

## **2-5. Rapidly Advancing Mekong Tributary Development and its Environmental and Social Impacts: The Case of the Nam Theun 2 Hydropower Project in Laos**

### **Hydropower Development on the Tributaries Threatening Environment of the Mekong**

Experts say that 70% of fish inhabiting the Mekong River are migratory, coming and going with the seasons between the Mekong and its tributaries. Science has yet to elucidate many of the details related to the ecology of Mekong River fish, such as their migration and spawning patterns<sup>1</sup>. The current plans to build the Xayaburi Dam and the Don Sahong Dam, and their anticipated environmental and social impacts have triggered an international debate. Of course, if a dam is built on the mainstream, then certainly the migration of fish will be obstructed, changes in water volume will engender environmental impacts, and the resulting effects will have an immeasurable impact on the lives of people who depend on the natural resources of the river and its tributaries<sup>2</sup>. Even if further dam construction on the mainstream of the Mekong River were prevented, continued dam development on the tributaries would ultimately block their flow, inevitably leading to a dramatic decrease in Mekong River aquatic life. Dam construction on the Mekong's mainstream is of course an extremely important issue. The environmental and social impacts of development and dam building on the tributaries, however, should also be reconsidered and efforts need to be made to avoid impacts from new projects. As an aside, the attention being focused on the mainstream of the Mekong has led to development on the tributaries being pushed ahead at a fevered pitch, imperiling both the fish ecology of the Mekong River and its tributaries, as well as the livelihoods of people who depend on them.

### **Accelerated Hydropower Development in Laos**

Of the amount of water that flows into the South China Sea from the Vietnam Mekong Delta, Laos accounts for the largest volume, some 35% of the total<sup>3</sup>. The Lao government has been striving to harness the massive hydro resources and forge them into the so-called "battery of Southeast Asia" to supply power to neighboring countries. According to the Lao government-issued power development plan (August 2012), of 86 projects in operation, the nation's power generation business includes 14 plants currently in operation and 12 under construction<sup>4</sup>. Of these, apart from the Hongsa lignite coal-fired power station slated to begin operation in 2015, all of the projects listed are hydropower projects.

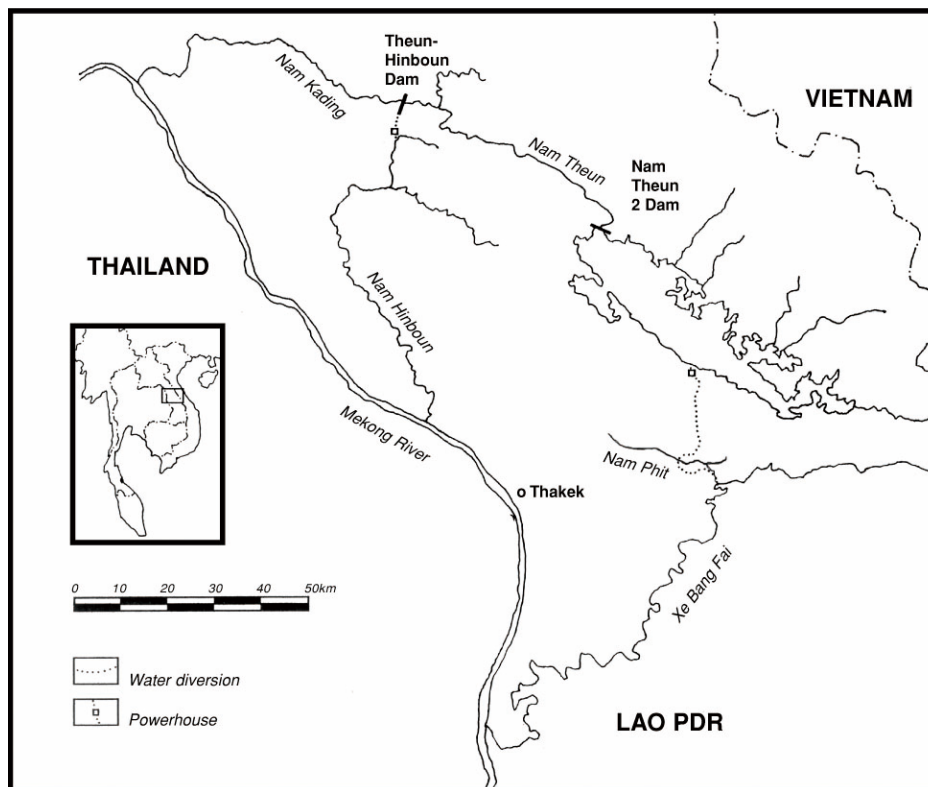


The Nam Theun 2 Hydropower Dam.

What provided the initial impetus to hydropower development in Laos was the Nam Theun 2 Hydropower Project backed by both the World Bank and the Asian Development Bank (ADB). Of the Lao hydropower projects in the plan cited above, only 10 were already in motion prior to the Nam Theun 2 project launch in 2005, which triggered a spate of contracts for dam projects and feasibility study-related memorandums. Despite the World Bank and ADB support for the Nam Theun 2 project, which was billed as a "model of sustainable development," currently many environmental and social impacts have emerged. Here we will examine the environmental and social impacts of dam development through the lens of the Nam Theun 2 project.

## Environmental and Social Impacts of the Nam Theun 2 Dam, a “Model of Sustainable Development”

The Nam Theun 2 dam was built in Khammouane Province in central Laos with the principal aim of securing foreign currency through the sale of power to neighboring Thailand (See the map below). The project called for the damming of the Nam Theun River, a tributary of the Mekong River, with a 48-meter-tall dam. The dam resulted in the submerging of an area of 450 km<sup>2</sup>, equivalent to two-thirds the area of Singapore, and the relocation of 6,300 residents. In line with the primary objective of the project, 1,000 megawatts (MW) of the 1,075 MW output is being sold to Thailand to bring in foreign currency.



Map: The Nam Theun 2 Hydropower Project (Source: International Rivers)

The project is a private-sector-led initiative implemented by an independent power producer and financed using the BOOT (build–own–operate–transfer) method. The project is the largest public works project ever in Laos, costing approximately USD 1.45 billion.

The massive environmental and social impacts associated with the project fueled international debate for more than a decade before the World Bank and ADB decided to back it in 2005. Construction began in earnest in June of the same year. In April 2008, the relocation of residents was completed and water began to be fed into the reservoir. On March 15, 2010, the dam began operating at full capacity and exporting power to Thailand.

As a result, a 450 km<sup>2</sup> area was flooded and the valuable Nakai Plateau ecosystem, also known as the Galapagos of the East, has been seriously affected. At the same time, livelihood prospects have yet to materialize for the 6,300 displaced individuals. In addition, after the water is used to generate power

it is fed into the Xe Bang Fai River and its tributaries, and an estimated 120,000 to 130,000 people are being affected by inundation of agricultural fields, catastrophic fishing industry damage, and increases in the incidences of flooding.

## Broken Promises of the Nam Theun 2

Several surveys were conducted in conjunction with the World Bank and ADB support of this project in light of concerns about potential serious environmental and social impacts resulting. Consequently, wide-ranging and elaborate plans were formulated to circumvent or mitigate potential negative impacts. However, the reservoir was filled and dam operation began even though the project's social development plan, the concession agreement with the Lao government, and conditions outlined in World Bank environmental and social safeguard policies had not been fulfilled. The environmental and social impacts that observers anticipated have arisen. Some of the most salient problems are briefly described below.



Flooded riverbank garden along the Xebang Fai River.

First, the reservoir area was flooded before the vegetation at the reservoir site was completely cleared. Failing to suitably clear the vegetation has damaged the water quality of the reservoir and the downstream Xe Bang Fai River, which may be a cause of emerging health problems.

Second, following the start of commercial operations, there have been instances in many villages along the Xe Bang Fai River of residents reporting skin problems after bathing or fishing in the river. Reasons why skin afflictions among river users occurred immediately after the dam started operation include a failure to notify local residents about the decline in river water quality, and the fact that many people have no choice but to use Xe Bang Fai River water for their household and daily needs because wells set up by the Nam Theun 2 Power Company (NTPC) break down and the well-water quality is poor.



A two-year old girl suffering a rash after bathing in the Xe Bang Fai River, into which the Nam Theun 2 Dam discharges its reservoir water.

Third, despite the World Bank safeguard policy stating that the expropriation of land and related assets should take place only after compensation has been paid, it was not until two years after relocation was completed that compensation for fields and fruit orchards began. Relocated residents have been put into a very difficult situation. They may not be able to file complaints in cases that they do not receive fair compensation in accordance with the stated policy because all their assets that would have been evidence to back up their claims have already been submerged.

In this way, despite billing this project as a “model for sustainable development” by conducting enormous environmental and social impact assessments and designing detailed plans to prevent and mitigate negative impacts, in practice, promises and requirements related to environmental and social safeguards have gone unfulfilled. Instead, commercial operation of the dam and economic profits have been prioritized.

## **Preventing Environmental and Social Impacts of Hydropower Development**

If the World Bank seeks to prevent and mitigate further environmental and social impacts of the Nam Theun 2 Hydropower Project, then it is incumbent upon it to implement the following improvements. First, it must ensure compliance with safeguard policies. NTPC, as the corporation operating the business, has prioritized the pursuit of profits and failed to completely fulfill its obligations in terms of safeguard policies. The World Bank and ADB, as supporters of this project, clearly have a responsibility to ensure the company's compliance with these safeguard policies.

Second, a monitoring mechanism to gauge the long-term effects of the project is required. Under the initial plan, a livelihood-restoration program by the NTPC is to conclude in 2014, after which the responsibility for the program is to shift to the Lao government. However, whether the Lao government can adequately respond to affected people and the remaining issues is a big question and highly problematic. Monitoring long-term impacts and mitigating these impacts will ostensibly be major challenges. Furthermore, as a project with international backing, the project merits a long-term survey of how a dam constructed on a tributary impacts the basin ecosystem as a whole. These projects should be used to contribute new information to the store of knowledge on the cumulative effects of dams on the Mekong River ecosystem.

Third, the disclosure of information on environmental and social impacts is called for. In spite of requests from non-government organizations (NGOs), the companies conducting activities have not disclosed important information, including standard-of-living surveys, surveys on reservoir and downstream water quality, and monitoring reports of activities on livelihood recovery downstream. Knowing that NTPC-implemented surveys are problematic in that they are not disclosed, not only surveys by World Bank experts, but project monitoring conducted by NGOs should also be accepted. To monitor these projects more effectively, information pertaining to environmental and social impacts needs to be made available to the general public.

Fourth, the World Bank should call on the Lao government to comply with the environmental policies the Bank supported when the Nam Theun 2 project plans were being formulated. In laying the groundwork for the project, both the World Bank and the ADB contributed to the formulation and revision of a number of environmental policies adopted by Laos. The fact that Laos prepared and organized these environmental policies is commendable. However, Laos has placed priority on economic growth to the detriment of environmental and social considerations in this development project, and has not actively sought to improve environmental policy. When it comes to the actual operations, there are a number of issues that should be pointed out. The World Bank and ADB added momentum to hydropower projects in Laos by throwing their weight behind the Nam Theun 2 project. This then led to a subsequent spate of dam development projects with environmental and social components being insufficiently considered. As such, hydropower project operators cannot be expected to formulate and promote measures to prevent and mitigate environmental impacts on their own. Moreover, the current situation is one in which the Lao government is lacking in management capacity and accountability. In light of this, donors such as the World Bank and ADB—who have supported the improvement of environmental policy in Laos and promoted hydropower development by backing construction of the Nam Theun 2 Dam—have a responsibility to urge the Lao government to thoroughly comply with environmental policy and call on the government for greater transparency

and accountability in development projects.

Without overcoming these problems, this project cannot in good conscience be called a “model for sustainable development” and should not be used to foist dam development on Laos or other countries.

#### References

- Asian Development Bank (ADB). 2004. *Summary Environmental and Social Impact Assessment: Nam Theun 2 Hydroelectric Project in Lao People's Democratic Republic*. Manila, the Philippines: ADB.
- Goldman, M. 2005. *Imperial Nature: The World Bank and Struggles of Social Justice in the Age of Globalization*. New Haven, Connecticut: Yale University Press.
- Imhof, Aviva, and Shannon Lawrence. 2005. *An Analysis of Nam Theun 2 Compliance with World Commission on Dams Strategic Priorities*. Berkeley, California: International Rivers Network (IRN).  
<http://www.internationalrivers.org/resources/an-analysis-of-nam-theun-2-compliance-with-world-commission-on-dams-guidelines-4124>
- Higashi, Satomi. 2005. Why Did the Japanese Government Support the Nam Theun 2 Dam Project? A Report on the Ministry of Finance and NGO Regular Consultation Special Session. *Forum Mekong* Vol. 7 No. 1, 1-13 (in Japanese)  
[http://www.mekongwatch.org/PDF/FM7\\_1.pdf](http://www.mekongwatch.org/PDF/FM7_1.pdf)
- Higashi, Satomi. 2010. New Poverty Proliferation in the Guise of Poverty Eradication: The Laos Nam Theun 2 Hydropower Project. *Alternatives* November/December 2010 (in Japanese)
- Kiguchi, Yuka. 2008. The Hoo Sahong Fish Corridor and People's Lives: Concerns on the Environment and Social Impact of the Don Sahong Dam. *Forum Mekong* Vol. 9 No.1, 16-19 (in Japanese)  
[http://www.mekongwatch.org/PDF/FM9\\_1.pdf](http://www.mekongwatch.org/PDF/FM9_1.pdf)
- Minutes of the Ministry of Finance and NGO Regular Consultation Special Session (April 12, 2005) (in Japanese)  
<http://www.jacs.es.org/sdap/mof/gijiroku/mof28.pdf.pdf>
- Nam Theun 2 Power Company (NTPC). <http://www.namtheun2.com>
- Nam Theun 2 Power Company (NTPC). 2005. *Social Development Plan*. Vientiane, Lao PDR: NTPC.  
<http://www.namtheun2.com/reports/111.html>
- Shoemaker, Bruce, Ian G. Baird, and Monsiri Baird. 2002. *The People and Their River: A Survey of River-Based Livelihoods in the Xe Bang Fai River Basin in Central Lao PDR*. Vientiane, Lao PDR: Canada/Lao PDR Fund for Local Initiatives.
- World Bank. *Nam Theun 2*.  
<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/EASTASIAPACIFICEXT/LAOPRDEXTN/0,,contentMDK:21109109~pagePK:141137~piPK:141127~theSitePK:293684,00.html>
- World Bank. *Nam Theun 2 Blogs*. <http://blogs.worldbank.org/eastasiapacific/category/tags/nt2>

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1. See BP 1-3 *Fish Diversity in the Mekong Basin* and BP 1-4 *The Mekong River: The World's Largest Freshwater Fishery*.
  2. See BP 2-1 *The Mekong River Mainstream: Looking back on Hydropower Dam Development* and BP 2-2 *Mainstream Dam Development: Construction of the Xayaburi Dam Forges Ahead without Agreement*.
  3. See BP 1-1 *The Mekong River's Natural Environment*.
  4. The plan includes plants with a 1-megawatt (MW) capacity or greater.