regional development strategies and enhance collaboration among Mekong-related cooperation frameworks, including the Asian Development Bank's Greater Mekong Subregion program and the Mekong Lancang Cooperation (Mengjie, 2018).

A breakthrough occurred in 2016 during a severe drought when China released supplementary water from Jinghong and participated in the first-ever joint observation and analysis with the MRCS. This cooperation expanded data sharing, including long-term average monthly water level and discharge data (Mekong River Commission For Sustainable Development [MRC], 2016d). However, the 2016 water release was a reactive measure to alleviate an acute drought rather than the result of long-term collaborative planning. Similarly, data-sharing agreements and technical exchanges with China were initiated to address tensions. Moreover, public or local community participation was limited, and the process remained centralized among governmental and institutional actors.

As an upstream country and dialogue partner rather than a full member, China maintains its sovereign right over dam construction within its territory and often prioritizes national development interests over regional concerns. China's preference for the LMC further complicates the MRC's ability to address upstream impacts comprehensively. Nevertheless, the MRC's approach to water diplomacy has achieved incremental progress through technical cooperation and data sharing, even within these constraints. This case demonstrates how the MRC employs diplomatic flexibility when working with a dialogue partner whose interests may not fully align with the organization's mandate, focusing on achievable technical collaboration rather than directly attempting to challenge sovereignty claims.

Laotian Xayaburi Dam on the Lower Mekong Mainstream

Background

The Xayaburi Hydropower Project in Laos was the first mainstream dam to be proposed under the MRC's PNPCA process in 2010. This project is part of six planned mainstream dams above Vientiane, with the MRC's Basin-wide Assessment of Development Scenarios in 2010 suggesting that its impacts on Cambodia and Vietnam might be less significant compared to projects further downstream. However, the MRCS Technical Review of the Xayaburi Project raised concerns about gaps in knowledge on migratory fish species and sediment management, prompting requests for further measures (Bangkok Post, 2019; Minh, 2019; Mekong River Commission Secretariat [MRCS], 2011). Similar concerns were echoed during an MRC regional multi-stakeholder consultation in 2008, where experts argued that existing fish passage technologies would be inadequate for the diverse species in the Mekong (Dugan et al., 2010). Despite recommendations such as the Strategic Environmental Assessment (SEA) advising a ten-year deferral by the International Centre for Environmental Management in 2010, Laos declined to extend the consultation period. They asserted they had met all MRC standards and cited an international consulting firm's report as validation. With no consensus reached among MRC governance bodies, the issue escalated to the highest levels at the 3rd Mekong-Japan Summit in 2011 (Mekong River Commission For Sustainable Development [MRC], 2017; Ministry of Foreign Affairs of Japan, 2011). In 2012, Laos proceeded with the construction, officially launching the project.

The MRC's Water Diplomacy Framework in Practice

Legally, the foundation for the Xayaburi Hydropower Project consultation process was anchored in the 1995 Mekong Agreement. The prior consultation process, from December 2010 to April 2011, represented a formal legal mechanism through which member countries could review and respond to the proposed dam development. When member countries could not reach a consensus during the prior consultation process, they invoked the 1995 Mekong Agreement's conflict resolution clause to elevate the matter to governmental resolution (Mekong River Commission For Sustainable Development [MRC], 2016b). This event means that the government must handle it diplomatically, outside the MRC's authority. If diplomacy also fails, the countries

could involve other third-party mediation or international law. This dispute-resolution process deprives the MRC of the legitimacy or power to resolve conflicts. It can only manage disputes to a certain point before the process relies on external parties or international law.

Institutionally, a task group comprising sediment and fisheries experts was formed within the MRCS to support the special JC working group, which was created specifically to advise the JC during the prior consultation to provide current international standards for project improvement (Mekong River Commission Secretariat [MRCS], 2011). The process included structured discussions across three sessions of the JC working group, followed by a special JC session and a Council meeting to conclude the process (Mekong River Commission Secretariat [MRCS], 2011). The MRC Initiative on Sustainable Hydropower coordinated the development of the Preliminary Design Guidance (PDG), which has become an essential institutional tool for assessing hydropower projects in the basin. The PDG, endorsed by the JC in 2009, served as the primary assessment framework for the Xayaburi project documentation. The MRC also disclosed the technical review results and published relevant information online to promote transparency (Mekong River Commission Secretariat [MRCS], 2011).

Strategically, the MRC developed anticipatory strategies by conducting various studies and assessments before the project's submission, including basin-wide development scenario analysis, SEA of planned mainstream dams, studies on fish migration, and the development of a comprehensive hydropower program (Mekong River Commission For Sustainable Development [MRC], 2008b). In response to tensions, the strategic framework evolved to include higher-level diplomatic engagement, culminating in the four Prime Ministers commissioning the "Council Study" during the 3rd Mekong-Japan Summit in 2011 (Mekong River Commission For Sustainable Development [MRC], 2017; Ministry of Foreign Affairs of Japan, 2011). This Council Study examined the impacts of sustainable management and development on mainstream hydropower projects (Mekong River Commission For Sustainable Development [MRC], 2017; Ministry of Foreign Affairs of Japan, 2011). While regional stakeholder consultations were not directly held for the prior consultation, the MRC incorporated stakeholder input through other channels, including the basin development planning process and SEA activities (Mekong River Commission For Sustainable Development [MRC], 2016b; 2016c).

The initial prior consultation process faced criticism for its inability to halt the dam's construction and its limited opportunities for public participation, while the post-consultation technical engagement was constrained by limited data exchange between Laos, its developer, and the MRCS regarding design changes; nonetheless, it ultimately led to some project

improvements. Laos invested hundreds of millions of dollars in redesigning the dam, held a 2015 workshop to engage the MRCS and regional countries on addressing fish and sediment issues, welcomed global site inspections for mutual learning, and collaborated with leading international agencies such as the United States Army Corps of Engineers and the Australian Centre for International Agricultural Research on design adaptations and monitoring (Mekong River Commission For Sustainable Development [MRC], 2016b).

The MRC's handling of the Xayaburi case reveals mixed results in achieving its mandate. On the one hand, the MRC successfully facilitated a technical dialogue that led to improvements in the dam's design. The MRC also effectively served as a knowledge platform, generating and sharing scientific data about potential impacts. On the other hand, the framework fell short of creating genuine consensus among member states, as evidenced by Laos proceeding with construction despite unresolved concerns from Vietnam and Cambodia. This outcome suggests that while the MRC can effectively promote technical cooperation and knowledge exchange, its capacity to balance national development priorities with basin-wide sustainability remains constrained by its limited enforcement authority and the primacy of sovereign decision-making. The case demonstrates that the MRC's water diplomacy framework can influence project modifications but cannot fundamentally alter member states' decisions about major infrastructure development when national interests are at stake.

Discussions

The MRC's Water Diplomacy Framework

Legally, the MRC employs different types of agreements. With China, they have developed a series of data-sharing agreements, starting with the 2002 agreement and gradually expanding both the scope and duration of data sharing. The gradual expansion of data-sharing agreements coincided with improved cooperation between China and the MRC. While this progression suggests positive developments in their working relationship, it likely resulted from a complex interplay of factors, including changing regional dynamics, mutual economic interests, and evolving environmental concerns. The incremental nature of these agreements provided opportunities for both parties to demonstrate reliability and commitment to cooperative water governance, though the relationship remains primarily technical rather than deeply collaborative. In contrast, for the Xayaburi Dam, the MRC relied primarily on the existing 1995 Mekong

Agreement and its prior consultation process, which provided a more structured but less flexible legal framework.

Institutionally, the mechanisms varied between the two cases. The MRC operated through a dialogue partnership structure for the Chinese dams, facilitating regular annual meetings and high-level engagement. This arrangement, while less formal, allowed for continuous diplomatic exchange. With the Xayaburi Dam, the MRC deployed more formal institutional tools, including a dedicated task group of experts, a special JC working group, and the PDG framework. This dedication reflects a more structured approach when dealing with member states than dialogue partners. Strategically, the MRC's responses in both cases displayed a mix of reactive and anticipatory elements. With Chinese dams, while immediate responses to events such as droughts dominated early interactions, these experiences informed the development of longer-term cooperative mechanisms, including regular data sharing and joint research initiatives. Similarly, the Xayaburi case, despite its pre-existing consultation framework, required both planned technical assessments and responsive diplomatic interventions as new challenges emerged. When tensions arose, both cases saw the elevation of issues to higher diplomatic levels.

The outcomes of the water diplomacy framework reveal important patterns. With China, the MRC achieved gradual improvements in cooperation, culminating in year-round data sharing by 2020. The Xayaburi case, while initially contentious, led to some project modifications and increased stakeholder engagement, though it also highlighted limitations in the MRC's conflict resolution capabilities. Interestingly, the MRC adapted its water diplomacy framework based on its relationship with the parties involved. With China as a dialogue partner outside the formal agreement, the MRC relied more on relationship-building and voluntary cooperation. With Laos as a member state, the MRC employed more structured processes but faced challenges when formal mechanisms reached their limits and political will diverged from technical recommendations.

Theoretical Connections and Implications

The MRC's approach across different contexts aligns with Sehring et al.'s (2022) description of water diplomacy as involving "deliberative political processes and joint water governance arrangements." The organization's use of scientific knowledge and assessments, particularly evident in the technical reviews and joint research initiatives, demonstrates what

Kittikhoun and Staubli (2018) identified as integrating knowledge-based elements with diplomatic practice. The elevation of the Xayaburi issue to the Prime Ministerial level during the 3rd Mekong-Japan Summit exemplifies Zhang and Li's (2020) concept of elevating water issues to the foreign policy domain.

These cases both support and challenge key theoretical frameworks in the water diplomacy literature. First, they demonstrate the crucial interplay between the technical and political dimensions of cooperation. In both instances, technical dimensions (data sharing with China and design modifications for Xayaburi) provided important entry points for cooperation, but political realities constrained their effectiveness. This constraint supports Smith and Winterman's (2022) assertion that purely technical approaches are insufficient without robust political engagement across governance structures.

Second, both cases illustrate Ide's (2018) distinction between different levels of peace, with the MRC facilitating symbolic rapprochement rather than substantial integration. Particularly, the gradual trust-building with China through expanded data-sharing aligns with Ide's (2018) identification of trust as a key mechanism linking environmental cooperation to peace. However, as Williams (2020) notes, this incremental progress occurred against the backdrop of China's establishment of the LMC, potentially challenging the MRC's institutional relevance.

Finally, both cases confirm Link et al.'s (2016) argument that water disputes transcend simple allocation issues to encompass complex political, social, and economic dimensions. The power asymmetries noted by Macpherson et al. (2024) are evident throughout—whether in China's advantageous upstream position despite non-membership or Laos' assertion of sovereign development rights despite downstream concerns. These cases thus demonstrate how the MRC's water diplomacy efforts navigate a complex landscape where technical solutions alone cannot resolve the underlying political tensions in transboundary water governance. The analysis suggests that effective water diplomacy in the Mekong region requires not only formal mechanisms and technical expertise but also the ability to navigate power dynamics and build relationships that can withstand political pressures.

Conclusion

This article reveals both the potential and limitations of water diplomacy for transboundary water governance in the context of the MRB. The MRC's approach to water diplomacy evolved

differently based on the specific contexts and relationships. With China as a dialogue partner, it developed informal mechanisms focused on technical cooperation and data sharing, while with member states such as Laos, it employed more structured processes through the PNPCA legal mechanisms. These variations reflect both adaptability and the practical constraints and opportunities of different relationships. However, the organization's ability to adapt remained bounded by its limited enforcement authority and the need to respect member states' sovereignty. The MRC's experiences also highlight persistent challenges in water diplomacy. The organization's limited enforcement power, particularly evident in the Xayaburi case, underscores the tension between national sovereignty and regional cooperation in the MRB. This tension was demonstrated when Laos proceeded with construction despite unresolved concerns from other member states. Furthermore, the reactive nature of some diplomatic responses, especially in crises with Chinese dams, indicates potential areas for strengthening preventive diplomatic mechanisms within the MRC's water diplomacy framework. The 2016 drought response, while resulting in increased cooperation through water releases and joint analysis, exemplified this reactive approach rather than long-term collaborative planning.

Several policy recommendations emerge. First, the MRC could strengthen its procedural framework by developing more precise guidelines for resolving disagreements during the prior consultation process and exploring more formalized multilateral cooperation frameworks with dialogue partners, particularly regarding shared responsibility for upstream dam operations and their downstream impacts. Second, technical cooperation initiatives should be expanded through joint research projects focused on basin-wide ecological assessments of hydropower impacts on fisheries, sediment transport, and flow regimes, building on successful collaborative studies with China. Third, the MRC could enhance stakeholder engagement mechanisms to incorporate more diverse perspectives, including those of affected communities, into its diplomatic processes.

This article has several methodological limitations. The reliance on secondary data sources without validation through primary interviews limits the depth of analysis regarding internal decision-making processes within the MRC and national governments. Additionally, while the two case studies provide valuable insights, they represent only part of the complex transboundary water dynamics in the MRB, and findings may not be generalizable to all contexts within the basin. As challenges remain in balancing national interests with regional cooperation, future research could explore how the MRC's water diplomacy framework might be strengthened to better address power asymmetries between upstream and downstream countries while respecting national sovereignty concerns.

Acknowledgments

The author would like to thank Professor Kyoko Cross and Professor Yasunobu Sato for their valuable comments and feedback on earlier drafts of this article. Additionally, thanks are extended to anonymous reviewers for their insightful suggestions and contributions.

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