

Collective Actions and Challenges Analysis on Management of the Mekong River as Common Pool Resources

Ni Nyoman Clara Listya Dewi

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Department of International Relations,
Faculty of Social and Political Sciences
Udayana University, Indonesia
claralistya@unud.ac.id

The countries of the Indochinese peninsula think that the Mekong River is a shared resource that must be managed through cooperation between countries. However, because many countries exploit the resources in the Mekong River, it triggers an increase in environmental degradation. This phenomenon has prompted the establishment of the 1995 Mekong Agreement and the Mekong River Commission (MRC) which aims to agree on cooperation in sustainable development, conservation, and management of resources in river areas. However, as an upstream country, China did not want to join the Mekong River Commission. In fact, China initiated a new collaboration called the Lancang Mekong Cooperation Mechanism (LMCM) in 2016. In the concrete, China has implemented a mega dam construction project which is considered to be a contributor to environmental degradation. By utilizing Garret Hardin's (1968) views on the tragedy of the commons, this paper analyses the challenges, collective actions and efforts of countries in the Mekong River region in overcoming river management and the sources of the tragedy of the commons. Through several characteristics in the management of shared resources by Ostrom (1990) this paper finds that arrangements for shared resources are important to be systematically arranged by the government to prevent the tragedy of the commons. Institutions at the local level are very important to be able to develop appropriate institutional structures that are adapted to the social and economic life of the people along the Mekong River.

Keywords: *Mekong River; tragedy of the commons; common pool resources; collective actions.*

Introduction

For countries in the Indochina Peninsula, the Mekong River plays an important role in people's lives both economically, socially and culturally. The Mekong River as a water resource is also a transboundary common for countries along the river, such as China, Myanmar, Thailand, Laos, Cambodia and Vietnam. The Mekong River as a shared water resource faces a number of other challenges due to its open access. This means that the river can be used by anyone and there should not be

a ban on other parties who want to benefit from these resources.

However, sustainable resource management in the region still faces a number of challenges. One of them is China's reluctance to join the Mekong River Commission (MRC), a cooperative agreement for sustainable development in the Mekong River basin. China refuses to join as a member and prefers to play an observer role. Whereas as the most upstream country, China has used far more river water than other riparian countries, which is believed to be the source of the

problem of drought in the downstream area of the river.

In addition to the reasons above, massive exploitation of resources along the river is a source of tragedy of the commons that can cause harm to the community. Research published in a 2018 report by the Mekong River Commission warned that hydropower development on the river would result in fish stocks declining dramatically, shrinking the total biomass by 35-40% by 2020 and 40-80% by 2040 (Roney, 2021). Natural resources along the Mekong River are a form of common pool resources, where shared resources are considered to be able to provide benefits to a group of people, but these resources will be less useful if each individual pursues his own interests. Common Pool Resources (CPR), is a theory from Garret Hardin's (1968) thesis on the tragedy of the commons. Hardin's perspective departs from the prairie dilemma, how a group of herders consciously destroys a common resource, from which all parties depend on. There is an advantage for every shepherd to put more cattle in it, but the operational and land management costs are passed on to everyone. On the one hand, due to its open access and no strict regulatory mechanism, it is possible for other farmers to include additional livestock in the pasture, causing the pasture to experience overgrazing. This situation then caused the loss of not only one shepherd but all shepherds. Simply put, it can be said that when resources are starting to be limited in number, everyone has their own rationality to utilize these resources to the fullest for their personal gain. On this tragedy, Hardin (1968) concluded

that *"Each man is locked into a system that compels him to increase his herd without limit—in a world that is limited."*

Hardin's view of the tragedy above implies that people will not self-regulate, so a regulatory or institutional system is needed. However, Elinor Ostrom (2000) stated that under various conditions, people can work together to manage resources well. Ostrom also believes that the grassland case is a common pool resource (CPR), which is an open access resource. Ostrom's critique of Hardin's view above is then explained in more depth through a concept called governing CPR. CPR management can be owned by the local or central government in the form of public goods. According to Samuelson's theory of public goods (1954), public goods are goods that can be consumed collectively by more than one individual. Examples are road lighting, internet signals, and public facilities. Samuelson also divides public goods into two types, namely pure public goods and impure public goods. Pure public goods are goods that are non-excludable (no party can be excluded from the consumption of goods) and are non-rivalry (consumption of goods from one party will not reduce the quantity of goods available to the other party). Impure public goods are goods in which one party can be excluded from consumption and the amount that can be consumed depends on the consumption of the other party.

Furthermore, Ostrom also found that CPR can be managed by the community which is very useful to prevent the tragedy of the commons. However, the management of CPR is often faced with a number

of challenges such as over consumption, over fishing or over cutting. This problem occurs because shared resources are continuously exploited without any party paying attention to the sustainability of these resources. According to Clark C. Gibson (as cited in Jensen, 2000) certain types of resources are inherently problematic with regard to property rights management and enforcement. Shared resources are resources that are difficult to exclude external parties, no matter who actually has the right to use those resources. Furthermore, Gibson (2000) also explains that another characteristic of CPR is economic subtractability, which means that whatever is taken by one user reduces what is available to other users. Water resources, in this context the Mekong River, is a shared resource.

Mekong River as Transboundary Commons

Communities along the Mekong River are very dependent on the water, land, and food sources in the Mekong River. As one of the largest river systems in the world and flowing along 4,909 km through six countries; China, Myanmar, Thailand, Laos, Cambodia and Vietnam, the Mekong River is the twelfth longest river in the world and ranks tenth in terms of total volume of rivers. The Mekong River basin stretches for 795,000 km² and crosses the landmass of six riparian countries. The headwaters of the Mekong River flow from the Tibetan plateau, precisely in Qinghai Province, China and flows through Yunnan Province, to countries in Southeast Asia namely Myanmar, Thailand, Laos, Cambodia and Vietnam (Mekong River Commission for Sustainable

Development, 2021). The Mekong River is divided into two watersheds, namely the Upper Mekong Basin (upstream) and the Lower Mekong Basin (downstream). In the upper reaches, it is known as the golden triangle representing Laos, Thailand, Cambodia and Vietnam or known as the Lower Mekong Basin River States (LMRBS). The Mekong River is also the most diversified place after the Amazon. This river provides benefits for the fisheries, agriculture, supporting household needs, as well as transportation and trade routes. The Mekong River basin is also used as a place for the development of hydroelectric energy sources. The Mekong River is also the main water source for people in Laos and Cambodia.

Countries that are crossed by the Mekong River believe that the water in the river is a shared resource that must be managed through cooperation between countries. The institutional mechanism of cooperation among countries along the Mekong River was realized by the 1995 Mekong Agreement and the Mekong Water Resource Assistance Strategy. The 1995 Mekong Agreement signed by Cambodia, Laos, Thailand and Vietnam later formed the Mekong River Commission (MRC). The focus of the MRC is on sustainable development and water management of parts of the Mekong River Basin and associated resources. The MRC is also part of The Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin. This is an agreement between the lower Mekong River states namely Cambodia, Laos, Vietnam and Thailand (LMRBS) which agrees on cooper-

ation in sustainable development, river use, conservation, and related resource management. This agreement was formed as part of a collaborative effort that has been built for 40 years regarding the management of existing resources along the Mekong River. The Basin Development Plan and Strategy, which is part of the agreement contains various useful procedures for sharing water data, monitoring water use, maintaining flow and water quality.

The diversity of social, cultural, and economic preferences of countries along the river basin is a specific factor in determining the transboundary commons management strategy. So that the joint management of the Mekong River must be included in the water governance agenda, which includes governance at the regional and inter-country levels whose coordination cannot be separated. This means that the resources in the Mekong River are the shared responsibility of the local community, government at the local level, the central government to cooperation between countries that are fed by the Mekong River. The local community is very dependent on the flow of river water which is used for fishing activities, agricultural irrigation to trade transportation routes. However, because the Mekong River can be exploited by anyone, there is potential for exploitation that can tend to become a source of conflict. Moreover, conflicts can be exacerbated when there is a geopolitical element of the basin as a natural water flow that binds riparian countries that can sustain state power to shape and support certain political scales (Ming Li, 2013).

Chinese Dominance Over the Mekong

The potential importance of the Mekong River for Indochina countries is also felt by China, where most of the Mekong River area is located in China with the headwaters of the river in the Tibetan plateau. Since 2009, China has built 11 of the largest dams in the world and plans to build more along the Mekong River. The three giant dams built by China are: Miaowei, Xiaowan, and Jinghong, which are estimated to hold more than 47 billion cubic meters of water and can generate 21,000 megawatts of electricity (Mekong River Commission, 2021). However, China did not want to join the Mekong River Commission.

In fact, China initiated a new collaboration called the Lancang Mekong Cooperation Mechanism (LMCM) in 2016. The LMCM was formed with the aim that China could take full governance of water from the dam it built with other downstream countries. China's initiative to build a dam in the Mekong River area is part of China's Belt Road Initiative (BRI) implementation.

BRI is China's global infrastructure development strategy that was initiated in 2013. This grand strategy aims to increase China's strength in the global market by investing in several countries as well as international organizations. In addition, through the BRI strategy, China can strengthen its influence in the Asian region by establishing the Silk Road Economic Belt which aims to build a trade network. So, the improvement of infrastructure that includes the corridors of the Chinese peninsula and Indochina is considered a priority.

The tragedy of the commons situation arising from China's construction of dams along the Mekong River seems to threaten the livelihoods and socio-cultural structures of communities, such as Thai villagers living along the river (Ming Li, 2013). The construction of the dam intended for power generation has in fact caused great damage to water and land flows around the Mekong River. This development not only causes an imbalance in the flow of the Mekong River, but also blocks the flow of water in the Brahmaputra River which is the lifeblood of the countries of Bangladesh and India (Indra, 2020).

The construction of dams carried out by China in the upstream area causes drought in the downstream due to reduced water flow. Dams on the Mekong River built by China hold large amounts of water and cause droughts for downstream countries. However, the Chinese government rebuffed and said that the drought was not due to the construction of dams, but because of low rainfall and the El Nino disaster (Fuqiang & Liu, 2016). The tragedy of the commons due to the exploitation of the dam built by China on the potential of the Mekong River has caused ecological impacts, social and economic changes for communities along the river.

Changing river ecosystems make it increasingly difficult for people to manage the agricultural and fishery sectors. As a result, these sectors are no longer able to guarantee the sustainability of people's livelihoods.

Collective Actions for Mekong River Management and Its Challenge

In order to prevent the spread of adverse impacts due to the exploitation of the potential of the Mekong River, a solution is needed in the form of CPR governance as described by Ostrom 'governing CPR'. Joint actions to protect the Mekong River have been formulated in the Plan for Protected Areas and Development in the Four Countries of the Lower Mekong River Region, which was formed by four countries in the Indochina region and the international community, but does not include China. To maintain the sustainability of the region, the four countries conducted research on several things that were considered important for the management of shared resources in the Mekong River, such as; the distribution of the growing human population, the relationship between poverty and environmental degradation, issues of water and fisheries, energy, regional forests, agriculture, tourism potential to the formulation of initiatives that can be used to reduce tensions that may occur between countries, in relation to river management.

In addition, another example of awareness of collective action for forest conservation in the Mekong River area is the collaboration of The International Tropical Timber Organization (ITTO) with Thailand, Cambodia and Laos through the Management of the Pha Tam Protected Forests Complex to Promote Cooperation for Trans-Boundary Biodiversity. Conservation between Thailand, Cambodia and Laos Project. This project focuses on transboundary forest and biodiversity monitoring.

The Mekong River area as a trans-boundary protected area (TBA), can definitively be explained as a land and/or sea area that crosses one or more boundaries between states, sub-national units such as provinces and regions, autonomous regions and/or areas beyond borders. national sovereignty and jurisdiction, parts of which are specifically dedicated to the protection and maintenance of biological diversity, and related natural and cultural resources, and are managed cooperatively through lawful or other effective means (ICEM, 2003).

Moreover, the existence of the Mekong River involves cross-border boundaries. Therefore, in the planning and implementation of joint resource management actions, several important aspects are needed, such as political, technical and resource management aspects. This cross-border conservation initiative is crucial because forests in river areas are interconnected between countries. As in recent years, district authorities in Tay Ninh Province, Vietnam have held monthly meetings with their Cambodian counterparts to discuss issues of mutual concern, such as trade and cross-border security along the Mekong River (ICEM, 2003).

However, the action does not stipulate how the strategy can be carried out if there is domination of one country over all resources in the Mekong River area, such as the domination of China through the construction of dams.

Referring to the damage to the ecosystem in the Mekong River area, it can be said that the damage is a problem of a complex system, which includes the institutions and

social systems of the local community. The existence of complex systems in CPR raises attention to the properties of social and ecological systems that are not included in top-down decision making (Holling, 2001). So, it is necessary to regulate the resources that cover many aspects such as social, economic and political systems in an institution. According to Ostrom (as cited in Jensen, 2000), there are several characteristics in the management of shared resources. First, there is a need for a clear definition of who is entitled to use the resource and who is not. Second, everyone needs to understand that their contribution in managing and maintaining resources must equal the benefits received.

This means that there is a need for rules governing community obligations and rules about when and how resources are used that are adapted to local conditions. Third, every individual who is affected by the existence of the rules has the opportunity to participate in changing the rules. Fourth, resource utilization as well as compliance with existing rules must be actively monitored even by the users themselves. Fifth, everyone who violates the agreement and the rules has the right to get sanctions. Sixth, local institutions also play a role in mediating the possibility of conflict. Seventh, authorities from external governments do not have the authority to interfere in resource management schemes developed at the local level. Finally, that the resource management system is part of a larger system, which is then organized into smaller institutions at the local level.

From some of the characteristics described by Ostrom (2000), above, it is import-

ant that the arrangement of shared resources be arranged systematically by the government to prevent the tragedy of the commons. Institutions at the local level are very important to be able to develop appropriate institutional structures that are adapted to the social and economic life of the people along the Mekong River.

The implementation of the rules in the joint resource management plan must also pay attention to the patterns of interaction between actors. Actors involved in the management of CPR are not only actors at the local level. In the case of the Mekong River, the actors involved are also state actors, especially the countries through which the Mekong River flows. Bottom-up interaction is needed to facilitate coordination between institutions regarding the rules for managing shared resources. However, the presence of China with all its power is another challenge for the countries of the Indochina region.

Another aspect that must be considered in managing shared resources is a collaborative approach between actors and institutions at the local and central levels. The collaborative approach is meant by not ignoring the knowledge of local communities regarding resource management and environmental issues. There are social and cultural aspects that have been rooted in the community, which have become knowledge that is trusted and held by the local community, for example the life of the people in Chiang Khong, Thailand who depend on the sustainability of their livelihoods from the Mekong River.

Cross-border agreements or agreements, ultimately require a joint commitment to implement them. An understanding is needed that the existing resources need to be managed together and their use regulated so as not to cause over exploitation which can become a source of even greater disasters in the future. Countries in the Indochina region must also start thinking about China's dominance in the region.

Reflecting on the problems above, it is particularly important to manage the Mekong with a strong self-governing system. Involve the community in planning, changing rules, checking resource management to support the implementation of more fair use of resources in the region for the community. Community understands its environment and is considered experience creating organizations and institutions and has little external government interference. By involving more local communities in its management, there is a clear definition of who has the right to use resources and who is not included in the resource use limits. This is one way to encourage co-management of resources. Rules about when and how resources can be decided jointly by the community and those who violate them can be subject to sanctions or disciplinary action. Involving local stakeholders in resource management schemes will limit the intervention of external parties developed at the local level. Indirectly it will become a complete arrangement of who and how shared resources can be used. According to Ostrom (1990), there are several criteria that figure out success when the management of resource management is managed

jointly by the community. One of them is the existence of a clear definition of who has the right to use the resource and who does not. Communities that use resources must understand that their contribution to managing and keeping the resource must be fair to themselves. Rules can be formed; communities can regulate people's obligations and formulate rules about when and how resources are used and adapted to local conditions. In this context, Ostrom (1990) also emphasizes the role and presence of local institutions to resolve conflicts quickly. Social, economic and environmental consequences can occur, especially when resource users in the Mekong River do not coordinate sustainable behavior. For this reason, it is necessary to apply a management mechanism that supplies compensation to the state, community or institution for socially and economically sustainable conservation and use behavior.

Conclusion

In conclusion, the construction of dams in the Mekong River area has both good and bad impacts at the same time. Hydropower development on the other hand is designed to meet the needs of new and renewable energy which is considered more environmentally friendly and able to increase socio-economic benefits for the community around the river. On the other hand, the imbalance in the ecosystem resulting from development shows the ignorance and lack of understanding of multi-stakeholders around the river area. An important effort to be intensified is to involve many sectors in cross-border water management research.

Like other countries, political economy stability is determined by water security. Building trust and cooperation between countries must also be accompanied by an understanding of rights and responsibilities in protecting the area around the river. China's actions, which are considered to be hegemony over water over downstream countries, have created an unprecedented challenge for riparian countries. As a country that has a major role in the construction of dam projects, China needs to realize the importance of cooperation to map out a long-term strategy for sustainability around river areas. This is because large-scale environmental degradation in the region is also triggered by regional instability and tension, which in turn can threaten regional security. China's reluctance to join the MRC is a form of coordination instability among river basin countries. Whereas the initial dream of the 1995 MRC Agreement was the establishment of international cooperation and equitable distribution of water resources for countries around river areas. This effort will not work if there is no strategic collaboration to prevent the worst impacts of ecological damage due to Mekong River policies that vary from country to country.

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