



RESEARCH ARTICLE

Water Security Issues in the Mekong River Basin: Current Situation and Vietnam's Responses

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ABSTRACT

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The Mekong River, a lifeblood for millions of people in East Asia and Southeast Asia, has faced significant difficulties in transboundary water resources management, primarily due to water conflicting use, hydropower dam construction, and great power politics. To make matters worse, climate change impacts have exacerbated these challenges, resulting in an increased saltwater intrusion and an acute shortage of freshwater. The impending threats to the fragile ecosystem of the Mekong River Basin (MRB) have had significant impacts on agriculture, fisheries, and livelihoods of countries in the region, especially downstream countries like Vietnam. As a downstream riparian state vulnerable to upstream water activities, Hanoi is poised to play a crucial role in transboundary water management efforts by actively participating in multilateral mechanisms like the Mekong River Commission (MRC). Through advocating for information exchange, data openness, and collaborative discussions, Vietnam can promote a comprehensive strategy involving riparian countries in the MRB to address water-related challenges. More importantly, Vietnam's engagement can benefit the joint efforts in fostering climate-resilient solutions and contributing to the sustainable management of the Mekong River's shared water resources. The article is based on a collection of documents from many sources to synthesize and evaluate the instability of water security issues in the Mekong River basin, and at the same time analyze the policies of the Vietnamese government to solve this problem as a downstream country. We will use a combination of methods, especially the system-structure method, to evaluate Vietnam's role in water security in the Mekong region. Based on the use of data, including documents from the Mekong Commission and related organizations, and research works of international and Vietnamese scholars... the results of the article will show an overview of the issue of water security in the Mekong, a boiling issue in recent times, and propose solutions for countries in the basin, especially the downstream country of the Mekong, Vietnam.

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INTRODUCTION

Running from the Tibetan Plateau to the South China Sea in East Asia, the Mekong River is regarded as one of the world's most complex river systems in terms of hydrological aspects (*Challenges to Water and Security in Southeast Asia*, 2010). The river plays a pivotal role in the preservation and maintenance of global biodiversity (Policy Department for External Relations, 2019). The Mekong River is part of the 2.6-million-square-kilometer Greater Mekong sub-region, which is home to 339 millions people (Policy Department for External Relations, 2019). This river basin is often referred to as the rice bowl of Asia given its abundant agricultural area, notably with rice cultivation (Mahadzir, 2022). Although the alluvium-rich waters in the river contributes to the richness of the soil and enhances the production of rice crops, local communities may find themselves prone to the

persistent dangers of natural disasters, including floods during the wet season and water shortages and salt intrusion during the dry season on the Mekong River (Käkönen, 2008). Meanwhile, the urgent concerns surrounding the building of dams on the Upper Mekong basin (also known as the Lancang River basin in China) and the growing demands on natural resources in the Lower Mekong basin¹, may put regional security in peril (Murdiyarso, 2005) (Jacobs, 2002).

Water-related tensions have become apparent in the Mekong River as a result of multiple conflicting activities in its system (*Challenges to Water and Security in Southeast Asia*, 2010). Arguably, there has been a dual trend of cooperation and competition among riparian countries when it comes to water resources management, notably in the face of emerging pressures induced by population growth, climate change, and economic development (Houba et al., 2013). The river has caught the heightened attention of both policy works and academic studies in an effort to resolve the difficulties regarding transboundary water² governance (Ibrahim, 2020).

It is worth noting that transboundary cooperation in the MRB has a long history (Mallick, 2022). Initially, discussions about flood concerns and multi-purpose development initiatives for the lower basin encouraged collaborative efforts, which eventually led to the establishment of programs such as flood forecasting and warning systems, as well as transnational fora for international dialogues on common issues (Jacobs, 2002). The characteristics of the MRB, including its distinct attributes regarding hydrogeology, the local inhabitants, and the essential resources and ecosystems, have had a significant role in shaping the development of cooperation within the region (Kinna & Rieu-Clarke, 2017).

The article is structured as follows. First, the author examines the difficulties in managing Mekong River water resources, which include the conflicting interests among riparian countries and their growing concerns over the uncertainty in the regional dynamics due to great power politics. Second, the article undertakes an examination of the MRC—one of the regional multilateral mechanisms aimed at resolving disputes among riparian nations and promoting regional sustainable development. Third, the article looks at the operational and organizational shortcomings of the MRC, focusing on its inadequate role in bolstering collaborative efforts between relevant actors with diverse viewpoints and interests. Finally, the author emphasizes the growing importance of Vietnam in addressing water-related issues and offers recommendations to strengthen regional cooperation in the face of common challenges.

LITERATURE REVIEW

At the end of the 20th century, with the establishment of many cooperation mechanisms in the Mekong region such as the Greater Mekong Subregion (GMS) and the Mekong River Commission (MRC), issues related to the Mekong River gradually attracted the attention of domestic and foreign scholars from many different research perspectives. In the first decades of the 21st century, these cooperation mechanisms have increasingly promoted their effectiveness and had positive impacts on the socio-economic situation of each country. Therefore, from the beginning of the 21st century to the present, research works on the Mekong River region have increased significantly in quantity and quality.

In 1999, a relatively comprehensive study of the Mekong River basin was published in the United States, titled "Water, War, and Peace" by Nguyen Thi Dieu. This is a book that studies the Mekong River throughout its history. With rich sources of information, primarily based on the official histories of the Nguyen Dynasty, the author took the Mekong River region as a space to study the relationship between Vietnam, Laos and Cambodia from the beginning to the end of the 20th century. However, this work mainly deals with political issues, and still has very limited content directly related to the issue of water security.

¹ The Mekong River has a drainage basin spanning about 795,000 square kilometers, of which the Lower Mekong basin accounts for around 606,000 square kilometers. This area encompasses a significant portion of the territories of Laos and Cambodia, as well as about one-third of Thailand and two-fifths of Vietnam (Murdiyarso, 2005).

² Transboundary waters are shared aquifers, lakes, and river basins between two or more countries (Capacity for Disaster Reduction Initiative, 2020).

In 2006, the United Nations Environment Program (UNEP) with the GIWA project arm (short for Global International Water Assessment) published the Mekong River comprehensive study of the Mekong River region. This work has 75 pages of content and three parts: (i) study of natural features (territory, climate, water resources, biodiversity, habitat) and socioeconomic characteristics (population, health conditions, hydropower, agro-fishery, mining as well as urbanization and industrialization) of the Mekong River region; (ii) assess the problems of shortage of clean water sources, environmental pollution, changes in living environment, the problem of unsustainable exploitation of resources and the problem of climate change; (iii) suggest some solutions to the challenges facing the Mekong region now and in the future. Although only a few aspects of the work are related to this article's topic, the research results of the Mekong River have provided the author with an overview of water security in the Mekong region. Research on the Lower Mekong region, in 2011, MRC published the project Basin Development Plan Program - Planning Atlas of the Lower Mekong River Basin. In the opening part, the work gives an overview of the Mekong River basin, the operation mechanism of the MRC, and the 1995 Mekong Agreement. In the content part, the work focuses on studying social issues, transport infrastructure, resources, water-water use, and the environment. The last part is the results collected by MRC experts from hydro-meteorological monitoring stations in the Mekong River basin.

An important document is the publication of MRC: *Basin Development Plan Programme – Planning Atlas of the Lower Mekong River Basin*. In the introduction, the work gives an overview of the Mekong River Basin, the MRC's operating mechanism, and the 1995 Mekong Agreement. In the content, the work focuses on studying social issues, transport infrastructure, water resources – water use, and the environment. The final part is the results collected by MRC experts from hydrometeorological observation stations in the Mekong River Basin. The synthesis of data over decades has helped the document have enough scientific basis to make comprehensive and realistic assessments of the current status of the Mekong River Basin.

In addition, we also access many different sources of documents to compare and clarify the arguments raised in the article. These documents are written by many scholars in Vietnam, and countries in the Mekong basin, as well as assessments by outside scholars, which will highlight the challenges of water security, forecast the progress of the problem in the future, and provide necessary countermeasures. There are also studies by Vu Duc Liem and Dinh Xuan Thao: *Vietnam in the Mekong sub-region for a river for sustainable development*, which fully address the challenges of water security in the Mekong and its challenges. Vietnam's policy is the country most affected by instability in water security. Articles by Charvit Kasetsiri (2003), *Will the Mekong Survive Globalization?*; To Minh Thu, Vu Thi Thu Ngan (2020), *Water security a theoretical and practical issue in the Mekong Sub-region*; Duong Van Huy (2016), *Promoting cooperation to ensure water security in the Mekong sub-region*; Bajorinas (2021), *Power Relations in the Mekong River Basin—A look into the discourse of the Mekong River Commission*, Department of Human Geography - Lunds Universitet; Campbell (2009), *The Challenges for Mekong River Management*, In *The Mekong* (pp. 403–419); Cosslett & Cosslett, (2014), *The Mekong Delta*. In T. L. Cosslett & P. D. Cosslett (Eds.), *Water Resources and Food Security in the Vietnam Mekong Delta*, Springer International Publishing; Gerlak, & Schmeier (2014), *Climate Change and Transboundary Waters: A Study of Discourse in the Mekong River Commission*. *The Journal of Environment & Development*; ... also mentioned the problem of water security in the Mekong River in different aspects.

In summary, there have been many works on water security in the Mekong River basin, but they are still scattered, mainly concentrated in the downstream area. This article will comprehensively address the issue throughout the basin to have a general view, on that basis, analyze, evaluate, and propose some policies for Vietnam to deal with the current severe water security issue in the Mekong.

RESEARCH RESULTS AND DISCUSSION

1. Challenges of transboundary water resources management in the MRB

1.1. Conflicting interests of local communities and riparian countries

The Mekong River, starting from the Tibetan Plateau in China at an elevation of 5,000 meters, flows through six countries, namely China, Myanmar (Burma), Laos, Thailand, Cambodia, and Vietnam,

before emptying into the South China Sea. On the global scale, the river is ranked as the twelfth longest with a length of 4,200 kilometers, and the twenty-first largest in terms of catchment area, which spans 795,000 square kilometers (Lauridsen, 2004). The weather conditions of the MRB show a diverse spectrum, ranging from high-altitude continental and temperate characteristics in the upper basin to tropical monsoonal features in the lower basin (Mekong River Commission, n.d.). The water resources in the region are considered to be plentiful during the wet season (from June to mid-October), but water scarcity can arise during the dry season (between mid-February and May). The Tonle Sap lake, also known as the Great Lake in Cambodia, serves as a natural buffer to mitigate floods during the wet season and facilitate water discharge during the dry season (Lauridsen, 2004). In its upper reaches in the Qinghai and Tibet regions, the Mekong River shares its waters with the world's two other major rivers, the Yangtze and the Sallween. In Yunnan (China), the Sallween, Irrawaddy, Mekong, and the Yangtze mainstream are all contained within a corridor of only 120 km. The Mekong then flows into Laos, along the Laos-Myanmar border, and follows the Thai-Lao border before entering Cambodia. Here, the river merges with the Tonle Sap Lake, then flows through Vietnam, as the "Cuu Long", before emptying into the East Sea (Liem & Thao 2019, 47).

At its source (China), the Mekong River's water source comes from the melting snow of the Himalayas. The water in the catchment areas in China accounts for about 16% of the flow, while Myanmar contributes 2%, Laos 35%, Thailand: 18%, Cambodia: 18%, and Vietnam 11% (Kiguchi 2021).

	Water storage area (Km km ²)	Ratio (% of total flow)	Mass (% of total flow)
China	165.000	21	16
Myanmar	24.000	3	2
Laos	202.000	25	35
Thailand	184.000	23	18
Cambodia	155.000	20	18
Vietnam	65.000	8	11
All Region	795.000	100	100

Source: (Kiguchi 2021).

The Mekong River plays a crucial role in ensuring both food and energy security. The influx of nutrient-rich sediments provides one of the most productive ecosystems on the planet, as well as one of the world's largest freshwater fisheries (*Challenges to Water and Security in Southeast Asia*, 2010). In addition to hydropower potential, the potential for aquatic resources is also very large. According to research, this is the "home" of more than 1,300 aquatic species (with about 240 species of fish, of which, large catfish can be up to 3 meters long and weigh 300 kg (scientific name is *Pagasianodon gisgas*); Irrawaddy dolphins can be 2.5 meters long and weigh 150 kg and have been listed as endangered animals by the World Union for Conservation of Nature (UICN) in 2003). Therefore, every year, the Mekong River provides aquatic products of more than 1.5 million tons (Thuy 2018). Approximately 75% of the people in the Lower Mekong basin, largely involved in agricultural and fishing activities, make a living by utilizing the abundant natural resources on the river (Murdiyarso, 2005). Meanwhile, the dam construction projects have been driven by the ambition of creating an electrical grid for regional development, backed by the river's huge hydropower potential (*Challenges to Water and Security in Southeast Asia*, 2010) (Policy Department for External Relations, 2019). Since 2007, the development of hydropower in the Mekong basin has seen substantial growth (Friend et al., 2009). For example, Laos³ had a total of 78 operational dams and has entered into memorandums of understanding for an additional 246 dams as of 2021 (Fawthrop, 2021).

³ Among the member nations of the Association of Southeast Asian Nations (ASEAN), Laos stands out as the most active nation in the field of electricity generation. Hydropower development plays a vital role in the socioeconomic growth of this land-locked nation, serving as a crucial means for both exports and servicing domestic energy demand (Jusoh et al., 2017).

The conflict over water security in the Mekong is becoming increasingly fierce, stemming from many causes.

First of all, it is due to differences in national interests. Although they share the same geographical features as the Mekong River, each riparian country has its priorities and interests. As an upstream country, owning nearly half of the total length of the 4,909km of the Mekong River, China has an absolute advantage in deciding the fate of the river and controlling the ability of downstream countries to access sustainable water resources. In its thirst for energy to serve industrialization and maintain economic growth, the hydropower resources of over 2,200km of the Mekong River (called Lancang in China) have been thoroughly exploited by Beijing. Thailand needs water resources for agricultural development in the Northeast; Laos needs capital and experts to develop hydropower; Cambodia needs assurance of fish resources in the Tonle Sap Lake; Vietnam needs water resources for production in the Mekong Delta.

Because each country has the right to decide on the use of the river through its national territory, it leads to countries unilaterally implementing plans and projects without taking into account the common interests of the river and the interests of other countries. Countries also cannot agree on a policy or guiding principle for ensuring the water security of the Mekong River. Currently, in the Mekong River basin, China and Laos have been building many hydroelectric dams on the mainstream despite the objections of downstream countries and without taking into account the sustainable development of the river. Specifically, China's point of view is that "China is the country that directly controls the flow of the upper Mekong River (China calls it the Lancang River), this country refuses to participate in the Mekong Agreement and claims that the water source of the Mekong River flowing through its territory is "internal water", under its absolute sovereignty, so it has the full right to use and exploit without the consent or cooperation of the countries in the basin" (Chinh & Oanh 2016). Thus, only when there is a reasonable division of benefits between upstream and downstream countries through binding agreements, can Mekong water security be ensured.

The exploitation and use of Mekong water resources, especially the construction and operation of hydropower dams, is a major threat to the river's water security. According to estimates, the total electricity production demand of the Mekong sub-region countries increases by an average of 6.9% annually and increases by about 616,000 billion W per hour. Countries are simultaneously developing hydropower to meet the increasing energy demand, serving economic development, and creating a hydropower race in the region.

China is the country with the largest upstream hydropower potential in the world (Mukand & Shahriar 2009). China's upstream hydropower development program on the Mekong River began in 1986, including 15 large hydropower dams on the mainstream, half of which have been built. The total water reserve in the reservoirs of the 15 dams is about 55 billion m³; the total capacity of China's hydropower plants in this program is about 24 GW (Mukand & Shahriar 2009). For the downstream region, there are currently many projects under implementation. 10 hydropower dam projects on the mainstream flowing through Laos - Thailand and 2 projects in Cambodia. Among the downstream countries, Laos is the country with the largest hydropower potential and the largest number of hydropower projects. Currently, Laos has 16 dams on the Mekong tributaries, with 9 dams under construction; 23 other dams are under construction, including 5 dams on the Mekong mainstream (the 2 most controversial dams with countries in the sub-region are Don Sahong and Xyaburi), the Xyaburi dam is 32m high, has a capacity of 1260MW, and a budget of 3.5 billion USD for Laos (Mukand & Shahriar 2009). Vietnam also has hydropower projects on the Mekong tributaries (Sesan, Serepok, and Sekong (3S) rivers). In particular, on August 8, 2023, Cambodia sent a notification to the Mekong River Commission about the canal project from the Bassac River to the seaport area in Kampot-Kep province on the Gulf of Thailand. The Cambodian government named this canal "Funan Techo Canal". The construction of hydroelectric dams on the Mekong Mainstream from China, Laos, Thailand, and Myanmar has caused concern for countries in the region, especially when the 292m high Xiaowan Dam with a capacity of 4,200MW came into operation in 2009 in China. To fill this dam with a volume of 15 billion m³, it will be necessary to use half of the water flow in the upper Mekong River for 5-10 consecutive years (Chuong 2023). In addition, when the Funam Dam comes into operation, according to many researchers, this will be the final nail in the coffin for Vietnam's Mekong Delta.

In addition to building hydroelectric dams, countries also adjust the flow of the Mekong River to serve their interests. Thailand has a strategy to develop the economy of the Northeast region of the country. To implement this strategy, Thailand has fully exploited the Mekong River's water resources for irrigation. Meanwhile, Cambodia wants to maintain the large aquatic resources in Tonle Sap and fully utilize the Mekong River's water resources to supply the country.

Hydrological measurements show that the water flow to Vietnam in the Mekong River basin has decreased sharply in the dry season, leading to severe drought. Statistics have recorded that the Mekong River water level has been getting lower and lower, reaching a new record low in 2016 in the past 90 years, causing severe drought and saltwater intrusion. In contrast to the dry season, downstream countries such as Vietnam face the risk of insecurity during the rainy season such as unusual flood discharges and dam breaks. The dependence on the water flow and seasonal discharge time from upstream water sources has become a major challenge. With the advantage of being in the upper Mekong River, water resources are also used as a "weapon" in international relations. In 1997, China closed the river for 4 days to build a dam to block the flow of a large amount of freshwater into the Mekong Delta, causing Vietnam to lose 100,000 USD per day. Next, in 2016, the Mekong Delta provinces had to cope with drought and saltwater intrusion across 13 provinces. Saltwater intrusion affected 9/13 provinces with the lowest flood peak flow in over 90 years (Phurong Vũ 2016). This had such a big impact that on March 10, 2016, the Vietnamese Government had to send a document to China requesting tolls from upstream dams to improve the drought situation.

China's control over the Mekong headwaters area⁴ and its dam construction in Yunnan are part of the water-related challenges that pose dangers to the environment, society, and peace and stability in the Mekong Basin (Cronin & Hamlin, 2012). In general, all the countries along the Mekong River have distinct agendas regarding the use of the various resources on the river, and the disagreements among riparian nations mostly arise from their conflicting approaches (Feng et al., 2022) (Jusoh et al., 2017). More importantly, the issue of water shortage is progressively giving rise to social and political tensions between communities living in upland and lowland areas along the Mekong River, as well as among riparian countries (Murdiyarsa, 2005). In short, the Mekong River ecosystem is at risk of imminent collapse due to increased upstream dams and climate change impacts, let alone deforestation, sand mining, extensive irrigation, and wetland conversion (Ha & Seth, 2021).

The construction of hydroelectric dams not only affects water security but also directly affects livelihoods and especially food security, especially fish and rice production (Mallick, 2022). Indeed, Mallick noted that hydropower dams trap nutrients and sediment, preventing them from reaching floodplains (2022). In July 2019, the monitoring stations in the Mekong River mainstream recorded the lowest water levels in history, with the amount of water flow during this period declining by 70-75% compared to the average flow seen in the same month in 2018 (Phoumin & Thu, 2020). The degradation of the ecosystems is attributed to the presence of hydroelectric projects, since these constructions impede the migratory routes of fish and trap sediment inside their reservoirs (Policy Department for External Relations, 2019). Forecasts about the water level in the Mekong River have offered a pessimistic outlook. It is anticipated that about 97% of the sediment discharge to the basin would be reduced by 2040 if all planned dams on the river get built (Policy Department for External Relations, 2019). A major risk of changing the flow, water security, and livelihoods of people along the basin, especially the lower Mekong River.

1.2. US-China competition in Mekong cooperation mechanisms on water security

The primary geopolitical concerns in the Mekong area, as identified by experts, are linked to the unsustainable and unfair management of transboundary water resources, with the presence of inadequate regional institutions (Vannarith, 2019). Houba et al. noted that although the MRB is a transboundary water resource, inadequate cooperation was noticed, notably in interactions between its two component areas—the upstream and the downstream (2013). Collaborative efforts between countries in the Mekong upper basin like China and Myanmar and those in the lower basin like Thailand, Laos, Cambodia and Vietnam remain modest. To a certain extent, 'dwindling water flow

⁴ in Tibetan Plateau and the neighboring areas of the Himalayas

and rising water stress' in the MRB have attracted a focal attention of both China and the United States, as the two superpowers are competing for influence in the region (Lema, 2023). The power competition between China and the United States has transformed water and food security into a crucial aspect of strategic diplomacy. And both Beijing and Washington have suspicions about the intentions of the others (Mallick, 2022).

Since 2013, China has strived to take a more prominent and significant role within the sub-regional cooperation frameworks (Guangsheng, 2016). In the MRB, the management of regional security aligns to Beijing's strategic approach to maintain a Chinese-led order, driven by its national interests, notably with regard to regional resource access (Dosch, 2010). China's considerable economic, political, and military prowess relative to the nations located downstream enables it to establish regional hydro hegemony, with various measures implemented to ensure its advantages in the region, namely the limited participation in multilateral cooperation, a preference for engaging in bilateral engagement, and an unilateral approach to hydropower production via the construction of dams in the Upper Mekong basin (Mallick, 2022). China has embraced a dual approach in engaging with regional countries when it comes to water-related issues. On the one hand, Beijing has established a growing network of bilateral interactions with individual ASEAN members and enhanced its influence in the region (Dosch, 2010). China's strategy, which is viewed as the 'one country, one treaty' scheme in transboundary water governance, focuses on conducting direct negotiations with relevant countries through bilateral engagement to gain advantages incurred from the asymmetric nature of such relations (Ibrahim, 2020, p. 5).

On the other hand, China launched the Lancang-Mekong Cooperation (LMC) in 2016, a platform designed to promote regional cooperation with other five riparian countries, including Cambodia, Laos, Myanmar, Thailand, and Vietnam. Scholars viewed the China-led LMC as an institutional approach aimed at maintaining a balance in response to external pressures exerted by other existing institutions, including the MRC and the Mekong-Japan Cooperation (MJC) (Po & Primiano, 2021). However, concerns have been raised given a lack of transparency in the operations of LMC, with alarm being voiced over the Chinese 'debt-trap diplomacy'⁵ approach (Sovachana & Murg, 2019, p. 50).

Since the first years under the Obama administration, the US has expressed concerns about China's growing influence and the risks to food security and fisheries from building dams in the Mekong Delta, a few years before the establishment of LMC (Cronin & Hamlin, 2012). Given the geopolitical importance of the Mekong region, the US government launched two major initiatives, the Lower Mekong Initiative (LMI) in 2009 and the Friends of the Lower Mekong (FLM) in 2011. These initiatives were formed as essential organizations with the goal of providing comprehensive support to the area (Yoshimatsu, 2015). During a hearing session of the United States Senate Committee On Foreign Relations in 2010, American senators stated that:

Our involvement includes emphasis on building solutions that consider the environment and climate change, health, education, infrastructure, and economic growth. Through our support of multinational solutions, we hope to foster an environment that will preempt instability and minimize the potential for violent conflict. (*Challenges to Water and Security in Southeast Asia*, 2010).

In the eyes of the US legislators, the potential for violent conflict in the MRB involves various factors, namely 'unilateral development of upstream infrastructure, bilateral development of downstream infrastructure, changing environmental conditions, and historical tensions in relations between Mekong countries' (*Challenges to Water and Security in Southeast Asia*, 2010). The growing prominence of China has posed significant obstacles to the United States' regional interests. In response to the perceived challenges presented by Beijing's ambition, the Mekong-US Partnership was initiated in 2020 with the aim of enhancing collaboration between Washington and five nations

⁵ Debt-trap diplomacy has emerged as an increasingly controversial issue that sparks discussion and analysis within Chinese foreign policy. There exists an argument suggesting that China engages in an intentional approach aimed at entangling countries in a web of debt, with the ultimate goal of gaining an upper hand or obtaining significant assets (Brautigam, 2020). Still, according to Himmer & Rod, it seems that China had no malicious intentions in its relationship with the borrowing country, as Beijing merely sought ways to seize the opportunity to extend its influence (2022).

of the Mekong sub-region, leveraging the LMI's agenda to foster cooperation on four key areas: non-traditional security, natural resources management, economic connectivity, and human resource development.

In addition, in the Mekong River, many multilateral mechanisms have been established to promote regional cooperation and ensure sustainable management of water resources. These initiatives include the Greater Mekong Subregion (GMS), MRC, Mekong-Ganga Cooperation, MJC, Mekong-Korea Cooperation, LMI, and LMC (Vannarith, 2019). In addition, water issues are also prioritized in mechanisms such as the Cambodia-Laos-Myanmar-Vietnam (CMLV), and the Ayeyawady-Chao Phraya-Mekong Economic Cooperation Strategy. These mechanisms serve as platforms for conducting water diplomacy, encompassing a range of activities such as policy coordination and consultation at a high level, sharing of data, consultation related to hydropower development, resolution of disputes, management of disasters, promotion of regional cooperation in waterway transport, and facilitation of multi-stakeholder water diplomacy (Phoumin & Thu, 2020). In the words of Mallick, the role of neoliberal institutionalism⁶ is critical since it assures that governments prefer mutual benefit above conflicts (Mallick, 2022).

2. Mekong River Commission (MRC) in resolving Mekong water disputes

2.1. MRC is an organization that plays an important role in addressing transboundary water security in the Mekong

Since its foundation in 1995⁷, the MRC has become the 'only inter-governmental agency that works directly with the governments' of member countries on governance of shared water resources (*The Mekong River Commission*, n.d.). The activities of the MRC operates under a governance structure that includes a high-level ministerial decision-making body (Council of Ministers), a more technical operationalization body (Joint Committee), an operational arm (MRC Secretariat), and national coordinating entities (National Mekong Committees) (Gerlak & Schmeier, 2014). The Joint Committee oversees the Secretariat and oversees the implementation of Council of Ministers' decisions. The Secretariat assists the Council and Joint Committee with technical and administrative issues. At the national level, the National Mekong Committees (NMCs), serving as the MRC's official entrance points in each country, are responsible for developing national policies and coordinating efforts between national line agencies and the MRC (Lauridsen, 2004).

It should be noted MRC has demonstrated efforts to enhance its operations and adapt to the ever-changing situation. Over the years, the MRC has significantly contributed to the prevention of regional water conflicts by its involvement in long-term planning (Lauridsen, 2004). The MRC has been established based on the scientific knowledge and international diplomacy expertise of its predecessor organizations, namely the Mekong Committee (MC) (1957-1978) and the Interim Mekong Committee (IMC) (1978-1995) (Jacobs, 2002). Jacobs noted that the two predecessors of the MRC operated amidst challenging circumstances, characterized by heightened political tensions and erratic funding levels. Despite these obstacles, both MC and IMC managed to make significant contributions to the fields of transboundary river basin planning and international diplomacy. In comparison to its predecessors, the MRC's primary difference is in the broadened mandate of the organization, which encompasses its capacity to address technical and policy matters. Moreover, the 2001 Work Programme represented a shift in the MRC's focus from project-oriented endeavors to prioritizing the enhancement of resource management and preservation (Jacobs, 2002). The MRC has made efforts in an ongoing process of institutional reform, motivated by its awareness of certain shortcomings in river basin management. The primary objective of this reform is to enhance

⁶ Neoliberal institutionalism is a significant factor in addressing cooperation challenges, in which governments' distinct self-interested conduct leads to poor outcomes (Stein, 2009). While neoliberal institutionalism may be seen as a 'false promise' in the realms of national security and defense, it has the potential to address collective action obstacles and facilitate the achievement of mutually desirable outcomes in various scenarios that resemble the Prisoner's Dilemma (Mearsheimer, 1994, p. 5). In the Prisoner's Dilemma, two individuals acting in their own self-interest fail to achieve the most favorable result (The Investopedia Team, 2023).

⁷ Cambodia, Laos, Thailand, and Vietnam established the Mekong River Commission in April 1995 following the signing of 'The Mekong Agreement for Cooperation for the Sustainable Development of the Mekong River Basin'.

the accountability among member countries and bolster the river basin organization's capabilities in managing the MRB (Gerlak & Schmeier, 2014).

2.2. Operational setbacks of the MRC

Still, despite the current cooperative structures, the level of collaboration over regional water management has fallen short of expectation. The effectiveness of transboundary river basin management depends on the political commitments of participating countries, so it remains a nerve-racking task when it comes to the cultivation of a shared awareness among riparian countries between the Mekong River and its regional basin (Campbell, 2009). In the case of the Mekong River, the challenge involves the establishment of a same vision for the basin among the relevant stakeholders, which include regional countries, as well as the enhancement of collaborative efforts among them (Campbell, 2009).

It is evident that the MRC displays a lack of synergy and coordination in operations (Vannarith, 2019). For instance, the implementation of dam building projects in Laos has taken place without enough consideration for the concerns and interests of neighboring countries, despite Laos' status as a member of the MRC (Shkara, 2018). Additionally, concerns over the commitment of member nations, particularly Thailand, to the 1995 Agreement of the MRC has been raised, notably with regards to issues that involve conflicting national interests (Campbell, 2009).

The MRC has proven to be ineffective in curbing China's actions in the Mekong River. The absence of China and Myanmar, the two upstream riparian countries, from the MRC also poses challenges to the effective implementation of geographically integrated river basin management (Gerlak & Schmeier, 2014). In essence, the weakness of the MRC framework stemming from the absence of China is fundamental given that Beijing is a dominant power in the river basin and controls 25% of the river flows during the dry season (Lauridsen, 2004). Simply put, the current situation has made it easier for China to play 'politics with its water-control capability' (Brauer et al., 2017, p. 48).

Meanwhile, transparency represents a notable weakness within cooperation initiatives, including those under the MRC. Feng et al noted that the MRC is primarily influenced by foreign donor efforts, rather than being a representative of the management capabilities and development priorities of the governments of member nations (2022). In terms of functional operations, the MRC has encountered challenges characterized by a high level of staff turnover, a shortage of personnel with technical competence, and a relatively low emphasis placed on the dissemination of data via publishing (Campbell, 2009). These obstacles have caused a sense of distrust among regional countries, which is regarded as one of the fundamental barriers in the promotion of multilateral cooperation. Some scholars doubted that any assessment regarding water resource management efforts in the Mekong River may show a lack of strategic trust among the riparian countries, particularly with limited transparency and reluctance to share information (Vannarith, 2019).

3. Positioning Vietnam's role in regional water resources management

Vietnam, the lowest-lying nation in the Mekong Basin, has shown a heightened sense of urgency in fostering water-related transborder collaboration (To & Le, 2019). In particular, Hanoi has emerged as one of the most severely affected nations in the face of upstream dam construction (Mallick, 2022). The country's Gross Domestic Product (GDP) is expected to decline by 0.3%, primarily due to the impacts in the fisheries and agriculture sectors (Yoshida et al., 2020). Vietnam has expressed concern about the 'red alert' regarding the impacts of upstream hydroelectric dams on the river's section in its territory⁸ (Vietnam News Agency, 2022).

Considering Mekong concerns as a matter of national security, Vietnam has made efforts to allocate resources for fostering collaborative efforts among neighboring countries to ensure the long-term development of the MRB (Truong-Minh & Nguyen, 2022). As a member of MRC, Vietnam can work with partners to foster the organization's role and capacity in water management and collaborative efforts between riparian countries, advocating for a stronger multilateral approach to MRB

⁸ The Mekong Delta of Vietnam (Cuu Long Delta) is drained by two main tributaries of the Mekong River, namely the Mekong and the Bassac. In Vietnam, these two tributaries are locally recognized as the Tien River and the Hau River, respectively (Cosslett & Cosslett, 2014).

management. The role of multilateral mechanisms remains vital for constructive discussions, offering opportunities for riparian countries to address emerging issues, particularly with regards to the hydrological, legal, scientific and geopolitical aspects (Ibrahim, 2020). It is advisable for riparian nations to explore alternate options for growth that are not heavily reliant on hydropower and the intensive use of water resources (Phoumin & Thu, 2020).

In this regard, given its role in ASEAN, Vietnam is poised to play an active part in promoting water resources management by relying on legal instruments and diplomacy to avert tensions and disputes (Jusoh et al., 2017). In addition, discussions within the regional ASEAN-led mechanisms, such as East Asia Summit (EAS), ASEAN Regional Forum (ARF), and ASEAN Defense Minister's Meeting-Plus (ADMM-Plus), can be further promoted for addressing the water-related issues as an urgent task. Feng et al. laid out the cooperation aspects that would be suitable for eventually better collaborative efforts between regional countries, including navigation and flood control, data sharing in the utilization of transboundary waters (2022). Such impactful activities can be of significant importance as cooperation is required in the face of looming challenges posed by climate change impacts in the MRB. Currently, the MRC's climate change actions narrowly reflect the production of studies and project scoping rather than real adaptive actions in the basin (Gerlak & Schmeier, 2014). Thus, it is vital to address climate-related challenges for transboundary waters by providing the data and analytical basis for understanding the consequences of climate change on a basin's water resources. On that premise, regional countries could engage in comprehensive adaptation plans in light of their own policy-making process when it comes to the river basin planning activities.

Despite its role as the primary regional organization in Southeast Asia, ASEAN has remained a 'bystander' in the impending deterioration of the Mekong River environment, which spans across five of its member nations (Ha & Seth, 2021). Except for Vietnam, many Southeast Asian states are hesitant to raise the Mekong issues inside the ASEAN framework, owing to fears of consequences from Beijing and becoming victims of great power politics (Ha & Seth, 2021). To a certain extent, the tendency may impede regional countries in protecting their own interests and, more importantly, seeking favorable resolutions for regional issues as a whole. Hence, Hanoi can act as a bridge to foster discussion and collaboration between the United States and China on the Mekong issue. The emergence of strategic competition with regard to a regional water concern poses both obstacles and prospects for all nations situated along the Mekong River, especially Vietnam (Lema, 2023). Phoumin & Thu noted that regional countries with constrained economic capabilities which limit the allocation of resources towards regional initiatives are in need of external support (2020). Although the United States and China have different goals and approaches, Vietnam is aware that the LMI's goals do not contradict those of the LMC in proposing a 'balance of interests and responsibilities' (To & Le, 2019, p. 406).

The good news is that the commitments and approaches to Mekong development by the United States and China exhibit some complementing aspects. Beijing prioritizes economic development initiatives, particularly via infrastructural improvements, to stimulate commerce and investment. This strategy leverages its geographical closeness and facilitates practical cross-border transactions. Washington demonstrates a commitment to addressing human security concerns, including environmental preservation, health enhancement, education, and training, via the use of scientific information and adherence to international standards (Yoshimatsu, 2015). Washington is committed to mobilizing 'a whole-of-government approach' in providing technical assistance and support for the sustainable development of the region. In the words of Richard Cronin, Senior Associate at The Stimson Center during a hearing session of the United States Senate Committee On Foreign Relations in 2010, 'The United States should not, cannot and does not seek to compete with China,' neither infrastructure assistance nor obstruct the growing economic integration of the ASEAN countries into China's production chain (*Challenges to Water and Security in Southeast Asia*, 2010). In the eyes of Washington, the potential for mutually beneficial outcomes exists in the growth of trade and investment relations between China and its Mekong and ASEAN neighbors, provided that infrastructure projects and activities are conducted in a manner that minimizes exploitation and environmental harm.

CONCLUSION

Transboundary water-related cooperation is seen as a crucial objective among riparian nations along the Mekong River, which is characterized as a ‘shared river with an endangered future’ (Cronin & Hamlin, 2012, p. 1). The MRB has been viewed as a ‘best practise’ case regarding transboundary water management, but it has failed to serve as an ideal example in terms of effectively engaging local stakeholders in decision-making processes related to water development efforts (Lauridsen, 2004, p. 47). The intricate nature of the issue has been heightened by the rapid pace of climate change and an ongoing scarcity of freshwater resources. Although regional countries have made efforts to address shared challenges in water resources management through both legal and institutional arrangements, dealing with difficulties in such issues remains a daunting task for regional nations with varying economic development levels and historical disagreements. At a time when multilateral mechanisms have proven its effectiveness in transboundary water resources management through collaborative efforts, the role of transparency and consultation has emerged as the pivotal elements supporting the problem-solving process. Indeed, the absence of effective coordination among riparian countries in implementing different projects on the river might be a significant issue that exacerbates concerns arising from other developments.

Consequently, should Lower Mekong nations develop a collaborative regional strategy for sustainable water resource management, they can seek solutions for water-related issues with external actors, including China and the United States. Indeed, the lack of coherence among the lower Mekong countries may be attributed to their distinct perspectives on national interests (Cronin & Hamlin, 2012). In the context of upholding state sovereignty, it is important to acknowledge the significance of adhering to the customary international law and international custom in dealing with water-related disagreements. In this regard, the MRC, which represents the lower basin riparian states, has to balance hydropower dam construction for electricity supply and ecosystem preservation for fishery and agricultural production. It is expected that the MRC will continue to serve its significant role as a research and advisory inter-governmental organization for regional riparian countries.

As for Vietnam, the country upholds the principles of ‘inclusion, openness, transparency, consultation, and ASEAN’s centrality’ in its approach to formulating regional frameworks and regulations related to matters such as transboundary water issues (To & Le, 2019, p. 406). During the 2020 ASEAN Chairmanship, Vietnam was unable to effectively prioritize Mekong-related concerns within the association as the COVID-19 pandemic shifted the regional attention to public health and economic concerns (Lee, 2020). Thus, in the post-pandemic period, Vietnam may take a proactive role in fostering cooperation with regional countries to address the pressing challenges related to water resource management in the region. However, the potential for riparian nations to address water-related challenges in the Mekong River hinges mostly on the determination to enhance collaboration and political commitment from regional players and international partners.

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