SUSTAINABLE INFRASTRUCTURE: PUTTING PRINCIPLE INTO PRACTICE

GUIDING PRINCIPLE 7: ENHANCING ECONOMIC BENEFITS

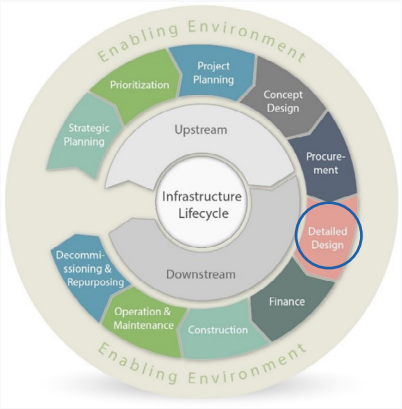
Infrastructure should create employment, support local businesses, and build amenities that benefit communities, thereby maximizing and safeguarding its economic benefits.

CASE STUDY: REASSESSING BENEFITS FROM NAM THEUN 2 HYDROPOWER PROJECT IN LAOS

Name: Dr. Kanokwan Manorom

Location: Ban Nava, Laos

Organization: Mekong Sub-Region Social Research Center (MSSRC), Ubon Ratchathani University



Nam Theun 2 Hydropower Project, Asian Development Bank 37910-014: GMS Nam Theun 2 https://creativecommons.org/licenses/by-nc/2.0/

Need for Infrastructure Project/System:

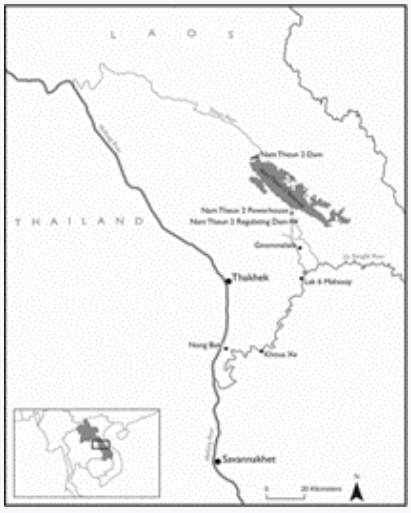
One of the major development challenges facing Laos is to provide a stable supply of electricity to its citizens. The nation has long needed a project that would generate revenue for the state, alleviate poverty in rural communities, and provide residents with a steady supply of electricity. In 2005, after 16 years of planning, Nam Theun 2 (NT2) dam was presented as a project capable of achieving these - and other - economic goals.

Project Description:

The NT2 dam, which began operations in 2010, was promoted as a state-of-the-art, poverty-alleviating sustainable dam project for its grounding in extensive social and environmental research and monitoring at all stages of the infrastructure project cycle.

Being marketed as a sustainable infrastructure project, NT2 was able to attract international investments and stakeholder cooperation to create a nature-derived source of revenue for the Lao state, bringing in $170 million from electricity sales to Thailand between 2010 and 2017. NT2 is a joint project of the Government of Laos and the World Bank, who ensured the financing of the whole project through loans, equity, and guarantees from 26 financial

institutions.



Source: Baird, G., Shoemaker, P., Manorom, K., (2015) The people and their river. The World Bank and its dam: revisiting the Xe Bang Fai river in Laos.

NT2 dam is a "trans-basin diversion project" that moves water from the Theun River to the Xe Bang Fai basin. The construction of the dam included the inundation of approximately 195 kilometres (km) of rivers which transformed them into the NT2 reservoir.

While the dam was promoted an exemplary hydropower project that addressed environmental and social risks, once in operation, it became clear that some key stakeholder communities were in fact worse off after the dam was built.

The project developers initially projected that 50,000 rural residents would be negatively affected by the dam and thus need compensation and/or relocation. However, later research showed that the number of people negatively affected was in fact 105,000. Because of insufficient planning, the $18.3 million Downstream Programme (DSP), designated to provide compensations and loans to the affected downstream communities, was inadequate and inaccessible. Later analysis revealed that the payoff scheme, the mechanisms of benefit delivery, and the structure of the DSP were poorly designed.

Furthermore, the Nam Theun 2 Power Company (NTPC) and the Lao Government committed to livelihood programmes that would resettle and double the income of 6,300 villagers. Yet many of the affected communities were never resettled.

Although the project's Environmental Assessment and Management Plan (EAMP) provided multiple rounds of environmental assessments, environmental monitoring, and protection initiatives (such as the creation of the on-site water laboratory, the establishment of the Panel of Experts, and funding fish research), the dam also has had a significant negative effect on water quality, aquatic plants, and wildlife. For example, fish stocks were found to have decreased by 25% in 2011. The significant decline in fish stocks and other aquatic species has further distressed local communities, especially more vulnerable groups who rely on those resources.

The downstream flooding caused by the dam also negatively affected rice and vegetable cultivation, prompting some villagers had to abandon their rice plots and relocate their small family gardens. This led to an increase in the amount of time, labor, and financial expenses needed for vegetable cultivation in these communities.

Challenges to Making Infrastructure Sustainable:

Technical and/or Programmatic – The NT2 project did not employ comprehensive environmental and hydrological impact assessments of the dam that sufficiently quantified and included the many environmental and social costs that this project inflicted upon the downstream communities and communities living along the tributary of the Nam Theun River.

Governance and/or Political Challenges – During the early planning stages of the project, local residents affected by the dam were not given opportunities to fully participate in the planning process.

Financial and/or Economic Challenges – Though a system was set up to reimburse farmers and fishers for lost income, the reimbursements and loans were slow, insufficient, and often not easily accessible to the village populations who have limited trust in financial systems.

Outcomes and Lessons Learned:

- The insufficient social and environmental impact assessment led to the aggravation of ecological damage and worsening of socio-economic inequalities among the local population.
- Safeguarding economic benefits from infrastructure requires careful understanding of the livelihood dynamics among local communities.
- The case of the NT2 hydropower project demonstrates the importance of commitment to stakeholder consultations and follow-up assessments across all stages of project conception and implementation.

For Further Information:

- Sustainable Infrastructure: Enhsncing Economic Benefits webinar recording (starts at 40:55)
- United Nations Environment Programme. (2021). International Good Practice Principles for Sustainable Infrastructure. Nairobi
- Baird, Ian G., Shoemaker, Bruce P., Monorom, Kanokwan. 2015. “The People and their River, the World Bank and its Dam:Revisiting the Xe Bang Fai River in Laos.” Development and Change 1080-1105.
- Bruce Shoemaker, William Robichaud. 2018. Dead in the Water. Global Lessons from the World Bank’s Model Hydropower Project in Laos. University of Wisconsin Press.
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- YaleGlobal Online. 2019. Dams And Climate Change Kill The Mekong – Analysis. November 27.
- 2015. “Development Banks Urged to Review Support for Mekong Dams, 10 Years After Nam Theun 2.” BothEnds.org. April 1.

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