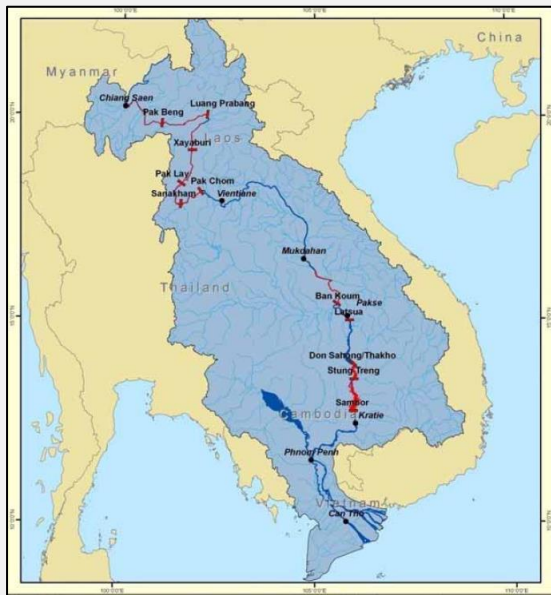


Hydropower Development in the LMB – Update September 2013

Over the past months, important developments have taken place in the hydropower sector in the Lower Mekong Basin (LMB). This brief provides an update on recent developments since June 2013, when the last brief was sent. It focuses on the projects with most important developments, that is, the Xayaburi, Pak Beng and Don Sahong Projects on the Mekong mainstream and the Lower Sesan 2 Project on a Mekong tributary.

Overview of Hydropower Development in the Lower Mekong Basin

The Lower Mekong Basin (LMB) is facing a rapid increase in hydropower projects. As a result of the rapid economic development of riparian countries, the need for cheap and renewable energy is rising, driving all riparian states into a constantly increasing interest to develop the vast hydropower potential of the Mekong River and its tributaries, estimated at more than 30,000 MW. So far, less than 10% of this potential is being exploited. Especially Lao PDR is interested in using its hydropower potential not only for electrifying the country but, more importantly, for generating export income that can fuel economic growth and development. Thailand and Vietnam, on the other hand, are the main purchasers of Lao hydroelectricity and have each signed Memorandums of Understanding for the provision of significant amounts of electricity over the next decades.



To date, 35 hydropower projects have been finalized in the LMB, all of them on Mekong tributaries (15 in Lao PDR, 12 in Vietnam, 7 in Thailand and 1 in Cambodia). More than 100 additional projects are planned for the next decades or are already under construction. Among them are 12 projects on the Mekong mainstream (see figure on the left¹). 10 of them will be located in Laos (the Ban Koum, Don Sahong, Lat Sua, Luang Prabang, Pak Beng, Pak Chom, Pak Lay, Sanakham, and Xayaburi Projects), another 2 in Cambodia (the Sambor and Stung Treng Projects). These mainstream hydropower projects will, if implemented, generate a capacity of 13,000 MW whereas tributary projects, if all realized, will be able to provide a capacity of more than 15,000 MW.

Xayaburi Hydropower Project

The Xayaburi Hydropower Project was the first project on the Mekong mainstream in the LMB. After having submitted the project to the Mekong River Commission (MRC)'s prior notification process, the Lao government pursued construction throughout 2012 in spite of downstream countries' concerns.

¹ MRC (2011): *Prior Consultation Project Review Report*, 24 March 2011, Vientiane, Lao PDR.

In November 2012, the official ground breaking ceremony was held – although it is safe to assume that construction started earlier already.

Details on the Xayaburi Hydropower Project



The Xayaburi Hydropower Project consists of a dam of 830 m length and 49 m height, creating a reservoir of 60-90 km in length downstream of Luang Prabang. It is equipped with 10 turbines which will generate 1,260 MW. 95% of the generated electricity will be exported to Thailand. The project is equipped with a navigation lock and various fish passage facilities as well as a system for flushing sediments that get trapped behind the dam.

The project is developed by the Thai company Ch. Karnchang, a major Thai construction company, and funded by Thai commercial banks, among them the Krung Thai Bank, a state-owned Bank. The Thai government has provided guarantees to the financiers, hence also supporting the project.

Over the past months, construction has continued – although at a limit intensity due to the rainy season. According to the Lao government, the project is on track and will hence be completed, as planned, latest in 2019. At the same time, the developer, together with a number of contracted companies, is implementing environmental monitoring activities, largely focusing on sediments and fish migration. However, the resulting data has not been disclosed yet. Hence, knowledge about the exact effects of the project as well as the effectiveness of the mitigation measures remains limited.

Moreover, in spite of promises by the Government of Laos, the MRC has still not received the updated design of the Xayaburi project. Hence, no objective review concerning its environmental sustainability could be undertaken nor could information be shared with downstream riparian countries that had earlier voiced their opposition towards the project. The MRC as the regional organization in charge of managing the basin thus continues to be side-lined. Instead, countries continue to use bilateral negotiation paths to solve disagreements.

Resettlement of more than 2,000 people continues. Compensation measures, provided to villages resettled in 2012 already, have expired in 2013 and have not been extended. With the continuous lack of income sources for resettled people, their socioeconomic situation remains challenging. This affects, likewise, those villages that face resettlement this year as construction proceeds. Moreover, recent floods in August hit one of the villages to be resettled very hard with farmland being destroyed². During this flash flood, parts of the construction site have apparently also been flooded – however, it remains unknown to what extent this has caused damage and might delay the construction schedule.

² RFA (2013): *Villagers Awaiting Xayaburi Relocation Hit by Floods*, 13 August 2013, <http://www.rfa.org/english/news/laos/xayaburi-08132013181245.html>

Pak Beng Hydropower Project

The Pak Beng hydropower project, located upstream of Luang Prabang in Oudomxay Province, is one of the Lao mainstream dams most advanced in planning. Consequently, there is an increasing concern in the region that it might be the project to take off next.

Details on the Pak Beng Hydropower Project



The Pak Beng hydropower project will be located upstream of Luang Prabang, close to the village of Pak Beng in the province of Oudomxay. It is planned to be 76 m high and 934 m long, that is, considerably bigger than the Xayaburi dam. It will create a reservoir of more than 80 km². It will generate up to 1,300 MW of electricity. The electricity will most likely be exported to Thailand – though no power purchase agreement with Thai EGAT has been signed yet.

It is developed by the hydropower developer Datang Overseas Investment, a former state-run but now semi-private Chinese company specialized in electricity generation, with funding from Thai commercial banks already being secured.

The project's consequences are expected to be similar to those of the Xayaburi dam. Along the different fields of environmental concerns, impacts will however vary: In terms of fish migration, Pak Beng's impact will remain small due to the blockage likely to be caused by the Xayaburi project already. With regard to sediments, however, the Pak Beng project has the potential to block a significant part of sediments coming from China due to its location far upstream. Social consequences can be expected to be larger as well due to the higher number of people likely to be resettled (estimates vary between 4,200 and 6,700 people to be resettled³).

In late 2012, it was reported that an unnamed Lao government officials announced that all pre-construction studies for the project had been finalised and that it was awaiting final government approval to go ahead⁴. In July 2013, various reports indicated that the construction of the Nam Beng tributary project – a project on the Nam Beng shortly upstream of the confluence with the Mekong that is required for the effective operation of the Pak Beng mainstream project – was about to start. Hence, the construction of the Pak Beng project seems to still be on the agenda and possibly starting sometime soon.

So far, however, no information about the status of the project has been made public by the government of Laos or shared with the MRC. Some voices have raised concerns that the Lao government might not notify the MRC on this project and/or not follow the required consultation

³ MRC (2010): *Profiles of 12 Proposed Mainstream Dams in the LMB. MRC SEA of Mekong Mainstream Hydropower*, presented at the Regional Impacts Assessment Workshop, April 2010, Vientiane, Lao PDR, <http://www.mrcmekong.org/assets/Publications/Consultations/SEA-Hydropower/3-LMB-MSD-DriversQuick-Project-profiles-4Jun10.pdf>.

⁴ RFA (2012): *Second Mekong Dam Awaits Nod*, 18 October 2012, <http://www.rfa.org/english/news/laos/dam-10182012181106.html>

September 20, 2013

process within the MRC, largely justified by the albeit peculiar argument that Pak Beng would be situated upstream of Xayaburi for which the process has already taken place and for which, according to the Lao government, no concerns continue to exist. This is obviously not in line with regional and international legal requirements as well as Laos' overall commitment to regional cooperation.

Don Sahong Hydropower Project

The Don Sahong Project has received a lot of attention over the past months and recently more and more evidence indicates that Laos is moving ahead with the construction of the project. This project is expected to come with a number of environmental and social consequences – most of them transboundary in nature due to the specific location of the project. The most problematic consequences of the project concern Mekong fisheries.

Details on the Don Sahong Hydropower Project

The Don Sahong project is located Mekong mainstream just 2 km upstream of the border with Cambodia in an area known as Siphandone. In this area, the Mekong forms a network of channels that pass the Khone Falls as well as other water falls. The project will be located on one of these channels – the Hou Sahong Channel. It will make use of the river's natural drop at the Khone Falls, supported by a 32 m high dam. This will provide a capacity of 240 MW, most likely to be exported to Thailand or Vietnam.



The project will be developed by Mega First, a Malaysian company involved in property development and investment businesses and, more recently, in natural resources exploitation and power generation. Mega First maintains close relations to both the Lao and the Cambodian government.

Over the past months, preparatory work on the project has come up to speed⁵ - including the construction of an access road and a bridge on Don Sadam Island. Currently, there is increasing evidence that the project is about to take off shortly. In addition, the developer, together with external advisers, has carried out fish and fisheries monitoring activities in order to gain a better understanding of how many fish migrate through the Hou Sahong Channel. In this context, the traditional Li trapping, a fisheries technique used by the local population, has been prohibited in the area of the Khone Falls (while this has been done before, local authorities are now enforcing this prohibition and have effectively banned local people from their fishing sites. Fishermen had to sign papers prepared by Lao officials that they will not build new Li traps in 2014). This aims at ensuring that fish that migrate through the falls, especially along channels other than the Hou Sahong Channel, have higher survival rate, thus compensating for the fish losses related to the planned

⁵ IRN (2013): *Progress on Don Sahong Dam Sets Off a Time Bomb for Mekong Fish*, <http://www.internationalrivers.org/blogs/263/progress-on-don-sahong-dam-sets-off-a-time-bomb-for-mekong-fish-0>

September 20, 2013

project. The effects of this policy on local people's livelihoods cannot be measured yet, but can be expected to be significant given the high reliance of people in this area on fisheries.

So far, Laos has not notified the MRC about its plans to construct the Don Sahong Project – in spite of requirements emerging from the 1995 Mekong Agreement and MRC's Procedures for Notification, Prior Consultation and Agreement (PNPCA). Informally, various Lao government officials have emphasized that the project will be located on one of the many channels the Mekong forms at the Khone Falls, thus not being a mainstream project and thus not requiring consultation according to the 1995 Mekong Agreement. As the dam site is located only shortly upstream of the border to Cambodia, transboundary impacts will nonetheless arise and a decision to avoid the PNPCA can thus only be regarded as a pretext in order to avoid a lengthy notification and consultation process. Should Laos indeed move ahead with the project without notification and consultation, this would constitute a violation of not only the 1995 Mekong Agreement but also international water law more generally.

Recent Developments on Mekong Tributaries

In addition to the mainstream dams, more than 90 dams on Mekong tributaries are currently under construction or in the planning stage. Among them, the **Lower Sesan 2 Dam** is particularly problematic from an environmental and socioeconomic perspective. In addition to the inundated area – which is particularly large compared to other projects – impacts mainly concern the river's sediment load which is an important contribution to the Mekong mainstream's sediment load and hence to agricultural productivity as well as river bank stability and saltwater intrusion prevention in downstream areas in Cambodia and Vietnam.

Details on the Lower Sesan 2 Hydropower Project

The Lower Sesan 2 Project is situated within the Sesan-Sekong-Srepol (3S) river system in Cambodia, below the confluence of the Sesan and the Srepok Rivers and 25 km upstream of the town of Stung Treng. It will consist of a 75 m high dam that creates a reservoir or more than 33,000 ha. It is expected to generate about 400 MW – a capacity significantly lower than the capacity of the mainstream dams.



The project is developed by the Hydropower Lower Sesan 2 Co. Ltd., a joint venture between the Cambodian Royal Group and Hydrolancang, a Chinese hydropower development company. Financing comes directly from these companies as well as from various commercial banks (with no information on the exact financiers being disclosed so far).

Construction of the project is supposed to start in 2013 – with all preparation already being undertaken by the Cambodian government and the developer already. In mid-2013, the clearance of forested land around the site had already started. Reports from people having visited the site suggest that an area bigger than actually necessary for the project is being cleared of forest with the aim to

September 20, 2013

generate income for the hydropower developer (which also holds the logging rights) in addition to the project.

The project has received major criticism from the international community, with development partners to the MRC, including Germany, calling for a redesign of the project at the MRC's Informal Donor Meeting (IDM)⁶. This criticism also includes the a call for notifying and consulting the project in the MRC context given its likely transboundary impacts (especially in terms of sediments and fisheries) in spite of being a tributary project only.

Also, civil society organizations in Cambodia and villagers in the affected area are increasingly protesting against the project (see picture above; photo credit International Rivers). In February 2013, for instance, villagers from Ratanakiri and Stung Treng provinces submitted petition against the dam to the National Assembly. This was followed by protests in March 2013. There are, however, no signs that the Cambodian government would even consider a deferral or even a cessation of the project.



Other projects on the Mekong tributaries are moving ahead as well. In the 3S river system between Laos, Vietnam and Cambodia, a number of projects are moving ahead, including the **Sesan 3** and the **Lower Srepok 3** projects located in Cambodia. These projects will affect the rivers' ecosystems and consequently also on people's livelihoods. Information disclosed to affected people as well as plans for compensation and benefit sharing are, however, still lacking. Nonetheless, potentially affected people are worried. In June 2013, violent protests against the developer and its construction company took place at the site of the Lower Srepok 3 project. Although no further details are known, these protests have led to deaths on both the company's and the villagers' sides.

Recently, Vietnam and Cambodia seem to have moved towards more coordinated management of their parts of the 3S system. Based on a decision of the Vietnamese Prime Minister, minimum environmental flows were established for the Srepok, aiming at ensuring sufficient downstream flow for environmental and socioeconomic needs. While this will be beneficial to the ecosystem along the river as well as to Cambodia, it might render existing and currently constructed hydropower projects uneconomic.

A lot of the information provided above is based on informal or confidential sources which cannot be disclosed. However, if you would like to know more about hydropower development in the LMB or have any questions concerning the role of the MRC and our GIZ support to the MRC and its Initiative on Sustainable Hydropower, please contact us: susanne.schmeier@giz.de.

⁶ *Joint Development Partner Statement: MRC Informal Donor Meeting, 28 June 2013, MRC, <http://www.mrcmekong.org/news-and-events/speeches/joint-development-partner-statement-mrc-informal-donor-meeting-28-june-2013/>*