



# Independent Expert Review of the Pak Beng Dam Environmental Impact Assessment and Supporting Project Documents

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International Rivers commissioned four experts to review project documents for the Pak Beng Dam in order to better understand the quality of reports prepared on behalf of the dam developer, Datang Power Company. The review included the Environmental Impact Assessment for the Pak Beng Hydropower Project (“the Pak Beng Dam”) and supporting documents including the Transboundary Environmental and Social Impact Assessment & Cumulative Impact Assessment, Social Impact Assessment, Resettlement Action Plan and the Fish Passage Design Report. The reviewers have expertise across a range of issues, including fisheries impact mitigation, social impacts and resettlement, gender impacts, environmental law, and international standards for impact assessment.



# Key Findings

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Overall, the review found that project documents provide an extremely limited picture of the Pak Beng Dam's expected environmental and social impacts, and are especially negligent in assessing the transboundary and cumulative impacts of the project.

The data presented in the reports including on fisheries, hydrology and sediment is largely drawn from studies conducted in 2011 and earlier, with little consideration of more recent information and changes to the Mekong River, including the construction of the Xayaburi and Don Sahong Dams. Overall the studies reveal a lack of understanding of the Mekong River's complex ecosystem, and existing developments on the river. The inadequacy of baseline data means that mitigation measures proposed to limit the loss of fish migration pathways, and to respond to the social impacts of the Pak Beng Dam are not credible solutions.

Critical shortcomings of the studies identified through the independent review include:

- » Inadequate information - based on limited sampling - with which to characterize fish resources at risk, and to assess the expected impact of the Pak Beng Dam on Mekong fish within the project area, as well as upstream and downstream of

the dam site. Proposed measures to mitigate the impacts on fish migration are untested within the Mekong and therefore it is impossible to assess their effectiveness in this context.

- » Limited assessment and documentation of the social impacts of the Pak Beng Dam for both resettled communities and those upstream and downstream of the project. Mitigation and compensation plans are based on unproven and unrealistic assumptions, and heavily reliant on models used at other large-scale hydropower projects in Laos that have largely failed to deliver on promises to restore livelihoods or minimize environmental damage.
- » Insufficient assessment of the impacts of the Pak Beng Dam to communities in Thailand as a result of hydrological changes to the river and obstruction of fish migration pathways, including that of the endangered Mekong giant catfish. Devaluation based on insufficient and outdated baseline data, of

the importance of fisheries and Mekong-related livelihoods in Thailand.

- » Absence of meaningful public participation in preparation of the Transboundary EIA; no consultation with communities who would be affected by the project, nor studies of potential transboundary impacts in Cambodia or Vietnam.
- » No consideration of cumulative impacts of the project with other dams on the Mekong River and within the basin, including the Xayaburi and Don Sahong Dams.

The review concludes that the Pak Beng Dam project documents submitted to the Mekong River Commission (MRC) under the Procedures for Notification, Prior Consultation and Agreement (PNPCA), are insufficient to meaningfully evaluate the project's environmental and social impacts, as well as the viability of proposed impact mitigation measures. Furthermore, the studies fail to take into account construction of the Pak Beng Dam in the context of other dams under construction and proposed on the Mekong River mainstream and within the basin.

Complete, current and credible baseline data is essential to understand the risks associated with the Pak Beng Dam to fisheries, hydrology, and sediment flow, along with impacts on the livelihoods of Mekong communities. Adequate baseline data is also vital in developing appropriate and context specific mitigation measures as well as effective monitoring systems. For example, the MRC-Commissioned Strategic Environmental Assessment warns that "if fish passes are to be successful, they must be considered at the earliest planning stages during the determination of dam location and design and must be designed for identified target fish species."<sup>1</sup>

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<sup>1</sup>Strategic Environmental Assessment of Hydropower on the Mekong Mainstream, prepared for the Mekong River Commission. Final Report, pg. 16

# Key Recommendations

Given the serious deficiencies found in Pak Beng Dam project reports, the project developer must conduct a new Environmental Impact Assessment, incorporating data collected over the last ten years, as well as updated studies on fisheries, hydrology and transboundary impacts.

- » A multi-faceted program of environmental monitoring and research studies should begin immediately, before further decisions are made regarding the Pak Beng Dam. It is critical that baseline studies are conducted before construction is allowed to begin and before the site is disturbed and the environment altered.
- » Environmental monitoring studies should include:
  - » Collection of fish in the project area over all seasons and for at least 2 years, using a variety of active and passive collection techniques. Both resident and migratory fish species should be thoroughly characterized. Monitoring should quantify the numbers and biomass of resident fish and the numbers and seasonality of upstream migrating spawners and downstream drifting fish eggs, larvae, and juveniles.

- » Laboratory and field studies should be carried out to evaluate the likelihood that the proposed upstream passage mitigation will be effective and the consequences of turbine passage to downstream-moving fish.

- » Comprehensive studies of likely social impacts both upstream and downstream of the dam site, that quantify the actual number of communities to be affected and are based on current data must be carried out. Studies must include disaggregated baseline data for communities directly and indirectly impacted by the Pak Beng Dam, based on the specific social, economic and cultural context. The report must provide more information regarding how the Pak Beng Dam would disproportionately impact women.

- » Mechanisms to fully address these social impacts need to be devised, including for those communities to be relocated and those who will experience disruptions to their river-based livelihoods upstream and downstream due to the dam. An independent assessment of the land offered for resettlement, undertaken with the participation of those to be resettled, is also urgently required.

- » An independent monitoring mechanism is needed to hold company or government officials accountable if promised compensation and resettlement benefits do not materialize or if project impacts are worse than envisioned in project documents and agreements.
- » Further study is needed of impacts of the Pak Beng Dam in Thailand, including adequate baseline data on fisheries and livelihoods of Thai communities.
- » The Transboundary Environmental and Social Impact Assessment must be revised to take into account accumulated data from the last 10 years. The report should also take into account new economic modelling of potential impacts, up-to-date economic valuation of fish stocks and fishing resources and the potential cost of replacement for the loss of fish stocks and other aquatic resources.
- » Meaningful consultation with communities who would be directly and indirectly affected by the Pak Beng Dam, including those in neighboring countries, must be carried out in accordance with international standards before any decision is taken on the project.

Updated project studies must be submitted to the Mekong River Commission (MRC) for review by the MRC's technical review team, along with MRC member countries through the Prior Consultation procedure. Decision-making, preparatory

work, and signing of project agreements for the Pak Beng Dam must be suspended until there is adequate information to properly evaluate the project's impacts in the context of the Mekong River Basin. Only when project studies have been deemed adequate based on independent evaluation should regional consultation and decision-making on the Pak Beng Dam be allowed to proceed.

## Comments on the Pak Beng Dam EIA Report and supporting project documents provided by:

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# Fisheries Review

**Dr. Glenn Cada, Fish biologist and hydropower expert**

Project documents that discuss impacts to fish communities and fisheries in the area of the Pak Beng Hydropower Project (“the Pak Ben Dam”) acknowledge that the project will have serious impacts on the upstream movements of fish, including the endangered Mekong giant catfish. The studies also note the expected loss of downstream-moving adult and early life stage fish, both within the reservoir and through turbine passage mortality. However, the information collected through brief 2011 monitoring studies is far from adequate to either characterize the fish resources at risk, assess possible impacts, or to judge the effectiveness of proposed mitigation measures for the Pak Beng Dam.

## **Limited data sets, lack of baseline, selective sampling**

There are an estimated 165 species of migrating fish in the Mekong River.<sup>3</sup> However the environmental studies for the Pak Beng Dam do not provide sufficient information to assess the impacts of the dam on fish passage. The fish community in this area of the Mekong River was characterized by inadequate sampling techniques carried out over a few days at six stations in 2011; a total of 105 fish were collected in the dry season and 79

fish in the wet season.<sup>4</sup>

This information is not sufficient to describe the fish community that may be altered by the proposed project. Similarly, field sampling of the plankton and benthic invertebrate communities near the site was not adequate. Such information should include the complete list of species that migrate through the project area, seasonal timing of the migrations, and estimates of the sizes, ages, and numbers of each upstream-migrating fish species. Similar information should be provided for the subsequent downstream migrants.

Sampling techniques used were also selective: For example, the small quantity of water – thirty liters – used to characterize plankton in the Mekong River, would be unlikely to collect ichthyoplankton (drifting fish eggs and larvae). The sampling technique for benthic organisms (an Ekman dredge) is also very selective, as it only collects organisms that live in mud and other loose sediments. Benthic organisms that live on rocks are potentially more valuable food organisms for higher trophic levels, but would not be collected by an Ekman dredge. Similarly, the techniques for collecting fish (seines and nets) are selective; they would tend to collect smaller fish because larger fish



could easily avoid the cast nets or beach seines.<sup>5</sup>

The information that is provided for fish species is general and lack specifics, for example related to migration and behavioral patterns, which are essential in understanding how fish species will be affected by the dam. Some of the information presented concerns species in the Lower Mekong River Basin that might not be found in the project area. There is a need for studies to focus on those species known to reside in the project area or known to migrate into the project area.<sup>6</sup>

## **Mitigation measures are untested and inadequate**

### *Upstream migration*

To mitigate blockage of upstream migration, a nature-like fishway has been proposed. The claim that upstream fish passage will meet the MRC’s preliminary design guidance requirement of 95% passage is unsubstantiated and unconvincing. Proposed measures to mitigate the impacts on fish migration have not been tested within the Mekong and therefore it is impossible to assess their effectiveness in this context.

Project documents examined include: The Environmental Impact Assessment, Transboundary Environmental and Social Impact Assessment & Cumulative Impact Assessment and Design Report of fish passage facilities.

<sup>3</sup>Baran et al. Fish, Sediment and Dams in the Mekong: <https://cgspace.cgiar.org/rest/bitstreams/72883/retrieve>

<sup>4</sup>Environmental Impact Assessment, pg. 113-124

<sup>5</sup>Environmental Impact Assessment, pg. 113-114

<sup>6</sup>Transboundary Environmental and Social Impact Assessment & Cumulative Impact Assessment, pg. 91

Fish migrating upstream through the Mekong River will be forced to pass through the nature-like fishway - a much narrower channel than before. It has been found at other hydropower projects that predatory fish and birds take up residence in the fishway and remove large numbers of migrants before they can reach the upstream impoundment, thereby reducing the effectiveness of the mitigation measure.

Mekong giant catfish migrate from their habitat in the middle Mekong Basin to spawn in the Upper Mekong Basin in Chiang Khong District, Chiang Rai Province, Thailand during the end of April to May. Construction of the Pak Beng Dam would obstruct the Mekong giant catfish unless an appropriate fish pathway can be designed. However, so far, no studies have found a fish pass is suitable for Mekong giant catfish, nor is such data available for other fish species in the Mekong.”<sup>7</sup>

The upstream fish bypass at the Pak Beng Dam appears to have been designed based on the size of fish caught within the limited sampling (designed for 50- to 60-cm-long fish. However, almost certainly, larger fish would have escaped capture by this fishing gear, so there is strong likelihood that the design underestimates the length of the fish that must pass the dam. Larger fish, including the Mekong giant catfish, may not be able to use the bypass fishway and will be blocked by the dam. In the long run, this will have a size-selective effect on the fish

populations. The fish bypass may have the effect of selecting for the smaller individuals of each species, thereby reducing the average size of the population and the maximum lengths of the largest (oldest) individuals.<sup>8</sup>

### ***Downstream passage***

Regarding downstream movements of fish, no quantitative assessments of reservoir passage mortality or turbine passage mortality were provided, nor were any mitigation measures suggested for these losses to the fish community. No fish screens or other measures are proposed to prevent fish from passing downstream through the turbines. The proposed bulb turbines may allow survival of small fish, but larger fish, including Mekong giant catfish, would have difficulty passing through the turbines without injury. It is unclear what criteria will be used to determine “successful” fish passage.

Although there is no significant storage capacity, a pool will be created behind the dam that will be more like standing water than running water. Compared to the un-impounded river, water velocity will be slowed in the pool (“upstream backwater”) that is 97 km long. Consequently, the eggs, larvae, and juveniles of migratory fish species will not be transported downstream as rapidly as in the un-impounded river. These drifting or weakly swimming small fish may become trapped in the reservoir or consumed by resident fish and other predators. The loss of downstream-moving fish in early

life stages through reservoir-passage and turbine-passage mortality is a growing concern for large tropical hydroelectric dams. This issue is not adequately addressed in the EIA or other documents.

Furthermore, the prediction that a run-of-river reservoir will have positive impact on natural fish production (excluding long-distance migrants) is unsubstantiated. Rather, the project is likely to change the composition of the fish and benthic organism communities in the impoundment to favor those adapted to slower, deeper water.<sup>9</sup>

Failure of fish passage mitigation measures at the Pak Beng Dam would have serious impacts on a potentially large number of migratory fish species, including species that are rare or endangered or that contribute to commercial and local fisheries. Some fish species may be extirpated locally, and the relative composition of fish altered to favor non-migratory species. The loss of long-distance migrants could affect the fish community in a large portion of the Mekong River. The seriousness of impacts to upstream fish passage is acknowledged in the project documents, but it is equally true for downstream-moving fish through in-reservoir and turbine-passage mortality.

There are three operational dams in the Upper Mekong Basin above Pak Beng (the Manwan, Dachaoshan, and Jinghong

dams). Despite the existence of a cumulative impact assessment report, it is unclear whether these projects have been factored into planning and design for the Pak Beng Dam. In particular, this should include what is known about fish passage issues and mitigation within these projects and how this relates to Pak Beng.

### ***Hatcheries***

Project studies assume that fish populations in this area of the Mekong will be reduced as a result of the project. Reliance on hatcheries to counter these losses should be discouraged. Hatcheries will not be able to restore all of the numerous migratory species that will be impacted. Loss of fish from blockage of upstream migration and downstream passage mortality, coupled with hatchery supplementation of a few species, will lead to an unbalanced fish community in the Mekong River. The emphasis of fisheries studies should be on preserving the present populations of resident and migratory fish species in order to maintain a balanced community similar to the one that now exists in the Mekong.

### **Conclusion and recommendations**

Limited sampling conducted in the project area, coupled with the inconsistency of data collection techniques provides inadequate information with which to characterize fish resources at risk to as-

<sup>7</sup>Design Report of Fish Passage Facilities, pg. 3-25

<sup>8</sup>Design Report of Fish Passage Facilities, Section 3.6.1

<sup>9</sup>Environmental Impact Assessment pg. 282



sess the full impact of the Pak Beng Dam on Mekong fish within the project area, as well as upstream and downstream of the dam site. Incorrect and contradictory statements throughout the project documents related to fishery impacts and fish passage also demonstrate a lack of knowledge of the fish community in the area.

The absence of sufficient baseline data means that it is not possible to develop accurate and context specific mitigation measures. The mitigation measures for the Pak Beng Dam have not been tested in the context of the Mekong River, and it is therefore difficult to evaluate their via-

bility. Finally, without adequate baseline data it will be impossible to effectively monitor the impacts from the Pak Beng Dam on fish passage.

- » A multi-faceted program of environmental monitoring and research studies should begin immediately, before the construction is allowed to begin, and before the site is disturbed and the environment altered. This baseline information is vital to define the resources that would be altered by dam construction and operation, and it will form the basis for judging the effectiveness of mitigation measures.

- » Environmental monitoring studies should be carried out, including collection of fish in the project area over all seasons and for at least 2 years, using a variety of active and passive collection techniques.
  - » Both resident and migratory fish species should be thoroughly characterized (e.g., numbers, lengths, weights, habitat preferences).
  - » Monitoring should quantify the numbers and biomass of resident fish and the numbers and seasonality of upstream migrating spawners and downstream drifting fish eggs, larvae, and juveniles.
  - » In addition to monitoring to characterize the fish community near the Pak Beng Dam, laboratory and field studies should be carried out to evaluate (1) the likelihood that the proposed upstream passage mitigation (the nature-like fish pass) will be effective and (2) the consequences of turbine passage to downstream-moving fish.
  - » All planned monitoring and laboratory/field research studies should be thoroughly reviewed by subject matter experts before they commence so that the resulting data will be sufficient to answer questions about the impacts of the Pak Beng Dam on Mekong River fish.
- » Operational monitoring should include evaluation of fish passage mortality.
- » More information is needed on plans for “fish passage”, including the upstream fish passage design and downstream passage through the turbines. The following issues should be addressed:
  - » Information on how the location of the upstream fish passage structure was determined and whether it is based on knowledge of the distribution and movements of migratory fish.
  - » Whether upstream fish passage will be large enough to accommodate giant Mekong catfish.
  - » The criteria by which “successful” fish passage will be determined.
  - » An assessment of turbine passage mortality among downstream drifting and migrating fish, and if necessary, proposed mitigation measures.
  - » Further information about proposed fish hatcheries. E.g. how many net pens, which fish species will be cultured and expected output.

# Social Impacts Review

## Bruce Shoemaker, Specialist on resettlement and natural resource issues in the Mekong Region

The project documents prepared by the developers of the Pak Beng Hydropower Project “the Pak Beng Dam”) include a Social Impact Assessment, Resettlement Action Plan, Social Management and Monitoring Plan and an Ethnic Group Development Plan. Taken together, these documents contain a great deal of useful information. However, they also reveal serious inadequacies in the developer’s plans for addressing the project’s social impacts.

### *Information gaps and inaccuracies*

The Social Impact Assessment (SIA) states that developing hydropower in order to gain export revenues in Laos will support the Government of Lao PDR’s (GoL) objective of poverty eradication. This assumption is highly questionable based on past experience in Laos. For example, even with ongoing monitoring and support, the World Bank and Asian Development Bank have been unable to ascertain whether revenues received from their model Nam Theun 2 (NT2) hydropower project in Laos is in fact helping to eradicate poverty.

The SIA states that one community of 73

families (Luangtong) must be completely resettled; eight others face “relocation” of some of their households. An estimated 200 households or 800 people will need to be moved. However, according to the Vientiane Times,<sup>11</sup> a recent survey found that there are actually 1100, rather than 800, people who will need to be moved. While the project is a “run of the river” dam, there will still be “ponding” above the dam totaling over 7000 ha, of which 4178 ha comprises land and water (streams, wetlands, etc.) resources used by villagers, including 170 ha of lowland paddy fields.

The reports were published in 2015, however information in the report is dated, much of it drawn directly from previously published reports from 2003-7. This does not allow for consideration of important information now available (in 2017) from other large hydropower projects in Laos. For example, there is no consideration of the now widely acknowledged failure of the livelihoods restoration work at Nam Theun 2, as documented in a series of reports by the independent Panel of Experts as well as other researchers and monitoring groups<sup>12</sup>. The SIA also frequently ref-

Project documents examined: Social Impact Assessment (SIA), Resettlement Action Plan (RAP), Social Management and Monitoring Plan (SMMP), Ethnic Group Development Plan (EGDP)

erences Decree 192 on resettlement,<sup>13</sup> which has now been revoked and replaced by a different decree.<sup>14</sup>

The SIA acknowledges that the project, “[...] Will have a negative impact on fishing activities and associated household income levels.”<sup>15</sup> Without setting out any criteria for its claim, the SIA discounts the importance of this to upstream communities, claiming that there is only a “limited fish population” and that fisheries for these villages are thus only of moderate importance.

### *Resettlement plans are flawed and under-resourced*

The Social Management and Monitoring Plan (SMMP) includes detailed “compensation principles” which spell out the company’s compensation and mitigation obligations. This includes a general principle that affected people should receive equivalent replacement land and resources and be left off better than they were before the project. However, there is very little information as to how this is to be accomplished.



<sup>11</sup>Vientiane Times, April 10, 2017: <https://www.pressreader.com/thailand/the-nation/20170411/281668254836549>  
<sup>12</sup>Nam Theun 2 Dam Panel of Expert Reports, <http://projects.worldbank.org/P076445/lao-nam-theun-2-power-project-former-under-pe-p004206-len?lang=en>  
<sup>13</sup>Social Impact Assessment, pg. 9-2  
<sup>14</sup>Decree on Compensation and Resettlement Management in Development Projects: <http://www.laolandissues.org/wp-content/uploads/2016/06/Decree-84-April-5-2016-replacement-of-decree-192-English.pdf>

The resources devoted to implementation of the SMMP, including compensation, are vastly inadequate. Over the 25-year life of the project a total of US \$10.3 million is budgeted, less than half of one percent of the overall cost of \$US 2.372 billion for the Pak Beng Dam. Of this amount 80% (US\$8.15 million) is for direct costs related to resettlement and compensation for lost land and other assets, leaving just US\$ 2 million for all livelihood restoration activities. The SIA's proposal to try to address long-term fisheries losses through a potential increase in fisheries in the upstream pond area will require a well-managed and resourced program. Despite the SIA's acknowledgement that livelihood restoration is long term and of high significance, the fisheries program has a total budget of only \$250,000 over the life of the project.

The plan proposes suitable and sufficient replacement land for resettled communities. However, as seen in past projects, this is based on the flawed assumption that there are large areas of unused land in the country that can provide good substitutes for the land people already have. Experience shows that land provided is invariably either poorly suited for agricultural related activities (including livestock raising) or is provided at the expense of other adjoining communities, a situation which often leads to conflicts. This issue is not addressed in the project plans.

Many indigenous communities in Pak

Beng have already gone through one process of coerced internal resettlement through the GoL's village consolidation and focal zone development strategies. A series of independent reports by UNDP, NGOs and other entities have shown that this policy has often damaged the livelihoods and well being of indigenous communities—in large part due to the lack of available land and other resources at consolidation sites.<sup>16</sup> Given the movements and disruption that has already occurred, it is very unlikely that the proposed resettlement sites will provide sufficient land to meet the needs of communities to be resettled.

The Resettlement Action Plan (RAP) and SMMP are based on similar past plans for resettlement in other hydropower projects in Laos, which have not succeeded in adequately restoring the livelihoods of those resettled. For example, the Nam Theun 2 Dam, despite a much higher level of resources than is planned for Pak Beng and ongoing international monitoring and attention, has failed to restore the livelihoods of those resettled after more than ten years of planning and implementation.<sup>17</sup>

#### ***Downstream impacts are not addressed***

Below the dam, the SIA states that there will be a negative long-term impact on fisheries due to impacts on fish migration and water quality. "The change in flow regime and ecology will have a negative impact on fish availability, species variety and fish catches between downstream

and upstream areas. This decline will impact on the villagers in terms of nutrition and also in terms of way-of-life of local villagers."<sup>18</sup> However, the SIA is vague regarding the number of potentially impacted downstream communities. This is a serious gap running through all of the Pak Beng Dam social documents.

Experiences over the last 20 years in the Lao PDR, as well as elsewhere in the Mekong Basin, have clearly shown that significant negative livelihood impacts invariably occur in areas downstream of large hydropower projects. For example, the Theun-Hinboun and Nam Theun 2 Dams have led to significantly more severe downstream impacts, over much wider impact areas, than were anticipated in planning documents for those projects.<sup>19</sup> This is barely acknowledged and not quantified in any of the Pak Beng Dam documents. Despite recognition of fishery losses in the SIA, there are no plans or budgets provided for compensation of these in downstream areas. The SMMP proposes allowing impacted downstream households to access the upstream head pond area, where it is hoped that an increase in fish will occur. The

report acknowledges that doing this will be challenging and require active management, yet there are no specific mechanisms, nor a sufficient budget allocated, to ensure that this will happen.<sup>20</sup>

#### ***Lack of independent oversight and effective grievance procedure***

The RAP and SMMP are to be implemented by Environment and Social Management Units under the overall supervision of an Environmental Management Unit of the Ministry of Natural Resources and the Environment (MONRE). The complex administrative structure laid out in the plan does not include any mechanism for formal input or representation by members of the affected communities and do not have any provisions for independent oversight.

The SMMP and RAP promote the establishment of a formal "grievance procedure" to resolve problems relating to whether project affected people receive promised or just compensation. Evidence from other projects has demonstrated that once a project is defined as "a government project" supported by officials,

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<sup>15</sup>Social Impact Assessment, pg. 7-11

<sup>16</sup>Ian G. Baird and Bruce Shoemaker, Unsettling Experiences: Internal Resettlement and International Aid Agencies in Laos: <http://www.newmandala.org/wp-content/uploads/2007/12/baird-and-shoemaker-2007.pdf>

<sup>17</sup>Nam Theun 2 Panel of Experts report, 2015: <http://documents.worldbank.org/curated/en/185921468188934867/Lao-Peoples-Democratic-Republic-Nam-Theun-2-Multipurpose-Project-twenty-fourth-report-of-the-international-and-social-panel-of-experts>

<sup>18</sup> Social Impact Assessment, pg., 7-20

<sup>19</sup>Bruce Shoemaker, Trouble on the Theun-Hinboun: <https://www.internationalrivers.org/node/4100> & Nam Theun 2 Power Project, Panel of Expert Reports: <http://projects.worldbank.org/P076445/lao-nam-theun-2-power-project-former-under-pe-p004206-len?lang=en>

<sup>20</sup>For comparison, the Nam Theun 2 downstream program had an initial budget of over \$16 million, an amount that proved insufficient to even begin to restore the livelihoods of affected downstream people.

people do not feel comfortable making complaints through such a mechanism. Villagers are thus unlikely to use the grievance process for any fundamental issues, particularly ones that might involve malfeasance on the part of company or local officials. It has been documented that local villagers worry about the prospect of arrest or other repercussions if they complain about a government endorsed project. Experience shows that it is not possible to create localized environments of accountability or establish participatory mechanisms when the overall environment in the country is hostile towards such structures.

#### ***Lack of regard for ethnic minority rights***

The Ethnic Group Development Plan (EGDP) notes that 46.4% of project affected people are lowland Lao, 12.5% are Tai (Lue) and 34.2% are Khmu (an Austro-Asiatic group). Around 6.8% are from Hmong or other highland groups, however they will not be among those relocated or resettled. The EGDP recognizes the indigenous communities have their own cultures, traditions and needs in resettlement. It notes that indigenous villages slated for resettlement are largely dependent on non-timber forest products (NTFPs) for their livelihoods and require “large areas for community forests and NTFPs.” However, for the reasons noted above it is highly unlikely that sufficient land, both agricultural and community forest, will be available at the resettlement sites. Much of the other special assistance to be provided (such as

Lao language training) is likely to further the cultural assimilation of project affected indigenous people rather than supporting them to preserve their traditional cultures, beliefs, livelihood systems and languages.

#### **Conclusion and recommendations**

The Pak Beng Dam planning documents provide an incomplete picture of the project’s likely impacts and are especially deficient in determining downstream impacts. Even if impacts were better documented, the proposed budget for the social program is inadequate to address them. It is highly unlikely that the proposed resettlement sites contain sufficient high quality land, particularly for indigenous people with a high dependence on NTFPs. The vaguely described livelihood restoration activities are unlikely to make a significant contribution towards making up for the loss of productive land and resources.

Many of the mitigation and compensation solutions appear to be based on models used at other large hydropower projects in Laos that have failed to deliver on promises to restore livelihoods or minimize environmental damage. The plans are also based on unproven and unrealistic assumptions about the capacity of Government of Lao PDR (GoL) authorities to implement or adhere to essential aspects of these plans. These fundamental issues call into question the overall legitimacy and soundness of the Pak Beng Dam Social Plans.

» A more comprehensive study of likely upstream and downstream impacts, one that quantifies the actual number of people and communities to be affected and is based on current data, is urgently needed. Mechanisms to fully address those impacts then need to be devised, including for those to be relocated and those who will experience disruptions to their river-based livelihoods upstream and downstream due to the dam.

» An independent monitoring mechanism is needed to hold company or government officials accountable if promised compensation and resettlement benefits do not materialize or if project impacts are worse than envisioned in project documents and agreements. An independent assessment of the land offered for resettlement, undertaken with the participation of those to be resettled, is also urgently required.



# Gender Impact and Transboundary Impacts in Thailand Review

Dr. Kanokwan Manorom, Associate Professor, Faculty of Liberal Arts, Ubon Ratchathani University, Thailand.

## Gender Impacts

Overall, the gender issues address in the Social Impact Assessment (SIA) and Transboundary Environmental and Social Impact Assessment & Cumulative Impact Assessments (TbEIA) are largely inadequate, and the data too general to provide a comprehensive understanding of the social impacts of the Pak Beng Dam.

There is insufficient baseline data to fully understand the impacts of the Pak Beng Dam, particularly on women of different ethnicities and social classes. The data presented on gender roles is too general and fails to identify diversity among women. For example, difference in ethnicity, (Lao, Hmong, Tai and Khmu), social, economic, cultural status, resource dependency, and expectation in relation to the Pak Beng dam. Furthermore, the report does not provide or identify existing gender inequality and cultural protocols in relation to resource access, use and control in the Mekong.<sup>22</sup>

There is no gender-disaggregated data on fishing, farming, cultural performance or trade. The SIA instead focuses on broad issues based on existing data on gender such as reproductive health, fertility rate, infant mortality, hygiene and sanitation, clothing styles and life expectancy.<sup>23</sup> Due to the lack of disaggregated data on gender, proposed mitigation measures are unlikely to address issues related to difference in social and economic well being, as well as cultural context. The SIA states, “[...] vulnerable groups, including children, may be positively and negatively impacted from the construction of the project depending on the mitigation and other factors. The key negative impacts are due to the loss of land and potentially having to work harder while the positive impacts are related to new opportunities to access more social facilities and to participate in the project development. Overall this impact can be positive or negative and should be of medium significance.”<sup>24</sup> This is misleading, and also selective, as disaggregated data on gender regarding the anticipated impacts has not



been collected. It is therefore likely that future mitigation measures and implementation programs would not be provided specifically to address impacts on women, including those from different social, economic and cultural contexts.

The report explains that village leaders, village representatives (including women and vulnerable groups) were informed about the project and consulted on resettlement and livelihood development programs for the village.<sup>25</sup> However, the assessment team fails to identify the women joining the public consultation. They also do not note which ethnic groups were included in the meetings and the numbers that participated. Furthermore, the assessments do not provide a clear definition of “vulnerable groups.”

The SIA and TbEIA fail to include meaningful participation and consultation in

developing mitigation measures to manage risks that will be faced by women and vulnerable groups. Consequently, the Pak Beng Dam will be unlikely to avoid or effectively mitigate these impacts.

## Transboundary impacts on communities in Thailand

The Pak Beng Dam would impact Thai communities located along the Mekong River in zone 2, in a similar way to communities in Laos. However, developers have not collected specific baseline data in Thailand nor do they reference existing data. The data and issues presented in the project documents do not provide enough information to adequately and accurately assess the impact of the Pak Beng Dam on communities in Thailand.

Information provided on fishing and fish catch along the Mekong River in

Reports examined: Social Impact Assessment and Transboundary Environmental and Social Impact Assessment & Cumulative Impact Assessments

<sup>22</sup>Social Impact Assessment, 5-19

<sup>23</sup>Social Impact Assessment, 5-19

<sup>24</sup>Social Impact Assessment 7-12

<sup>25</sup>Social Impact Assessment pg. 8-1 to 8-12 & Transboundary EIA, pg. 309-311

Thailand is insufficient and at times inaccurate, appearing to downplay the importance of fishery resources for communities in Thailand. The TbEIA report states, “natural wild fish capture is found insignificant compared with fish cage culture”. However fish cage culture is mostly for rich and some middle-income families who have enough cash to invest in fish cages. Among rural Mekong communities in Thailand, less than 10 percent of families can afford such cages. The majority of villagers are middle to low income.

The SIA notes the fact that fishery resources within the Mekong are rich, and that many people downstream in Thailand are dependent on the Mekong River mainstream for day-to-day living, including for water supply, navigation, crops, tourism and fish. Impacts from the Pak Beng Dam on fishing and river-bank gardens would be severe due to changes in water level and blockage of fish migration pathways. However the assessment team has not studied or provided substantial fishing data along with analysis of other related livelihoods practices at a local level in Thailand. There has been no meaningful consultation with communities in Thailand.

### Conclusion and recommendations

- » Further studies are needed to gather disaggregated baseline data for communities directly and indirectly im-

pacted by the Pak Beng Dam, based on the specific social, economic and cultural context.

- » The report must provide more information regarding how the Pak Beng Dam would disproportionately impact women, for example, as heads of households, and poor women and children, and the result of these impacts not only for the current generation but also for future generations, if the Pak Beng Dam were built.
- » Further information is needed as to data collection methods and consultation with affected communities. For example, this includes details of who was interviewed; how these interviews were conducted; how many people were interviewed; whether interviews were held with villagers upstream and downstream of the dam site, and with communities living in both lowlands and highland areas. It further includes information on the identity and numbers of women and ethnic groups joining the public consultation.
- » There is a need for further study of impacts of the Pak Beng Dam in Thailand, including adequate baseline data on fisheries and livelihoods of Thai communities.
- » The assessment team must carry out meaningful consultation with communities in Thailand, before decisions are made on whether to proceed with the project.

# Transboundary EIA and Cumulative Impact Assessment Review

**Matthew Baird, Environmental lawyer and EIA Expert**

The Scoping Report for the Pak Beng Hydropower Project (“Pak Beng Dam”) identifies the requirement for a Transboundary and Cumulative Impact Assessments (see. 7.6.4), to provide adequate information and analysis for discussion and decision-making on the project. The Lao EIA Decree and 2015 Policy on Sustainable Hydropower also require that the EIA Report consider the transboundary impacts of the project.

The developers submitted the Transboundary EIA and Cumulative Impact Assessment Final Report dated May 2015 (TbEIA Report). Although the report is dated 2015, most of the data and information presented is from much earlier. The report identifies nine issues for consideration and study for cumulative impacts. Some of these are also considered for transboundary impact assessment. The issues are: fish migration and fisheries; navigation; water quality; dam safety;

climate change; population and culture; socio-economics and livelihoods; health and nutrition; and tourism.<sup>30</sup>

### *Fish Resources*

In examining the impacts of the Pak Beng Dam on the availability and sustainability of fish resources for fishing dependent communities, the TbEIA Report cites an MRC report from 2010 on consumption of fish and other aquatic organisms from the Mekong River,<sup>31</sup> while referring to 2008 data (Table 10).<sup>32</sup> The use of 2008 data in a 2015 report for a consideration of the potential impact of the Pak Beng Project in 2017 does not meet minimum standards of EIA investigation and reporting.

### *Sediment Containment and Flushing*

The impact of the Pak Beng Dam on sedimentation loads may also have

Project documents examined: Transboundary Environmental and Social Impact Assessment & Cumulative Impact Assessments TbEIA Report, pg.21

<sup>30</sup>The report notes that consumption is high, at 41-51 kg/capita/year which is very a high consumption level globally: MRC, 2010

<sup>31</sup>TbEIA Report pg.101

<sup>32</sup>Facts about the Pak Beng Hydropower Project: <http://www.mrcmekong.org/assets/Publications/33Fact-sheet-of-Pak-Beng-26-Jan-2017.pdf>

transboundary impacts that have not been assessed. The assessment of the proposed sediment flushing facility such as discharge sluice gate and low bottom holes under the powerhouse<sup>33</sup> does not consider the cumulative impacts of the Xayaburi Dam and the potential impacts to Cambodia and Vietnam in the event of the failure of the sediment flushing facility to be effective.

### **Water Quality**

The TbEIA Report also refers to data from 2010 in its assessment of water quality along the Mekong.<sup>34</sup> There are 55 water quality monitoring stations along the Mekong. Since 2010 there have been a number of developments along the Mekong River, including the construction of the Xayaburi Dam, other hydropower projects, and other river infrastructure works. It is important to consider the consequences of those developments on the potential cumulative and transboundary impacts using current data.

### **Climate Change**

The section on climate change at 5.5 fails to make any assessment of the potential impacts of climate change, including rainfall changes, drought and downstream and transboundary consequences.<sup>35</sup> These issues must be considered both in the context of cumulative impact over the next 50 years and the uncertainty for river flow and increased sedimentation as well as the downstream impacts in both Cambodia and Vietnam as a

consequence of the building of the dam and the creation of the catchment.<sup>36</sup> None of these impacts have been modeled. It is therefore not possible to assess the cumulative impact of this project on water availability in Vietnam or Cambodia.

### **Public Participation**

Public participation as a centerpiece of Transboundary EIA promotes the transparency and legitimacy of decision-making processes in projects with transboundary effects. Transboundary EIAs conducted without adequate public participation may address State-to-State concerns, but completely miss important local issues and valuable local or indigenous knowledge.

It is difficult to fully quantify the standards that need to be met to conclude whether public participation in EIA in a Transboundary context is “meaningful” and adequate. The recently concluded Regional Guidelines on Public Participation in EIA in the Mekong Region<sup>37</sup> provides the following definitions that can be applied to all public participation in EIA.

*Meaningful public participation begins early in the EIA process and is ongoing throughout the life of the project. It is an inclusive, accessible, and timely process, undertaken in an open manner. It involves providing comprehensive information that is understandable and readily accessible to stakeholders in a culturally-appropriate manner and therefore enables the consid-*

*eration of stakeholders’ views as part of decision-making. Meaningful public participation should be conducted in a manner commensurate with the risks of the proposed project and the potential impacts on those affected by the project.*<sup>38</sup>

The Economic Commission for Europe has also adopted a Guidance on Public Participation in Environmental Impact Assessment in a Transboundary Context (the ECE Guidance), which support the leading European intergovernmental conventions on EIA [see textbox].

In the context of Transboundary EIA processes there are two occasions where the issue of “meaningful” public participation will arise. The first will be in the preparation of the Transboundary EIA Report. The second will be in the consultation and public participation process following the receipt of the EIA Report, which will include information on the transboundary environmental and social impacts and any cumulative impact assessment. If there has not been “meaningful” public participation at the first part of the EIA preparation stage, it is unlikely that this defect could be cured

by consultation after the EIA Report has been submitted for approval.

In the case of the Pak Beng Dam, the Government of Laos has already approved the project. The current consultation process undertaken by the Mekong River Commission is constrained by the errors and problems of the EIA Report 2013, including the deficiencies contained in the TbEIA Report. Although the MRC highlights that the PNP-CA process did lead to amendments to the layout and design of the Xayaburi Hydropower project,<sup>39</sup> the ECE Guidance clearly identifies that comments received on transboundary EIAs from any stakeholder in any potentially affected country should be considered in making a decision on the EIA, and that final decision should be published in neighboring countries.

Section 7 of the TbEIA Report details the level of public participation undertaken in the preparation of the EIA Report. The TbEIA Report places the MRC as the key point for regional consultation.<sup>40</sup> The Report reveals significant deficiencies with respect to public participation during the

<sup>34</sup>See for example TbEIA Report pg.114, figure 77

<sup>35</sup>TbEIA Report, pg.247.

<sup>36</sup>Even though the Pak Beng Project has been described as a “run-of-river” hydropower project it still creates a large catchment that will be impacted by climatic conditions. It also has the capacity to generate greenhouse gas emissions from the catchment area.

<sup>37</sup>Guidelines on Public Participation in Environmental Impact Assessment in the Mekong Region, Mekong Partnership for the Environment. First Edition, Pact, Inc. Bangkok, Thailand. March 2017 (Regional Guidelines)

<sup>38</sup>Regional Guidelines, pg.11

<sup>39</sup>Procedural Rules for Mekong Diplomacy, PNP-CA brochure: <http://www.mrcmekong.org/assets/Publications/PNP-CA-brochure-11th-design-final.pdf>

<sup>40</sup>TbEIA Report, pg. 283

EIA preparation stage. Section 7 identifies the Government agencies contacted but lacks any clear details of the investigations undertaken on the transboundary impacts. No consultation occurred with the Vietnamese Government.<sup>41</sup> Reference is made to consultation with NGOs in Cambodia and Vietnam, but it is not clear what information was provided or discussed.

The public participation procedures undertaken as part of the preparation of the TbEIA Report were not adequate to meet any definition of “meaningful” public participation. No consultation occurred between the potentially impacted communities and the EIA consultants and no studies or assessments have been included to demonstrate that the potential impacts of the Pak Beng Project have been assessed in Cambodia or Vietnam.

### Conclusion and recommendations

The conclusion of the TbEIA Report is that:  
“The results of the studies carried out for this assessment indicate that the PBHPP will not have significant transboundary and cumulative impacts on the Mekong River flows, fish migration, or fisheries. Besides the well designed fish pathway, this assumes that the recommended fisheries monitoring is implemented.”

“For transboundary social impacts, the preliminary assessment indicated that the creation of Mekong mainstream hydropower dams in Lao PDR will surely pro-

vide both adverse and beneficial impacts to Zone 2 (Thai-Lao), Zone 4 (Cambodia and Tonle Sap Lake), and Zone 5 (Mekong Delta in Vietnam).”<sup>42</sup>

Based on the information in the TbEIA Report, this conclusion cannot be justified. No evidence is provided that sufficient studies have been undertaken to reach these conclusions. The EIA Report and the TbEIA Report contain insufficient assessment of both the physical impact of the Pak Beng Project as well as a lack of knowledge of the cumulative impacts, both physical and social, of the Pak Beng Project together with the Xayaburi and Don Sahong hydropower projects.

The assessment of fish resources, sediment containment and flushing, water quality, climate change, and public participation is deficient. It is not possible to draw any conclusions from the information contained in the TbEIA Report and it is not possible to conclude that these issues will be addressed by the project proponent. The TbEIA Report does not adequately address the potential transboundary or cumulative impacts of the Pak Beng Project. The Report was finalized in 2015 but does not take into account a number of recent studies and reports (including the 2010 SEA Report commissioned by the MRC). Furthermore, recent studies of the impacts of the Xayaburi Dam, which would have a bearing on the Pak Beng Project, have not been referenced.



As a result, the TbEIA Report 2015 does not enable an accurate assessment of the potential environmental and social impacts of the Pak Beng Project on downstream countries and communities.

- » The Report needs to be revised to take into account accumulated data from the last 10 years. The revised TbEIA Report should also take into account new economic modeling of potential impacts, up-to-date economic valuation of fish stocks and fishing resources and the potential cost of replacement for the loss of fish stocks and other aquatic resources.
- » The lack of consultation during the preparation of the EIA Report further highlights the flaws in the EIA Report and the TbEIA Report. These

flaws go to the heart of the EIA process and cannot be cured by the current consultation being undertaken through the MRC process. The initial failure of the TbEIA assessment can only be cured by further consultation with the communities, NGOs and governments in Cambodia and Vietnam. Additional studies will need to be undertaken and assessments made in conjunction with the public and other Stakeholders.

This analysis uses principles derived from European conventions as well as relevant international legal principles. As the TbEIA Report recognizes, there is a need for Mekong countries to adopt environmental impact assessment guidelines for projects with transboundary impacts.

<sup>41</sup>TbEIA Report, pg. 284-286

<sup>42</sup>TbEIA Report, pg.290

# Standards for effective transboundary impact assessment

There is currently no Mekong Region agreement on the processes to be followed for transboundary EIA. Drawing on the experience of international treaties on the topic and developing obligations under international environmental law, some of the general requirements for effective transboundary EIA include:

- » The establishment of effective national EIA procedures;
- » The designation of a focal point in each national country to be responsible for any communications between the host country and the impacted country or countries;
- » The opportunity for equivalent public participation in EIA for both the public of the impacted country and the public of host country;
- » Notification to the focal point of the impacted country as early as possible with the relevant information.
- » Joint responsibility to provide for public participation in the areas likely to be affected by the proposed project.
- » Joint responsibility for distribution of the EIA documentation and the transmittal of comments to the focal point of the host country.
- » A requirement that the host country takes into account submissions from the impacted country in reaching a decision about the project or activity;
- » Providing a copy of the decision of the host country and any environmental management plans or approval conditions;
- » A mechanism to pay for the Transboundary EIA process.

The Economic Commission for Europe has adopted a Guidance on Public Participation in Environmental Impact Assessment in a Transboundary Context (the ECE Guidance), which support the leading European intergovernmental conventions on EIA. The UNECE Guidance identifies several best practices that have relevance to the Mekong region countries and the PNPCA process:

- » Neighbouring countries should be notified of project proposals with potential transboundary impacts as early as possible, and receive notification no later than the general public in the country of the proposed project.
- » All countries potentially affected by a proposed project – both the host and neighbouring countries – should be jointly responsible in disseminating information about the EIA and collecting feedback from Project Affected People and other stakeholders for consideration in the decision-making process.
- » All comments received on transboundary EIAs from any stakeholder in any potentially affected country should be considered in making a decision on the EIA, and that final decision should be published in neighbouring countries.
- » Financial support may be needed to: translate the EIA documentation into the language(s) of the affected country; translate the public comments and recommendations back into the language of the country of the project proposal; disseminate EIA materials (including booklets, brochures) within the neighbouring country; pay for information distributed through newspapers, radio, TV, e-mail or Internet; and organize public consultation meetings.

