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Some Solutions to Enhance the Effectiveness of Cooperation in The Development of Mekong River Water Resources

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ABSTRACT: Based on the analysis of the limitations in water resource development cooperation in the Mekong River Basin presented in the article titled "Multilateral Cooperation on the Development of Mekong River Water Resource from 2003 to 2023," published in the *International Journal of Education and Social Science Research* (Vol. 8, Issue 3, May–June 2025), this paper focuses on examining the key benefits that water cooperation brings to the Mekong countries and the entire basin. Building upon that, the author proposes a number of core solutions aimed at enhancing the effectiveness of future water resource development cooperation in the Mekong River Basin.

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INTRODUCTION

Enhancing cooperation in the development of Mekong River water resources has become an urgent priority to meet the growing development demands of riparian states and the broader basin region. Effective cooperation holds the potential to deliver mutual benefits to all stakeholders, with the overarching aim of ensuring water security and fostering sustainable development for both riverine communities and the entire Mekong basin. Nevertheless, current cooperative efforts remain constrained by divergent national interests, which have led to unilateral water usage practices and infrastructure projects that generate negative transboundary impacts, particularly on downstream countries[1]. To overcome these challenges and improve the effectiveness of existing multilateral mechanisms, Mekong countries and their development partners must adopt a comprehensive approach, focusing on three strategic pillars: cooperative water utilization, integrated water resources management, and the joint protection of water resources.

1. Benefits of Cooperation in the Development of Mekong River Water Resources

**** Effective management and utilization of water resources***

First, water cooperation in the Mekong River Basin enables riparian countries to achieve equitable allocation of water resources. As an international river, the Mekong's water resources are a shared asset among the basin countries. Tens of millions of people living along the river depend on its water and related resources for their livelihoods and daily survival. Therefore, ensuring a fair distribution of water among countries in the basin is essential to guaranteeing equitable access for riverine communities and promoting the harmonious and sustainable development of the entire region.

Second, cooperation among Mekong River Basin countries can help ensure balanced water usage. Mekong water cooperation can promote equilibrium in water utilization across nations, preventing overexploitation and mitigating environmental degradation. Enhanced collaboration in water use provides an opportunity for riparian countries to assess seasonal water demands and consult with one another regarding water-related activities. This, in turn, enables coordinated and efficient use of the Mekong's water resources, helping to avoid waste and inefficiency. Moreover, regular consultations can guide countries toward rational and effective water use practices that do not place undue pressure on their neighbors. As a result, cooperation helps ensure that each country secures an adequate water supply to support its socioeconomic development.

[1] As mentioned in the author's article entiled "Multilateral cooperation on the development of Mekong river water resource from 2003 to 2023", International journal of education and social science research, Vol. 8, Issue.3, May-June 2025, pp. 236-252.

**** Environmental protection and risk reduction***

Water cooperation is a global trend that is increasingly gaining the attention and support of both national governments and international organizations. Through water cooperation mechanisms in the Mekong River Basin, development partners can provide technical assistance to riparian countries, helping them adopt new technologies for water monitoring and control, as well as improve the performance of measurement and surveillance equipment. These efforts contribute to enhancing the efficiency of water monitoring and regulation-particularly in terms of water quality-and ensure that water resources are exploited and utilized in a rational manner that does not cause adverse environmental impacts.

In the face of climate change, countries in the Mekong region in particular, and the world in general, are encountering significant risks and challenges posed by extreme weather events driven by climate change. Ensuring water security for countries within the Mekong River Basin is essential to strengthening their resilience and adaptive capacity. Accordingly, water cooperation plays a critical role in enhancing water security, thereby improving countries' overall resilience and reducing the adverse impacts of extreme weather phenomena such as droughts, saltwater intrusion, floods, and wildfires. Moreover, water cooperation also serves as a catalyst for broader collaboration among riparian states in the field of climate change adaptation, ultimately contributing to improved climate resilience for communities throughout the basin.

**** Ensureing the harmonious and sustainable development of the entire basin, while maintaining a peaceful and stable political-security environment and reducing tensions in diplomatic relations among the riparian countries.***

Cooperation helps promote the equitable, rational management, use, and allocation of Mekong River water resources, thereby ensuring that riparian countries have sufficient water to implement their economic and social development plans and goals. As such, cooperation plays a vital role in fostering inclusive and sustainable development across the entire Mekong River Basin. Water cooperation mechanisms-especially multilateral cooperation-provide platforms for riparian states to engage in dialogue and exchange on conflicts of interest related to the exploitation and use of Mekong water resources. These mechanisms help minimize the negative impacts of upstream water use on downstream countries, reduce tensions in diplomatic relations among basin states, stabilize the political and security environment, and help maintain peace and stability throughout the basin.

2. The objective of cooperation

The overarching objective of sustainable water cooperation in the Mekong River Basin is to ensure water security in pursuit of sustainable development for the entire basin and all riparian communities. Ensuring water security means guaranteeing that all riverine populations have sustainable access to sufficient quantities of water of acceptable quality to support their livelihoods, daily life, and socioeconomic development; to cope with water-related disasters; and to preserve ecosystems-within a peaceful and stable political environment. Therefore, the aim of ensuring water security in the Mekong is to sustainably meet the water needs of people throughout the basin.

3. Solutions to enhance the effectiveness of cooperation for the sustainable development of water resources in the Mekong River Basin

Currently, numerous water cooperation mechanisms exist within the Mekong sub-region. However, such cooperation still faces limitations and shortcomings, resulting in the management, use, and protection of water resources falling short of desired outcomes. In order to enhance the effectiveness of cooperation in the development of the Mekong River's water resources, future collaboration among the riparian countries should focus on implementing several specific solutions, including the following:

First, develop a water resource management plan for the Mekong River based on the specific needs and exploitation potential of each country.

At present, the Mekong countries still possess considerable land potential, and climatic conditions are generally favorable for agricultural development. Meanwhile, population growth and the rising demand for food in the Mekong River Basin are expected to intensify in the coming years. As a result, the expansion of agriculture is anticipated to be one of the top priorities in the socioeconomic development plans of the riparian countries. However, the growth of agriculture will lead to increasing water demand across the basin, as agriculture is a water-intensive economic sector. These factors contribute to a significant projected increase in water demand among the Mekong riparian countries in the future. Specifically:

For China, current water demand in the Lancang-Mekong Basin is already substantial. Driven by population pressure and socio-economic development needs, China has been increasingly exploiting the river's water resources, primarily for hydropower development. As of now, China has completed and commissioned 11 major hydropower dams on the mainstream of the Lancang-Mekong River and continues to develop more. Therefore, China's future water demand from the Mekong River is expected to increase considerably.

In Northeastern Thailand, the region has approximately 9 million hectares of land potentially suitable for agricultural development, of which only around 2 million hectares have been utilized thus far. About 1.2 million hectares currently rely on Mekong water resources. Consequently, the demand to extract additional water from the Mekong to expand agricultural activities in this region is likely to grow significantly.

For Laos, due to geographical constraints and underdeveloped irrigation infrastructure, current agricultural water demand remains relatively low. However, in the future, this demand is expected to rise as irrigation systems improve and population pressures increase. Although Laos has not yet extensively used Mekong water for agriculture, its national strategy to become a major electricity exporter means that water demand for hydropower production is relatively high.

In Cambodia, approximately 72% of the Mekong Basin within its territory is assessed as having high agricultural potential. Water demand is expected to increase as Cambodia expands its agricultural land. Moreover, Mekong water resources are critically important for the country's fisheries, which play a vital role in the livelihoods of communities dependent on fishing. Therefore, when countries in the Mekong Basin plan for water use, they must carefully balance and harmonize the interests of all stakeholders while ensuring the protection of water-related resources.

As for Vietnam, particularly the Mekong Delta, the region holds enormous potential for agricultural development. Currently, about 99% of the basin area is already used for agriculture. The expansion of farmland and increased crop intensity have driven-and will continue to drive-higher water demand in the delta. Additionally, water-related resources such as sediment (for land formation and fertility) and aquatic biodiversity (especially fisheries) are of significant socio-economic importance for the region.

Therefore, to ensure equitable and efficient access to and use of water among riparian countries, the Mekong nations must focus on developing an integrated water resource management plan to guarantee that all riverine communities have sufficient water for both domestic use and economic activities. When formulating a water management plan for the Mekong River, countries should take into account the river's specific hydrological characteristics. For agriculture, the Mekong River generally provides adequate water during the rainy season to meet the irrigation needs of riparian countries. However, during the dry season, water availability is significantly lower. Thus, to ensure that communities have sufficient water to meet both residential and economic demands, appropriate water allocation strategies between countries must be established.

Another important point is that riparian countries have different water use priorities. Therefore, close coordination and cooperation are essential in designing water allocation and usage plans to ensure that one country's water use does not hinder the water access and usage of another-particularly in the context of upstream and downstream dynamics.

Second, actively apply modern science and technology to the monitoring and management of Mekong River water resources to ensure their efficient use and to prevent environmental harm.

Based on the development of a comprehensive plan for water resource management, the riparian countries of the Mekong River need to strengthen cooperation in monitoring water usage by each country. The purpose of such monitoring is to ensure that all nations comply with agreed-upon regulations governing the management of transboundary water resources and to enhance the overall effectiveness of water resource governance.

To ensure effective cooperation in the monitoring and control of water use, riparian states should promote the application of modern science and technology. This includes assessing and monitoring the impacts of water use activities on other countries within the basin, tracking environmental impacts, monitoring water quality, and observing hydrological changes caused by water exploitation. Advanced monitoring systems can support data transparency, promote trust among stakeholders, and enable timely responses to emerging issues in the basin.

Building upon the development of an integrated water resource management plan, riparian countries need to strengthen cooperation in monitoring the use of Mekong River water resources within each country. Monitoring water usage is essential to ensure that each nation adheres to established regulations on transboundary water resource management and to enhance the overall effectiveness of water governance. To ensure effective cooperation in monitoring and controlling water resources, Mekong countries should promote the application of modern science and technology to assess and monitor the impacts of water use activities on other riparian states, to track environmental impacts, monitor water quality, and observe hydrological changes resulting from water use. The application of advanced technologies in monitoring water usage as well as in water quality control will help ensure efficient oversight, enable timely assessment of new developments, and address emerging issues throughout the water use process.

To ensure effective monitoring and control of water resources, a comprehensive monitoring system is needed-one that operates daily during the dry season and weekly during the rainy season. In the coming period, Mekong countries should prioritize cooperation in the research and development of a basin-wide monitoring system that can be uniformly applied across the entire Mekong River Basin at the lowest possible cost, thereby ensuring accessibility and feasibility for all riparian countries. In addition, Mekong nations should also strengthen technical cooperation with their development partners to leverage external investment resources for the development of infrastructure supporting the monitoring and management of water resources.

Third, strengthen cooperation in the exchange and sharing of information and data.

To effectively manage transboundary water resources, data collection and information sharing among riparian countries are of paramount importance. Since 2003, the Mekong River Commission (MRC) has played an active role in establishing channels for information and data exchange among member countries and development partners. Data sharing among MRC member states has been conducted regularly, with relatively broad access to relevant datasets. However, information sharing between the MRC and its dialogue partners-particularly China and Myanmar-remains limited. Despite being upstream countries, neither China nor Myanmar is a full member of the MRC, making cooperation on data and information exchange challenging, especially with China. China

controls a significant portion of the Mekong River's headwaters, and the river's downstream flow is heavily influenced by the operation of Chinese hydropower dams along the mainstream. Therefore, data provided by China is critically important for planning and implementing socio-economic development programs in downstream countries.

Among the current multilateral cooperation mechanisms in the Mekong River Basin, only the Lancang-Mekong Cooperation (LMC) framework brings together all six riparian countries. As such, for data and information sharing to be truly effective, the MRC must coordinate and cooperate closely with the LMC. This approach would leverage the strengths of both mechanisms: while the MRC focuses on water cooperation, the LMC benefits from the full participation of all six countries. Establishing a collaborative mechanism for data and information exchange through MRC-LMC cooperation would help ensure more frequent and comprehensive sharing of information across the entire basin.

Cooperation between the MRC and LMC should also focus on assessing socio-economic conditions, particularly the livelihoods of riverine communities dependent on the Mekong River and its associated water resources. This would help evaluate the impacts of water use on economic development, environmental sustainability, and community livelihoods, thereby informing both the MRC and LMC in devising strategies to mitigate transboundary impacts of national water usage.

In the near term, the MRC and LMC must collaborate more closely to ensure transparency in reservoir storage levels and the operational data of hydropower facilities throughout the Lancang-Mekong Basin. This is essential for enabling downstream communities to prepare for and adapt to hydrological changes. In particular, downstream countries should capitalize on MRC and LMC platforms to encourage China to expand the sharing of hydrological data during the dry season. In the long term, the MRC and LMC should jointly develop strategic plans and coordinated responses, including flood and drought management strategies, as well as capacity-building initiatives to ensure adaptive and integrated water resource management in the face of changing basin conditions.

Effective management of transboundary water resources requires data collection and information sharing among riparian countries to play a central role. In the immediate term, riparian states need to strengthen cooperation to ensure the sharing of reservoir storage levels and hydropower operation data across the entire Lancang–Mekong River Basin, enabling downstream communities to better prepare for and adapt to changes. In particular, downstream countries should seize opportunities for cooperation to encourage China to expand the sharing of hydrological data throughout the dry season. To ensure that data and information exchange is truly effective, such information must be updated regularly and shared in a timely manner with all Mekong countries.

One of the key issues to address in data and information sharing cooperation is the need for stakeholders to establish a transparent and regular data-sharing mechanism. Countries should work together to develop a shared water resource database, including information on river flow, water quality, rainfall, and water use activities (such as hydropower dam construction). The data should be updated periodically and shared in a transparent and publicly accessible manner.

Therefore, in the coming period, Mekong countries should prioritize cooperation in research and the development of a basin-wide, standardized monitoring system that is cost-effective and accessible to all riparian states. In parallel, Mekong countries must enhance technical cooperation with their development partners to mobilize financial and technological resources for building the necessary infrastructure to support water monitoring and control.

Currently, Mekong countries have established cooperative frameworks with several regional and international partners, including the United States, Japan, South Korea, India, and various development agencies such as the United Nations and the Asian Development Bank (ADB). These partners have expressed strong interest in supporting the Mekong subregion. In practice, many of them have actively backed water-related projects within the basin. However, cooperation between Mekong countries and some of these partners remains limited and lacks substantive engagement. Given that most development partners have considerable financial capacity, advanced technology, and high levels of institutional development, Mekong countries should give greater priority to enhancing water cooperation with these actors in the coming years. This includes maximizing external support in terms of technical assistance, financial investment, and policy advice.

In addition to strengthening external partnerships, Mekong countries must also deepen intra-regional cooperation in sharing experiences and technologies for water monitoring. Safeguarding the Mekong River's water resources is a shared concern among all basin countries. As such, cooperation among riparian states is not only imperative but also the most crucial factor determining the success of water resource management in the Mekong Basin. To ensure effective cooperation, the countries must first demonstrate goodwill in sharing information and monitoring technologies with one another. Furthermore, they should establish institutional mechanisms to facilitate regular and sustained information and knowledge exchange.

Fourth, it is necessary to enhance water use efficiency by revising and supplementing the Procedures for Notification, Prior Consultation and Agreement (PNPCA).

Currently, under the Procedures for Notification, Prior Consultation and Agreement (PNPCA), the consultation period for water-related projects is limited to six months. This timeframe is insufficient for MRC member states to comprehensively assess the potential social and environmental impacts of such projects. Therefore, the first necessary reform to the PNPCA is to extend the prior consultation period to a minimum of one year. For large-scale projects with significant transboundary impacts, the consultation

period may need to exceed one year. In other words, the MRC should adjust the consultation timeline based on the scale and potential impacts of the proposed project.

If MRC member countries are reluctant to extend the official consultation timeline due to concerns about project implementation schedules, one feasible solution is for the proposing country to notify the MRC of its intentions as early as the project planning stage. This would allow other member states more time to conduct thorough studies and assessments of potential transboundary and cumulative impacts.

Moreover, the MRC could consider establishing a flexible mechanism that allows for the extension of the consultation period in cases requiring additional scientific evaluation or broader public consultation. While setting a standard timeframe is essential for maintaining consistency in the consultation process and facilitating project planning by the proposing country, a degree of flexibility should be introduced to accommodate evolving regional and global conditions, especially given the increasing complexity of climate change impacts.

Amending the principles and procedural rules of an international organization is inherently challenging, as it requires the consensus of all member states. Therefore, in order to reduce institutional inertia and enhance adaptability to future developments, any principles adopted should anticipate potential changes and incorporate built-in flexibility in their implementation.

In addition, the provisions regarding the extension of the prior consultation period under the PNPCA must be clarified to avoid divergent interpretations among MRC member countries. The PNPCA currently stipulates that the Joint Committee may, "if necessary," grant an extension to the consultation period. However, this raises several questions: What constitutes a “necessary” condition for extension? Is the extension mandatory once a request is made? And who holds the authority to make the final decision? The ambiguity of this principle has led to varying interpretations that often reflect each country’s position. Some countries consider the six-month period as a strict and non-negotiable limit, while others-typically downstream countries-argue that they should have the right to request an extension, particularly when technical documentation is incomplete or when additional time is needed for community consultations.

Therefore, the MRC should establish a more structured mechanism for extending the consultation period. On this issue, Alistair Rieu-Clarke has suggested that the MRC Secretariat could serve as the final decision-making body on the extension of prior consultations, or that an independent third party could be empowered to play a more decisive role. Accordingly, the MRC should revise the PNPCA to include detailed provisions guiding the process of consultation extensions. These provisions should clearly identify the conditions under which an extension would be warranted, such as incomplete project documentation, unresolved technical disagreements, the need for further independent environmental impact assessments, or the presence of significant concerns raised by MRC member states or affected communities.

Furthermore, the PNPCA should specify the duration of any extension and the number of extensions that may be granted. The process for making an extension decision must also be clearly defined. For example, a request to extend the consultation period could be submitted to the Joint Committee or MRC Secretariat, and within 30 days, the MRC would be required to convene a meeting to review and decide on the request. Any extension should be approved by consensus among all MRC member countries, excluding the project proponent.

To ensure consensus-building within the MRC, the organization must also uphold principles of transparency and accountability throughout the extension decision-making process. This means that any decision to extend should be publicly disclosed, along with the justifications for the extension. Timely communication of this information to stakeholders-including civil society organizations and local communities-is essential to enhancing accountability and fostering trust among all parties involved.

Fifth, it is important to strengthen community consultation in water-related activities undertaken by riparian countries.

Most large-scale water projects on the Mekong River have transboundary impacts, and riverine communities are often the most directly affected by these projects. Therefore, to minimize the negative impacts on these communities, it is essential to conduct broad and inclusive public consultations. Riparian countries, along with existing water cooperation mechanisms within the basin, should establish forums that enable local communities from different countries to meet, exchange ideas, discuss shared concerns, and communicate their aspirations to policymakers.

Sixth, Mekong countries must strictly adhere to the general principles governing the management, utilization, and protection of transboundary water resources, as stipulated in international conventions and treaties such as the 1997 United Nations Watercourses Convention, the 1966 Helsinki Rules, the 1995 SADC Protocol on Shared Watercourses, and the 1995 Mekong Agreement.

Currently, there is no universally applied set of rules governing water use activities across all riparian states in the Mekong sub-region. In practice, the Mekong Agreement and the Procedures for Notification, Prior Consultation and Agreement (PNPCA) are established by the Mekong River Commission (MRC) and apply only to its member countries. Meanwhile, the two upstream countries-China and Myanmar-are only dialogue partners of the MRC and do not apply the PNPCA when implementing their water projects. This lack of participation by upstream countries significantly undermines the effectiveness of water cooperation in the Mekong River Basin.

At present, the international community has established a number of fundamental principles for the utilization of transboundary water resources to ensure equitable and efficient access to water for all riparian countries. Therefore, MRC member states should engage in research and negotiations with China and Myanmar to develop a set of shared principles governing the use of Mekong River water resources. At the very least, efforts should be made to persuade China and Myanmar to adhere to the water utilization principles outlined in the 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses.

The fundamental principles of water use that have been adopted and should be applied to all Mekong countries include:

(1) The principle of equitable and reasonable utilization. This principle grants each riparian state the right to a reasonable and equitable share of the water resources for beneficial uses within its territory (Article 5 of the 1997 United Nations Convention on the Law of the Non-Navigational Uses of International Watercourses). Equitable and reasonable utilization is based on the concepts of common sovereignty and equality of rights, and does not necessarily imply an equal division of water resources. In determining equitable and reasonable sharing, relevant factors such as the geography and hydrology of the basin, the population dependent on the water, economic and social needs, existing water use, potential future needs, climatic and ecological considerations, and the availability of alternative resources should all be taken into account (Article 6 of the 1997 UN Watercourses Convention). This principle requires a balanced consideration of interests to meet the water needs and usage purposes of each riparian country.

(2) The obligation not to cause significant harm. Under this principle, no state within an international watercourse basin may utilize water resources within its territory in a manner that causes significant harm to other riparian states or their environments. This includes harm to human health or safety, interference with beneficial uses of water, or damage to aquatic ecosystems.

This principle is widely recognized under international water and environmental law. However, in applying this principle, Mekong countries need to clearly define what constitutes "significant" harm and establish objective criteria for assessing such harm.

Seventh, adopt an innovative approach to water resource protection cooperation.

In water resource cooperation within the Mekong River Basin, riparian countries have commonly adopted a top-down approach. While this method tends to be effective for large-scale water utilization cooperation and integrated water resource management, it is less effective when it comes to the protection of water resources. In this context, a bottom-up approach tends to yield better outcomes.

In reality, effective protection of the Mekong River's water resources requires active participation from a wide range of stakeholders-individuals, organizations, communities, and national authorities. Therefore, a coordinated effort involving all these actors is essential. The role of national governments should be to establish cooperation mechanisms that enable participation from all stakeholder levels in the protection of water resources.

Water resource protection should begin at the individual level and extend through organizations and communities to national efforts. To effectively protect water resources, riparian countries need to establish multi-level agencies or coordinating bodies to manage and safeguard water resources within their territories. At the regional level, countries should create joint cooperation mechanisms to implement environmental protection projects related to water resources.

Eighth, enhance communication and raise public awareness regarding the use, management, and protection of water resources.

One of the key challenges to water quality and the aquatic environment stems from small-scale water projects. Although the environmental and water quality impacts of these small projects can be significant, they are often difficult to quantify. Notably, such projects are typically implemented by local residents and riparian communities. Therefore, a critical solution to safeguarding water environments lies in raising public awareness and promoting responsible water usage, management, and protection at the community level.

The objective of this set of solutions is to elevate public and community understanding of the value of water, to change behaviors characterized by careless, wasteful, and inefficient water use, and to foster a sense of individual responsibility. Each person should see water conservation and protection as part of their daily routine and collective responsibility. The ultimate aim is to instill habits of using water efficiently and sustainably.

Improving awareness and cultivating a sense of responsibility in water use, management, protection, and development is essential, especially in the context of increasing pressures on water resources. Previously, a common perception-particularly in Vietnam-was that water is an inexhaustible and renewable resource. Coupled with abundant water availability in the Mekong River Basin during the rainy season, this view has led to widespread wasteful water practices among riparian residents. However, current realities demonstrate that freshwater-especially water of acceptable quality-is not limitless and is increasingly scarce due to human activities and the impacts of climate change.

Given this situation, Mekong countries must adopt measures to transform public perception of water's role and value, the status of water resources, and the current and emerging challenges facing the Mekong River's water resources. Only through such transformation can water be used efficiently and sustainably, and the protection of this critical resource be assured.

Promoting the dissemination of water resource assessment reports and applying market-based water pricing to raise awareness of water's value.

To enhance awareness regarding the value of water, Mekong countries should adopt water pricing mechanisms based on accurate valuation, full cost recovery, and market principles. Among institutional and policy solutions, a critical proposal is to price water according to its true value and in alignment with market mechanisms. Accurately reflecting the real value of water in pricing is a key factor in shifting public and community perception, as price serves as a powerful indicator of value. Therefore, each country should implement water pricing that reflects its actual economic value and is consistent with market rules.

It is also essential to increase the dissemination of information to the public regarding the role, value, and economic efficiency requirements of water resources. Public communication and educational campaigns promoting water conservation should be intensified through mass media, social networks, and digital platforms. In addition, riparian countries may organize competitions to solicit innovative ideas and solutions for efficient water use, and these initiatives should be widely shared and promoted through media and the internet.

In the Netherlands, for example, the government holds design competitions when planning water management infrastructure to harness public creativity and engagement. Similarly, if Mekong countries initiate contests to generate ideas for water-saving solutions, this approach would not only yield practical innovations but also foster broader public awareness and advocacy for water conservation. Such efforts can significantly contribute to enhancing public understanding and fostering a sense of shared responsibility in water use and protection.

Enhancing digital dissemination, public engagement, and technical guidance on water resources in the Mekong Basin. The Mekong River cooperation mechanisms should utilize digital platforms, including official websites, to publish information on water-related studies and assessments. In the context of increasing internet penetration, this represents an effective communication channel, enabling the public to access and retrieve water-related data and findings conveniently. Moreover, efforts should be made to broaden the public availability of research, reports on water resources, and water-saving technologies through a process of knowledge socialization.

Drawing on international best practices-for example, the World Bank's approach of publishing reports and studies as affordable books-Mekong countries and water cooperation mechanisms (especially the Mekong River Commission, or MRC) could consider producing small guidebooks, such as water handbooks or manuals on water-efficient practices, and distributing them free of charge to communities throughout the basin.

Additionally, there is a need to enhance technical guidance for local populations on the circular use of water and promote environmentally sustainable water practices. Such guidance should be incorporated into agricultural extension and technical training sessions for farmers. Agriculture and fisheries, which are among the highest water-consuming sectors, also contribute significantly to water pollution across river systems, canals, and tributaries in the Mekong Basin. Therefore, farmers should receive specific training on safe and efficient water usage techniques that minimize environmental impact.

Each year, Mekong countries should designate a specific action theme for the protection and sustainable development of water resources, aligned with the activities of World Water Day, in order to intensify public communication and awareness-raising efforts on water resource protection. Furthermore, the rich water-based cultural heritage of the Mekong sub-region presents an opportunity to integrate environmental protection efforts with eco-tourism. Such an approach would not only promote regional riverine culture but also raise public and tourist awareness of the importance of protecting freshwater ecosystems.

Ninth, establishing a coordination mechanism among riparian countries to respond to water-related emergencies.

A coordinated emergency response mechanism should be developed among Mekong riparian states to safeguard the river and mitigate the adverse impacts of water-related incidents on ecosystems and local communities. The Procedures for Water Quality (PWQ) also mandate the four MRC member countries to prepare emergency response mechanisms for pollution incidents such as oil spills or the discharge of hazardous wastewater. However, most MRC members face limitations in terms of resources and overall development capacity.

To ensure effective emergency response, it is essential that Mekong countries build a joint coordination mechanism that enables the mobilization of collective resources in the event of emergencies. Enhanced cooperation in responding to water-related incidents will produce more effective results and help reduce potential transboundary impacts on other countries sharing the river system.

CONCLUSION

Cooperation in the development of the Mekong River's water resources will enable riparian countries to achieve an equitable distribution of water, ensure balanced usage, protect the environment, and mitigate associated risks. Such cooperation contributes to the harmonious and sustainable development of the entire basin, helps maintain a peaceful and stable political-security environment, and reduces tensions in diplomatic relations among countries in the region. To enhance the effectiveness of water cooperation in the Mekong River Basin, it is essential to implement a comprehensive set of measures aimed at the management, utilization, and protection of the river's water resources in a coordinated and integrated manner.

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