

Background to the Mekong mainstream dams

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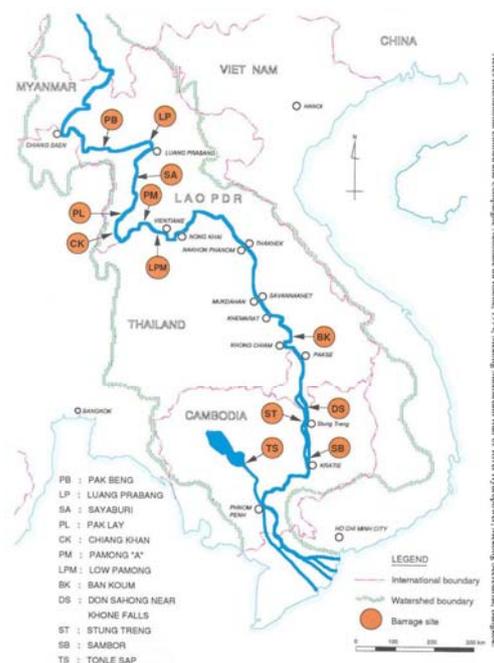
To meet the apparent growing energy needs of the economies of the Mekong region, there has been a renewed drive to build large-scale hydroelectric dams in the Lower Mekong Basin. In addition to the numerous large dams being planned, or under construction on the Mekong tributaries, plans to dam the lower Mekong mainstream have been revived in the past year with the signing of agreements to conduct studies on five mainstream “run-of-river” dams: Pak Beng, Xayabouri, Pak Lay and Don Sahong in Laos, and Sambor in Cambodia.

Plans to dam the Mekong mainstream are not new. In fact, since the late 1950s, the Mekong Committee had been promoting and conducting investigations to identify potential sites for hydroelectric and irrigation dams in the Mekong region. By the 1960s, the Mekong Committee had designed plans for a cascade of seven large-scale “multi-purpose” dams on the lower Mekong mainstream with the aim of providing hydroelectricity, flood control, irrigation and improved navigation, which were proposed in the Mekong Committee’s Indicative Plan in 1970. With a total capacity of 23,300 megawatts, the so-called Mekong Cascade would have transformed much of the lower Mekong River to a series of large reservoirs, capable of storing more than one-third of the Mekong’s annual flow.

The centrepiece of the Mekong Cascade was the Pa Mong dam. With an installed capacity of 4,800 MW, the Pa Mong dam would have submerged 3,700 square kilometres of land, and displaced an estimated 250,000 people. While the Mekong Committee spent millions of dollars on studies for the Pa Mong dam, it never proceeded past preliminary planning stages, due to the war in Indochina as well as concerns over the dam’s massive social and environmental impacts.

Largely in response to the high resettlement impacts of the original plans, the Mekong Committee’s revised Indicative Plan (1987), presented a larger number of “smaller” mainstream dams, with a combined generating capacity of 23,250 MW. Then in 1994, months prior to the signing of the “Mekong Agreement”, which led to the (re-)formation of the Mekong River Commission (MRC), the Mekong Secretariat published a report outlining plans for up to eleven large-scale dams on the lower Mekong mainstream (see map).¹ Intended as an alternative to the much larger dams envisaged in the 1970 Indicative Plan, the 1994 study proposed a series of “run-of-river” dams 30 to 60 metres high, with reservoirs stretching a total of over 600 kilometres of the river, displacing an estimated 57,000 people. Using information gathered from previous dam plans at the Mekong Secretariat, the 1994 report identified and ranked potential dam sites and proposed nine dams with a total generating capacity of 13,350 MW (most of which would be exported to Thailand).

Prompted by growing concern about the conflict between hydropower development and productive fisheries, the Mekong Secretariat also commissioned a review of the Mekong fisheries and the potential



impacts the mainstream dams. While pointing to insufficient data to reliably rank or prioritise the proposed projects, the 1994 fisheries study states that, “It can be assumed that total impact on spawning habitats from inundation will be substantial. Significant loss of habitat and isolation of stocks from historic habitat will lead to lowered productivity, [and] decreased biodiversity...”² Moreover, the blocking of fish migration “may cause a wholesale decline in fishery throughout the lower Mekong River.”³

Fortunately, none of the lower mainstream hydropower schemes got off the ground in the late 1990s. The 2001 Mekong River Commission’s Hydropower Development Strategy⁴ attributed the failure to develop mainstream Mekong dams to four factors: riparian countries’ focus on tributary projects within their national borders; the unfavourable political situation in the region; the significant costs of the projects; and the “formidable” fisheries and resettlement impacts of the mainstream dams. The MRC Hydropower Strategy went on to note, however, that conditions were beginning to change. With increasing power demand in Thailand and Vietnam and a move away from thermal power plants, renewed interest from private developers and state-owned utilities with financial and managerial “spare capacity”, and the rising price of energy alternatives, riparian countries began to look again at damming the lower Mekong. By September 2007, the governments of Laos and Cambodia had granted permission to Thai, Malaysian and Chinese companies to conduct feasibility studies for five large hydropower dams on the lower Mekong mainstream (see table below).

Table: Summary of the five proposed mainstream dams

Project	Capacity (MW)	Primary Purpose	Project Sponsors	Notes/remarks
Pak Beng, northern Laos	1,230*	Export to Thailand	Datang International Power Generating Company (China)	MoU for feasibility study signed in August 2007
Xayabouri, northern Laos	1,260*	Export to Thailand	Ch. Karnchang (Thailand)	MoU for the feasibility study signed on 4 May 2007; study expected to be completed within 30 months; project construction expected to begin in 2011 and be operational by 2015; estimated cost – US\$1.7 billion
Pak Lay, northern Laos	1,320*	Export to Thailand	Sinohydro and China National Electronics Export and Import Company (CNEIC) (China)	MoU for feasibility study signed on 11 June 2007; supply domestic and export to Thailand; estimated cost – US\$ 1.7 billion
Don Sahong, southern Laos	240*	Export to Thailand, Cambodia or Vietnam	Mega First Corporation Berhad (MFCB) (Malaysia)	Most advanced stage of consideration of the four proposed projects; MoU for feasibility study signed in March 2006; estimated cost – US\$ 300 million
Sambor, Cambodia	3,300* or 465	Export to Vietnam or Thailand	China Southern Power Grid (CSGP)	MoU for feasibility study signed on 31 October 2006; study being undertaken by CSGP’s subsidiary, Guangxi Grid Company which is reportedly examining two design options

* Installed capacity figures vary according to source. Installed capacity figures in the table are from the report, “Mekong Mainstream Run-of-River Hydropower” published by the Mekong Secretariat in 1994.

1 Acres International Limited and Compaigne Nationale du Rhone, 1994, Mekong Mainstream Run-of-River Hydropower, Mekong Secretariat, Bangkok.

2 Mark. T Hill and Susan A. Hill, 1994, Fisheries Ecology and Hydropower in the Mekong River: An Evaluation of Run-of-the-River Projects. Mekong Secretariat, Bangkok, p.88

3 ibid

4 MRC Hydropower Development Strategy 2001, available at: www.mrcmekong.org