

## **2. The Changing Mekong Environment and the Impacts on People's Livelihoods**

### **2-1. The Mekong River Mainstream:**

#### **Looking back on Hydropower Dam Development**

##### **Changes in the International Framework for Mekong River Water Resources Management**

The development of mainstream dams in the Mekong River has been proceeding with alacrity since the year 2000. The history of these development plans goes back a long way to 1957. In that year, Japan, the United States, France and other countries proposed an aid package for a Mekong River Development Project at the Annual Meeting of the United Nations Economic Commission for Asia and the Far East (ECAFE—now ESCAP, the Economic and Social Commission for Asia and the Pacific)<sup>1</sup>. The Committee for Coordination of Investigations of the Lower Mekong Basin (generally known as the Mekong Committee) was established on the basis of a recommendation of this meeting. The Mekong Committee was set up as an interstate mediatory body for the consolidation of Mekong River hydropower and irrigation facilities, affiliated countries at the time being the four countries of the Lower Mekong River Basin, Thailand, Laos, Cambodia and Vietnam.

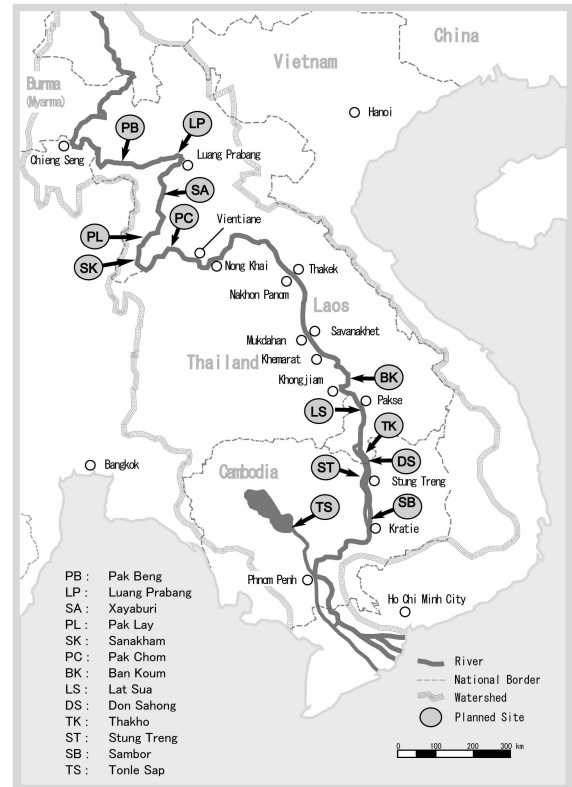
After the First Indochina War broke out (1946-1954), however, the Lower Mekong River Basin was engulfed in war, and in 1975 Laos, Cambodia, and Vietnam became socialist countries. With Cambodia isolated by civil war, the three other countries continued activities as the Interim Mekong Committee from 1978, but this did not lead to a movement toward cooperative development of the Mekong River. After peace was once again established in Cambodia, the four countries reached an understanding on the Agreement on the Cooperation for the Sustainable Development of the Mekong River Basin (generally known as the Mekong Agreement) in 1995, and the Interim Mekong Committee was reformed to become the current Mekong River Commission (MRC).

The work of the MRC is to carry out mediation concerning water resource-related development, use, management and conservation in the Mekong basin. It is involved in a number of sectors including irrigation maintenance and improvement with anti-drought measures, navigation, hydropower, flood control, fisheries, basin development management, environment, and tourism. China and Burma became “dialogue partners” under a cooperative framework in 1996, but both countries have yet to become formally affiliated with the MRC (as of August 2013).

The MRC consists of three permanent organizations; the Council, the Joint Committee, and the Secretariat. Cabinet ministers and high-level government officials of the affiliated countries participate in the Council and the Joint Committee, respectively. Each of the four affiliated countries has established a National Mekong Committee (NMC). The MRC also holds an annual meeting to provide the Donor Consultative Group—consisting of Japan and Western donor countries and international agencies—with a forum to express opinions concerning the activities of the MRC.

## Mainstream Dam Development

From the latter half of the 1950s, the Mekong Committee conducted surveys to identify construction sites in order to push forward with the hydropower and irrigation dam project in the Lower Mekong River Basin. By the 1960s, the Committee had prepared plans for seven large-scale multipurpose cascade dams in the Lower Mekong River Basin. These dams, proposed in the 1970 Water Resources Development Plan, were intended to fulfill the purposes of hydropower, flood control, irrigation and improvements in navigation. The proposed dams had a combined power generating capacity of 23,300 megawatts (MW) and would hold more than one third of the Mekong River's total annual flow. These projects, however, never came to fruition due to fears of social and environmental impacts, funding difficulties, and the conflicts in Indochina. In order to reduce the number of relocated residents, the Mekong Committee subsequently proposed a large number of smaller mainstream dams in the Revised Water Resources Development Plan of 1987.



Map: Mainstream Dam

Before disbanding in 1994, the Secretariat of the Interim Mekong Committee produced a report for the construction of a maximum of eleven dams in the Lower Mekong basin. According to the plan proposed in the report, a series of dams, from 30 to 60 m in height, would be constructed consecutively, and the reservoirs would stretch over more than a total of 600 km along the length of the basin. This was to be accompanied by the relocation of an estimated 57,000 residents. The report also proposed an order of priority for nine dams that would have a combined capacity of 13,350 MW.

At present, in addition to the dam projects on the Mekong mainstream in China, there are plans for 12 mainstream dams on the Mekong River, including a project put forward by a private Thai company. Of these, construction of the Lao Xayaburi Dam is now well underway.

Project name (Location)	Capacity	Main purpose	Project body or company and home country
Pak Beng (Northern Laos)	1,230MW	Sale of power to Thailand	Datang International Power Generation Co. Ltd., China
Xayaburi (Northern Laos)	1,260MW	Sale of power to Thailand	Ch. Karnchang Public Co. Ltd., Thailand
Pak Lay (Northern Laos)	1,320MW	Sale of power to Thailand	Sinohydro and China National Electronics Imports and Exports Cooperation, China
Luang Prabang (Northern Laos)	1,500MW	Sale of power to Vietnam	Petrovietnam Power Engineering Consulting Joint Stock Company, Vietnam
Pak Chom (Thai-Lao border)	1,079MW		Thai Ministry of Energy and Lao Ministry of Energy and Mines (Study commissioned)
Sanakham (Northern Laos)	700MW	Sale of power to Thailand	Datang International Power Generation Co., Ltd. and Datang Overseas Investment Co. Ltd., China

Ban Koum (Thai-Lao border)	2,175MW	Sale of power to Thailand	Thai Ministry of Energy (Study commissioned)
Lat Sua (Central Laos)	686MW	Sale of power to Thailand	Charoen Energy and Water Asia Co. Ltd., Thailand
Don Sahong (Southern Laos)	240MW	Sale of power to Thailand, Cambodia, and Vietnam	Mega First Corporation Bhd., Malaysia
Thakho (Southern Laos)	50MW	Laos domestic power supply	Compagnie Nationale du Rhone, France and Electricité du Laos
Stung Treng (Cambodia)	978MW and 591 MW	Sale of power to Vietnam	Open Joint Stock Co. Bureyagesstroy, Russia
Sambor (Cambodia)	3,300MW and 2,600MW	Sale of power to Thailand and Vietnam	China Southern Power Grid, China

Table: Project Names and Outline of Lower Mekong River Mainstream Dams

## Upstream Development by China

Inside China's borders, the Mekong River is known as the Lancang Jiang. In 2001, the Chinese government approved the implementation of the "Xidian Dongsong" project (West-East Electricity Transmission Project) in its 10th Five-Year Plan. This is a project to distribute the power generated using the abundant water resources of China's western regions to eastern regions such as Guangdong and Shanghai, which have chronic power shortages. The basin of the Lancang Jiang in Yunnan Province is believed to have the greatest potential for hydropower. In 2009, the utilization rate of the Lancang Jiang water resources was around 7%, but if all eight planned dams begin operation by 2020 the utilization rate is predicted to rise to 58%.



Map: Lancang Jiang Dams

Of the eight dams, six (i.e., Xiaowan, Gongguoqiao, Jinghong, Dachaoshan, Manwan, and Nuozhadu) have been completed and are in operation. Two further dams (i.e., Ganlanba and Mengsong) are in the planning stages. The Xiaowan Dam is a concrete arch dam 292 m in height, second only to the largest dam in China, the Three Gorges Dam. The Xiaowan Dam is a multipurpose dam for flood control and irrigation, sediment control, and water transport, but its main purpose is power generation. It has a generating capacity of 4,200 MW, roughly half of the power being distributed to Guangdong Province and other Chinese coastal provinces.

## Sustainable Use of the Mekong Nowhere in Sight

As noted above, China is not yet officially affiliated to the MRC and has no forum for consultations with countries in the lower reaches concerning Mekong River development. The Chinese government holds to the perception that the downstream impact of the Lancang Jiang dam group is slight and has continued pushing forward with development as it would with other domestic rivers. In the lower river basin, Laos has gone ahead unilaterally with the construction of the Xayaburi Dam and the existence of the MRC as a mediatory body is being called into question. As can be seen from the fact that dam

development on tributaries has already caused severe damage<sup>2</sup>, dam construction in the Mekong River basin destroys the natural environment and threatens the lives of the people that depend on it. At the time the Mekong Agreement came into effect in 1995, however, participation by major stakeholders (such as residents and citizens of the Mekong basin and researchers with specialized knowledge) in the decision-making process on the development of the Mekong River was not one of the premises of the Agreement. What is needed now is not Mekong River development that is premised on the construction of hydropower dams, but a detailed survey and forecasting of the accumulated impacts of development throughout the whole river basin. Based on such a survey, there should be mediation of the interests of all people involved. Discussion among governments and development organizations is not enough. To establish sustainable use of the Mekong River, there is a strong call for the creation of a new framework in which a wide range of stakeholders, including affected communities and the Mekong basin's citizens, can participate.

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1. See the BP 2-2 *Mainstream Dam Development: Construction of the Xayaburi Dam Forges Ahead without Agreement* for details. Here we have summarized the history of hydropower dam developments in the Mekong River mainstream.
  2. See BP 2-4 *Cross-Border Environmental Issues: The Sesan, Srepok, and Sekong (3S) Rivers Dam Developments* and BP 2-5 *Rapidly Advancing Mekong Tributary Development and its Environmental and Social Impacts: The Case of the Nam Theun 2 Hydropower Project in Laos*.