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Deepening Inclusive Water Diplomacy Through Water Data Sharing on the Mekong-Lancang River

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Key policy messages

- In the Mekong-Lancang basin, intergovernmental scientific water data sharing has progressively expanded between governments since the early 1990s as an outcome of water diplomacy efforts. Much of this scientific water data has been made public via online platforms.
- Water data underpins water diplomacy, including through trust building and providing evidence. It is crucial in the Mekong-Lancang basin given changing river conditions due to large dam operations, climate change and other development trends that have intensified hydropolitics in recent years.
- As water data is increasingly shared between states, more emphasis also needs to be placed on effective and timely communication of water data to riparian communities including advanced warnings on changing river conditions due to upstream dam operations.
- For a more comprehensive evidence base informing water diplomacy, the scope of water data shared should be expanded to include more monitoring stations and more details on the operation schedules of existing mainstream and tributary dams.
- To make water diplomacy more inclusive and accountable, a diversity of water knowledge beyond scientific water data is required, including situated community knowledge, and civil society and academic research. Existing intergovernmental platforms could improve mechanisms to receive information from communities, civil society, and others to inform water diplomacy processes.
- To date, intergovernmental water diplomacy has focused on establishing agreements for water data sharing that increases transparency. A forward-looking policy priority within and beyond scientific water data sharing should be on establishing a rules-based basin-wide regime on the operation of hydropower dams with accountability mechanisms and community participation.

Introduction

Since the early 1990s, a growing number of large hydropower dams have increased storage capacity in the Mekong-Lancang basin, in the process changing the river's hydrology and ecology at scales ranging from the local to the transboundary (Räsänen et al. 2017). These have occurred alongside other river development projects, including for navigation and large-scale irrigated agriculture. Climate change is also

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influencing the river's hydrology and ecosystems, with implications for human activities (Evers and Pathirana 2018).

Severe droughts including in 2009-2010, 2015-2016, and 2019-2021, together with other impacts such as changing water quality, algae growth (MRC 2019), and rapidly changing water levels, have foregrounded the importance of regional cooperation and water diplomacy (Kittikhoun and Staubli 2018). There is ongoing debate regarding the extent to which large dam infrastructure in the basin has exacerbated the impacts of the droughts in the region, or could have been operated differently to better mitigate its impacts (Keovilignavong et al. 2021). A focus of this debate has been on the upstream dams in China, where twelve projects have been progressively built on the mainstream since the early 1990s. The role of lower basin projects has also been emphasized, including the mainstream Xayaburi Dam in Northern Laos commissioned in October 2019.

Two key intergovernmental institutions structuring transboundary water governance and water diplomacy are the Mekong River Commission (MRC) and the Lancang-Mekong Cooperation (LMC). The MRC is a treaty-based intergovernmental organization founded in 1995 between Cambodia, Laos, Thailand and Vietnam, with China and Myanmar as dialogue partners. The LMC was launched in 2016 and includes all six governments of the Mekong-Lancang basin, with water resources management as one of five priority areas. In addition, civil society groups, community networks, academics, think tanks and the private sector influence intergovernmental transboundary water governance and water diplomacy, and also lead their own water governance initiatives at the local, national and transnational levels.

In transboundary river basins, water data and information sharing are foundational to trust building and evidence-based cooperation necessary for water diplomacy between riparian states (Keskinen et al. 2021), and also with non-state actors including riparian communities and civil society (Mirumachi 2020). This policy brief examines what options exist for improved evidence-based transboundary water governance in the Mekong-Lancang basin building from recent improvements in basin-wide water data sharing for deepening water diplomacy.

Key Findings

Institutionalized water data sharing as a foundation of water diplomacy

There are three formal intergovernmental water data sharing arrangements within the Mekong-Lancang basin: between the MRC member states; between China and the MRC; and between member states of the LMC. Water data and information are increasingly available via government managed web-based platforms, in particular those hosted by the MRC (portal.mrcmekong.org) and the LMC

A small fishing boat in low water on the Mekong River. (Credit: Kanokwan Manorom)

Boats on the Mekong River bank in Northeastern Thailand (Credit: Kanokwan Manorom)

(www.lmcwater.org.cn). A third high profile platform, independent of the MRC and LMC, is the Mekong Dam Monitor (www.monitor.mekongwater.org), launched in 2020 by the US-based Stimson Center and Eyes on Earth. A comprehensive analysis of the strengths and areas for improvement of these platforms, and international best practices in water data sharing is available in the report accompanying this policy brief (Middleton et al. 2021).

In October 2020, an important outcome of regional water diplomacy was announced with an agreement signed between the MRC Secretariat and the Ministry of Water Resources of China for China to provide year-round rainfall and river level data to the MRC from its two monitoring stations twice per day. Overall, the extent of water data and information shared between the region's governments and made available to the public via online platforms has expanded over time, resulting in improved transparency. However, the water data shared is not complete, with important gaps being only partial water data for the upper portion of the basin in China and on the operation and mitigation measures of mainstream and tributary hydropower projects throughout the upper and lower basins. While the Mekong Dam Monitor does provide upper basin data, it depends on satellite sources that are not triangulated against on-the-ground river measurements in China. Overall, these gaps create uncertainty on the status and explanation of river conditions in the Mekong-Lancang basin, especially at times of drought, low flows, and flooding.

The exchange of data and information is a fundamental procedural rule found in the two global water conventions: the 1997 United Nations Convention on the Law of the Non-navigational Uses of International Watercourses (Watercourses Convention); and the 1992 Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention). The non-binding Good Practice Guidelines for Water Data Management Policy (Bureau of Meteorology 2017) put forward four reasons why water data sharing can improve water management and water diplomacy. First, it can help avoid water shocks that could otherwise come as surprises for which governments are ill-prepared to mitigate their impact. Second, it can enable policy makers to make wise choices based on clear supporting information. Third, it can build trust between water users, including across borders, increasing cooperation and reducing the risk of conflict. Fourth, it can avoid various forms of wastage, both of water itself as well as investments into inappropriately conceived or designed water infrastructure.

Water data, hydropolitics and water diplomacy

The droughts and low flows in the Mekong River during 2019 and 2020 drew attention to transboundary water governance and the extent to which water data informs it (Keovilignavong et al. 2021). Questions were raised regarding to what extent low flows are the result of the droughts due to a lack of rainfall, and what is the influence of storage of water in dam reservoirs? Attention has been directed towards mainstream hydropower projects in China and Laos, in part due to the incomplete data and information in the public domain on their operation and storage. The debate intensified with the publication of a report in April 2020 by the research consultancy Eyes on Earth that detailed a model of the natural (pre-dam) flow of the Lancang (Upper Mekong) River to then predict the impact of the dams on downstream Northern Thailand (Basist and Williams 2020).

The study led to intense debate over the role of mainstream hydropower projects in China, among researchers as well as in the media (Grünwald et al. 2021). Moreover, the 2019 and 2020 droughts and low flows occurred at a time of intensified geopolitics

between the United States and China, leading to a hydropoliticization of the droughts and politicization of the research – where the limitations of studies are downplayed and the results transformed into simplified narratives. The politicization of research can undermine the credibility of scientific evidence that could otherwise be the basis for informing deliberative processes of water diplomacy.

A key challenge of all existing studies and commentary has been the incomplete availability of basin-wide water data. In October 2020, China announced year-round state-to-state water data sharing with the MRC. This represents an important outcome of regional water diplomacy. However, more remains to be done. To make the status of the river in China more transparent, the number of monitoring stations could be expanded to cover all twelve hydropower dams now in operation and to include data on upstream and downstream water levels and flows for each dam's reservoir as well as each dam's operation schedule. In the lower basin, water data is needed on the operation of mainstream and tributary projects and the effectiveness of their mitigation measures.

Community experience in Thailand

In the report accompanying this policy brief, we detail empirical evidence from case studies in North and Northeast Thailand on how riparian livelihoods have been affected by changing water levels, the role of government line agencies and the local authorities in sharing information with them, and how community members can share their own experience and knowledge about changing water levels (Middleton et al. 2021). Community representatives interviewed had observed unseasonal changes on the Mekong River since a decade ago, in terms of water level, color and flow, which has affected river and wetland ecosystems and their fishing and riverbank gardening practices and livelihoods. For example, from our interviews with riparian community representatives in Northeast Thailand, since 2019 episodes of low sediment loads due to low flows and accompanying clear 'aqua blue' water resulted in the rapid growth of green algae that clogged fishing nets and created extra work to clean them before fishing again. Boats also become stranded on rocky outcrops and riverbanks when low flows arrive quickly that then require extra time and labor

Fishing gear on the riverbed in Northeastern Thailand (Credit: Kanokwan Manorom)

to move them back into the river. It has been challenging for these communities to respond to the river's changes, and they have not found an effective channel to communicate their difficulties and their situational knowledge to Thai government agencies and regional institutions.

There are presently two Thai-language online water data platforms maintained by government agencies. Our community level interviews, however, found that few people living in riparian communities used these platforms nor the MRC or LMC platforms. Rather, they circulate information among themselves in person or via social media and messaging apps sourced from mass media, civil society groups, and other fishers or boat operators. For the riparian community representatives interviewed, more important than near real-time water level data was to receive advanced warnings on changing water levels and its consequences, which many interviewees considered to be neither timely nor accurate at present.

Policy Implications

1. Comprehensive and accessible scientific water data evidencing water diplomacy

Comprehensive water data sharing can generate evidence informing water diplomacy. There is a positive trend by governments towards making more scientific water data and information publicly accessible on web-based platforms and portals. Key policy recommendations are:

- Continue to expand the geographical scope, number of monitoring stations and comprehensiveness of scientific water data shared between governments and placed in the public domain including: on the Lancang River to cover all twelve hydropower dams; the operation of tributary projects throughout the basin; and from the Mekong mainstream dams in Laos now in operation.
- Work towards an additional intergovernmental agreement between China and the MRC to clarify the specific parameters and timeframes for sharing advanced warnings on changing river conditions.
- Conduct research on how to better communicate information on rapid river level changes effectively to riparian communities.

2. Diversity of water knowledge for inclusive water diplomacy

It is now widely recognized that for inclusive and sustainable development to take place, multiple forms of knowledge are required in addition to 'scientific knowledge,' including situated community knowledge, civil society-led research, as well as political and practical forms of knowledge (Leach et al. 2010). The emphasis on water data sharing to date has been on scientific analysis between governments, to be shared with the public. To make water diplomacy more inclusive, this cooperation should be expanded to recognize the value of exchanging and combining multiple forms of water knowledge that would strengthen relationships and trust between state and non-state actors, improve public participation, and co-produce new actionable water knowledge. Key policy directions are:

- Mechanisms should be established within the MRC and LMC platforms, as well as national government agencies, to receive and deliberate analysis from communities, civil society, think tanks and others as a basis for ongoing exchange of knowledge and public participation in water diplomacy.
- Research funding agencies should support community-led, civil society, academic, and think tank research to ensure that diverse forms of knowledge are produced that can contribute information to decision-making in transboundary water governance.
- Government agencies working at the provincial and national levels should work together and routinely visit local areas to inform people in riparian villages about water data and listen to their experience.

3. Water diplomacy towards deepening regional institutionalization and accountability

To date, intergovernmental water diplomacy has focused on setting in place agreements for water data sharing within the MRC, between China and the MRC, and within the LMC. Yet, increased transparency through the availability of water data does not in itself result in changed practices on managing water infrastructure that is accountable to affected riparian communities, civil society and the wider public. The MRC via the Mekong Agreement and its Procedures constitutes a rules-based regime that influences – to a degree - planning and operation of water

infrastructure projects, and that includes public participation to an extent. Meanwhile, there is not yet in place a rules-based regime on the operation of hydropower dams on the Lancang River to establish accountability mechanisms for downstream river changes. Key policy directions are:

- Deepen intergovernmental discussion on establishing a clear and institutionalized rules-based regime for the entire Mekong-Lancang basin that is founded on meaningful dialogue, reciprocity and trust between states and with riparian communities and civil society (Middleton and Devlaeminck 2021). A starting point could be a joint study on the existing legal rules, customary principles, pledges, and regional agreements (such as the MRC's Procedures) maintained by each state actor to identify points of commonality and difference to then examine how these could structure basin-wide rules-based cooperation.
- Through deepening water diplomacy and rules-based institutionalization, work towards restoring a minimum natural hydrological regime in collaboration with riparian communities that minimizes the impacts of hydropower dam operation on ecosystems and wetlands.

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