

Lancang Jiang To The Mekong Delta: Questions of Dams, Development Impact And Integrity

Water is one of the world's most critical resources. With growing populations and competing needs, ensuring the supply of freshwater is a serious concern, particularly for countries that are already experiencing water shortage. Political strategy and good governance are increasingly important as effective and equitable mechanisms are required to manage shared freshwater resources, and meet the needs of potable water, sanitation, irrigation, and hydropower.

Management is a critical component as countries face degrading water quality, particularly caused by pollution and salination as a result of development activities and overdrawn aquifers. Water quantity brought on by the extremes of flooding and drought. Asia is fortunate to have the "Third Pole"—the Himalayas and Tibetan Plateau—that serves as a significant source of seasonal water (also under threat) feeding seven major rivers across the continental mass from India to China and Southeast Asia. Yet, the water is not enough for human and development demands of our time, which is ultimately dependent upon ecological sustainability.

One of these rivers is the Mekong; it runs for almost 5,000km passing through China, Myanmar, Lao PDR, Thailand, Cambodia, and Vietnam. The Mekong demands a new integrated approach to natural resource management, a greater understanding of land-water linkages, and a multidimensional analysis that includes not only the current development agenda, but also livelihood, and community perspectives—particularly those of indigenous cultures. The reality is that some countries upstream are in a position to take more water, affecting downstream flow and water quality. There is also a need to take into account the competing national and corporate development priorities of the Mekong and find creative ways of dealing with these.

The situation of the Mekong is complex and multidimensional; this paper only focuses on the challenges to watershed management. Two concerns are briefly presented here: the impact of hydropower dam development, and the need to ensure the integrity and sustainability of the river. Rather than offer solutions, however, this article points to the lack of environmental and cultural research and scientifically-based approaches that have fallen behind financial investments and infrastructure development.

The Mekong

The upper 44% of the Mekong flows through China. Here it is known as the Lancang Jiang or Turbulent River and flows through steep areas that are restricted to human settlement but are highly suited for hydropower infrastructure development. The river has a total drainage area of about 795,000km². River runoff from China is only 16% of the total, Myanmar 2%,

Lao RPD 35%, Thailand 18%, Cambodia 11% and Vietnam 18%.¹ Snowmelt from the Third Pole is a critical source of supply during the driest months in Spring. From June to October, the rainy season, the Lower Mekong is the main source of the river's discharge, the largest contribution coming from Lao RPD.²

Hydropower development impact

China plays a significant role in the Mekong, primarily in the construction of hydropower dams along the central river that helps fulfill the increasing energy demands of its rapidly growing economy. Its Western Region Development Strategy³, unveiled in 1999, is intended to correct the imbalance between western China and its coastal provinces⁴ and to achieve a "satisfactory level of economic development in the western region⁵.

The scope of their plans for hydropower was not evident until the mid 1990s. China made no announcements as to its plans, did not seek international financing for the construction, nor consult with any of the downstream Mekong countries. When it finally began to make its plans known, China had already completed its first dam in Yunnan province at Manwan and construction was underway for a second dam⁶. These two dams are part of Yunnan's "cascade" of eight dams, now already half completed.

The two primary drivers of hydropower development are closely related: energy demand and economic growth. Developing countries are interested in driving growth by raising energy production in order to attract investment, generate employment, and increase profits from power exports.⁷

This demand for energy also has a political dimension. Investments in power are seen as investments in the future. Ensuring energy creates greater potential for investment and business that will help secure a country's economic future.

¹ Osborne, Milton, "River at Risk: The Mekong and the water politics of China and Southeast Asia", Lowy Institute Paper 02, Lowy Institute for International Policy, New South Wales, Australia, 2004.

² Cronin, R and Hamlin, T, "Mekong Turning Point: Shared River for a Shared Future", The Henry L. Stimson Center, Washington DC, 2012. p2

³ Onishi, Y and Kenkyujo AK, "China's Western development strategy: Issues and Prospects", Vol. 22 of IDE Spot Survey, Institute of Developing Economies, 2001
<http://www.ide.go.jp/English/Publish/Download/Spot/22.html>

⁴ Osborne, Milton, "River at Risk: The Mekong and the water politics of China and Southeast Asia", Lowy Institute Paper 02, Lowy Institute for International Policy, New South Wales, Australia, 2004.

⁵ Glantz MH, Ye, Q, and Ge, Q, "China's western region development strategy and the urgent need to address creeping environmental problems", Arid Lands Newsletter, No. 49, May/June 2001, <http://ag.arizona.edu/oals/ALN/aln49/glantz.html>

⁶ River at Risk Osborne, Milton, "River at Risk: The Mekong and the water politics of China and Southeast Asia", Lowy Institute Paper 02, Lowy Institute for International Policy, New South Wales, Australia, 2004. p11

⁷ Cronin, R and Hamlin, T, "Mekong Tipping Point: Hydropower Dams, Human Security and Regional Stability", The Henry L. Stimson Center, Washington DC, 2010. p8

At the same time, financing is available for the development of hydropower. The large international development banks, including the World Bank and International Finance Corporation, as well as regional banks like the Asian Development Bank, have financed the development of and construction of large-scale hydropower projects.

While civil society criticism of dam construction has led development banks to review their financing priorities, loans are still available and there are corporate interests that are willing to foot the bill for hydropower development. The investments in hydropower are also political. Some of the dams planned for the Lower Mekong by Lao RPD and Cambodia have financing coming from Chinese banks, as well as state-owned construction and energy companies creating an unhealthy dependency on Chinese investments.⁸

While hydropower is seen to fulfill a critical part the energy demand in the region, the benefits are inequitably shared. The proposed hydropower dam projects on the mainstream are estimated to produce 14,697 megawatts of electricity. This is actually only 6-8% of the total estimated demand in the Lower Mekong by 2030, and will likely feed primarily into the Thai market.⁹

Thailand is also positioning itself as a major player in hydropower investments. A Thai company is spearheading the construction of the highly contentious Xayaburi Dam. The construction of the dam would force the resettlement of over 2,000 people. It would impact the river's ecology and fisheries, affecting over 200,000 people. The dam is likely to negatively affect the biodiversity of the Mekong, threatening fish species with extinction, including the endangered Mekong giant catfish.

Power generation is one aspect, but the other side of the equation is that hydropower infrastructure development is a business in itself and can be profitable on its own. This is not simply determined by demand. Decision-making is highly influenced by perceived national interests that take precedence over regional good. The emergence of public-private partnerships favor projects that attract financing based on the narrow calculations of commercial viability. Some governments and corporate interests take a very short-term view of the benefits of dam construction, failing to take into account the long-term impact of these activities and the sustainability of the resources they seek to exploit.

Ensuring the integrity and sustainability of the Mekong

In the drive towards development there is a need to consider more carefully the impact of activities, not only on the environment of the greater Mekong area, but also on the communities who depend on its resources for their survival.

⁸ Cronin, R and Hamlin, T, "Mekong Tipping Point: Hydropower Dams, Human Security and Regional Stability", The Henry L. Stimson Center, Washington DC, 2010. p3

⁹ Mekong Mainstream Dams, Interactive Mekong Map, October 12, 2011, <http://www.stimson.org/infographics/interactive-mekong-map/>

Economic development is needed and justified by the broad social improvements gained, despite often the limitations of social participation and the loss of habitat or livelihood. However, the impacts are so extensive when dealing at such a scale as the Mekong and the interplay of changes so complex that our scientific understanding is inadequate to ensure the continuity and integrity of the current and unforeseen ecological services we expect from the natural systems.

Ecological impact

The construction of the series of dams in Yunnan will have negative effects on the river's water and sediment flow. This will in turn impact downstream agriculture and food security and the fisheries especially in the delta where new sedimentation plays a critical role in fish spawning.

Record low-flows were documented beginning in January 2004, together with unpredictable fluctuations in the water levels. Though the 2004 levels may have been due to low rainfall in 2003, there are concerns that low water levels may have been the result of the dams upstream. According to the MRC, the river levels began changing more rapidly after the operation of China's first two dams, the Manwan and Dachaosan.¹⁰

While China reaps the benefits of these dams, the partially unknown impacts are borne downstream. The construction of the dams results in the trapping of sediment and reduction in the sediment and water flow, which is vital in maintaining the ecology and fisheries of Tonle Sap in Cambodia and the delta in Vietnam. The natural floods and overflows have been reduced because the extremes of the river have been reigned in, affecting the geomorphology of the river and the habitats that support wildlife.

It is not only dams in China that are affecting the integral relations of communities and their way of living along with the wildlife and local ecology. Dams planned along the tributaries are likely to have just as much—if not more—negative impact on the river. The Lower Mekong dams in Lao RPD, Thailand, and Cambodia, may, according to one estimate, block the migration of 70% or more commercial fish species.¹¹ This will have drastic effects on the food security and livelihood of approximately 60 million people.

Participation and resource governance

¹⁰ Pearce, Fred, "Chinese dams blamed for Mekong's bizarre flow", New Scientist 25 March 2004, <http://www.newscientist.com/article/dn4819-chinese-dams-blamed-for-mekongs-bizarre-flow.html>

¹¹ Barlow, C., Baran, E., Halls AS, and Kshatriya, M. "How much of the Mekong fish catch is at risk from mainstream dam development?" Catch and Culture Vol. 14.3, Mekong River Commission, Vientiane, Lao PDR.

The lack of community consultation and the failure to take into account the needs of local communities have resulted in an exclusive form of development: the reality is that the poor and the most resource-dependent communities will suffer the most from any changes in the ecology of the Mekong as a result of hydropower dam construction.

The Mekong River Commission (MRC) was established by the United Nations as an inter-governmental agency, working directly with Cambodia, Lao PDR, Thailand, and Vietnam on the joint management of shared water resources and the sustainable development of the Mekong. The Commission is a regional facilitating and advisory body and is governed by the water and environment ministers of the four countries. The main aim is to develop the Mekong in a way that is efficient, mutually beneficial, and minimizes negative impact on the people and environment of the Lower Mekong Basin. Despite the impact of China's activities on the Mekong environment, China has not agreed to fully participate in the Commission choosing to retain observer status in the collaborative management efforts.

The MRC has been criticized for having been unable to take an active role in addressing issues affecting the Mekong. It must be noted that the MRC is an instrument only of the governments that are party to it. Representatives on the Commission therefore carry with them the interests of their governments. The MRC is not an independent body, and therefore is unable to carry out any action that does not have the approval of the member countries.¹²

The establishment of the Commission does not ensure the broad participation in the decision-making and management process of the Mekong. Unfortunately, it is the communities that are most affected by the development activities that are often those who have the least access to information and the least ability to participate. This issue of participation and involvement is critical in ensuring that the MRC does in fact achieve its objective of developing the Mekong for the benefit of all concerned, and not just for the more powerful or influential stakeholders. The interrelationships between the organizations operating at the different scales of regional—governments, corporations, civil societies—and national to local, are critical where the characteristics of good governance are vital: transparency, accountability and legal recourse to compensation.

Summary

Environmental research and scientifically-based approaches fall behind financial investments and infrastructure development. Government and business do not often consider science as a wise investment. This gap between science and policy is one of the reasons why governments and politicians approve projects that the scientific community may still be questioning. To date, no full cost-benefit analysis has been done on the Mekong. There is also

¹² Osborne, Milton, "River at Risk: The Mekong and the water politics of China and Southeast Asia", Lowy Institute Paper 02, Lowy Institute for International Policy, New South Wales, Australia, 2004. p9

an absence of benchmark data that can be used to measure the changes in the river's behavior. The old business adage goes, "what gets measured gets managed", and the same is true for the Mekong. There is an urgent need for more scientific study and more data that will inform the management of the river.

Even today, with the great strides made in the field of communications, there is still a lack of adequate and appropriate participation in the process by communities who are directly affected. Given that the countries in the Mekong region are so different in terms of their dependence on the river and catchment areas, there are still no suitable mechanisms to ensure just and equitable national participation. This obviously reflects the variance in political power that the countries have in the situation. For instance, Lao PDR has little influence in the situation despite having a large stake in the watershed.

Finally, the biodiversity in the Mekong cannot speak for itself. However, society is developing a greater awareness that it is dangerous to push the environment to a "tipping point" where the critical dimension of biodiversity is lost.

In the end, much more work has yet to be done in measuring the changes on the Mekong while seeking to manage and sustain its ecology and local livelihood as well as the grander global economic development. The challenges are many and the political waters remain turbulent for the river that begins as Lancang Jiang and makes its way to the Mekong Delta.

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