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HIST 1000

23 April 2019

Externalized Costs and Benefits in the Construction of the Theun Hinboun Hydropower Project

Dam construction in the 20th century has become emblematic of the intersecting interests and competing power politics that engender the relationships between water and society. Relationships between water and society converge at multiple scales in a single system. A diverse set of actors on the local, national, and transnational scale establish distinct relationships with water to conduct daily activities, pursue development strategies, or coordinate regional economic cooperation, respectively. The management of water resources within the Mekong River system provides a context to examine how these power politics were significant in determining the development paradigm of the Southeast Asian region. This paper will focus on the construction of the Theun Hinboun Hydropower Project in Laos in the 1990s, a project undertaken in partnership with the Asian Development Bank (ADB) early in the transition of Southeast Asian countries to market economies following the Cold War. The completed project produced economic returns and power generation benefits to the country of Laos, but it also generated substantial social and environmental costs that disproportionately burdened local villages along the altered rivers. The externalization of these environmental and social costs by the Asian Development Bank to the local populations demonstrates the power dynamics that allowed the Asian Development Bank to impose their top-down vision of costs and benefits that narrowly focused on financial and economic returns for their stakeholders.

This paper will demonstrate how the Asian Development Bank arbitrarily defined the cost and benefit analysis framework of the Theun Hinboun Hydropower Project to externalize social and environmental costs while narrowly defining the economic and financial benefits. This paper will begin with a brief description of the circumstances preceding the period of dam construction that provided the context for intervention by the ADB and other national and transnational actors. It will then proceed with a discussion of the history of the hydropower project including the key stakeholders involved in the project. This will be followed by a close reading and critical analysis of the ADB’s *Project Completion Report* that codified its narrow definitions of costs and benefits. This perception of the Theun Hinboun Hydropower Project will then be contrasted with alternative perspectives from local villagers and transnational groups contextualized within historical criticisms of the ADB. The paper will conclude with remarks reflecting on how the construction of the Theun Hinboun Hydropower Project demonstrated the tensions between the contradicting bottom-up and top-down visions of development in Laos that featured prominently within this narrative.

The defining paradigm that characterized development in Laos before the 1990s was the great power struggles between the United States and the Soviet Union during the Cold War. This conflict affected the greater Mekong River region more broadly and often pitted these two competing world powers against each other backing opposing domestic groups battling in civil wars. This internal dynamic extended into Laos in a dramatic fashion. Violence riddled the country before culminating in a Soviet victory to secure dominance and influence within the country. Following the victory, the Soviets provided aid to rebuild industries and infrastructure within Laos. The provision of aid was another defining characteristic of this period that distinguished it from the post-Cold War period. The United States also engaged in disbursing aid to regional allies like South Vietnam to curb the ideological assault from the Soviet Union. A key feature of these aid packages, however, was their relatively narrow scope. The aid was motivated by geopolitical and ideological interests of the two world hegemonic powers attempting to promote their respective ideological projects.

Economic engagement in the region shifted by the end of the Cold War and the dissolution of the Soviet Union in 1991 from hegemonic powers funding and reconstructing battlefields to regional and transnational actors promoting market-oriented development reforms. A host of regional development organizations and initiatives too numerous to list in this paper emerged alongside groups like the Asian Development Bank and Association of Southeast Asian Nations (ASEAN) to coordinate development in the region. Although the ADB was created in 1966 by a group of member countries representing Asian nations and several other developed nations, it became particularly active in facilitating the shift to market economies in post-Cold War Asia. The ADB was founded as a “financial institution that would be Asian in character and foster economic growth and cooperation in one of the poorest regions in the world.”[[1]](#footnote-1) The ADB served as a conduit for the interests of capital to engage in the region by allocating funds from donor stakeholder countries to fund economic development projects in the region aimed at alleviating poverty and transitioning to market economies. The ADB facilitated the transition from the “battlefield to the marketplace” that characterized the development paradigm in the post-Cold War era.[[2]](#footnote-2) The ADB and its peers rendered the Southeast Asian region a commercial landscape for the development of capital and finance by transnational actors who often lacked any local connections.

The government of Laos initially conceived the idea of the Theun Hinboun Hydropower Project in 1991 following the collapse of the Soviet Union. The Mekong River region was one of the most underdeveloped river systems in the world following the political and economic instability of the Cold War era. The circumstances of the Cold War era were not conducive for the development of the river basin region due to these external pressures and the relative lack of local capacity. The aid that was received during the Cold War period was motivated more by political calculations than strategic economic development of the region. Once the Soviet Union was removed as a predominant actor in Laos and the region more broadly, the government of Laos pursued the idea of a hydropower plant on the Theun River within the Mekong River Basin. The hydroelectric potential of the region was widely known, but the conditions of the Cold War prevented any substantive investigation to determine optimal locations for hydropower plants.[[3]](#footnote-3) The government of Laos began its investigations in 1991. It then applied for and received a grant from the United Nations Development Program in 1992 to finance a feasibility study of the Theun River once it was evident that additional financing and technical expertise were required to implement the project.[[4]](#footnote-4) The government of Laos and its partners completed the feasibility study in 1993 and identified a suitable location for the planned Theun-Hinboun Hydropower Project.

The government of Laos formulated the Theun-Hinboun Hydropower Project as a public sector project with the intention of generating income and foreign exchange to boost the country’s economic development. Although the hydropower project would generate modest quantities of electricity for local populations, the government of Laos intended for the majority of electricity generation to be exported to Thailand in return for compensation through foreign exchange, which was crucial for Laos’s ability to engage in the regional and world economic system by enhancing its ability to pay for foreign products. The proposed project consisted of a 210 MW trans-basin diversion scheme across the Theun and Hai Rivers. The project began construction in 1994 at a site located approximately 100km upstream of the confluence between the Theun and Mekong Rivers.[[5]](#footnote-5) A narrow mountain pass separated the Nam Theun River Basin from the Nam Hai River Basin, which were connected through the project by an underground tunnel that diverted river flows from the Theun to the Hai River, a major tributary of the Hinboun River.

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Figure 1. Map of Laos indicating geographic location of Theun Hinboun Hydropower Project[[6]](#footnote-6)

The Asian Development Bank did not engage with the Theun Hinboun Hydropower Project until 1993 when the government of Laos requested a consultation with the ADB to coordinate assistance in negotiating with foreign investors. The ADB was eager to get involved in the region and play a role in the transition of the regional economies into market economies and to address the widespread poverty that afflicted the region. The ADB offered legal assistance to the government of Laos and helped coordinate the financial structure of the project. For instance, the ADB assisted in coordinating a power purchasing agreement between Laos and Thailand in 1996 which required Laos to export 95% of its generated power from the hydropower project to Thailand in exchange for payments in Thai baht and US dollars.[[7]](#footnote-7) The ADB also created a financing framework that coordinated a group of national and transnational actors, including direct funding from the ADB to Laos. The government of Laos secured a $60 million loan from the ADB to hold a 60% equity share through a state-owned company that was created specifically for this purpose, the Theun Hinboun Power Company. The deal also included granting both MDX Power Public, a Thai company that was later renamed GMS Power, and the Norwegian state-owned utility company Statkraft AS 20% of the shares each.[[8]](#footnote-8)

A diverse group of national and transnational stakeholders were involved in this large-scale project hydropower project, and each actor had a distinct financial or economic motivation. Laos was committed to the project because of its potential to bring desperately-needed foreign exchange to a country desiring to boost development but that lacked other natural resources and technical capacity. Thailand was invested in this project because a majority of the dam’s energy production was intended to be exported to the country from Laos to fuel their own economic development and growth. The ADB also had an interest in the success of this project to demonstrate its capacity to establish a model for future hydropower development project cooperation in the Mekong region.[[9]](#footnote-9) The financial stakeholders who provided the rest of the equity engaged with the project with the intent of securing financial returns from the commercial success of the project upon its completion. The relationships that these entities forged with the river were ones defined by exploiting the commercial potential of the region for economic development and financial returns to the benefit of the transnational stakeholders.

One crucial group of actors that was notably absent from these upper-level negotiations were the local populations that depended on the river’s resources for their daily lives and basic economic activities. A local lower class of fishermen, laborers, and farmers were familiar with the local and seasonal fluctuations of the river’s flows, and their daily lives and work were deeply rooted in these cycles. They relied on their knowledge of the river to perform daily work, and their culture embodied these elements. One consequence of this status is that they had limited power beyond their locality to influence development along the rivers and were thus subject to upstream and downstream alterations by actors with more technical capacity and capital and state support. Moreover, the local villagers were not consulted during the initial feasibility study or other early assessments.[[10]](#footnote-10) This inferior power relationship was consequential when construction of the dam project imposed social, environmental, and local economic costs on these populations, a topic that will be discussed in further detail later in this paper.

Construction of the Theun Hinboun Hydropower Project concluded in 1998, and following the completion of construction of the project the Asian Development Bank declared the project a resounding success. The ADB went as far as to congratulate themselves for “having backed a winner.”[[11]](#footnote-11) According to the ADB, the project was successful because it satisfactorily constructed a plant that operated at “high efficiency and with high economic and financial returns.”[[12]](#footnote-12) Alternatively, the Theun Hinboun Power Company displayed a statement on their website articulating that the success of the project would serve as a “guiding model for sustainable hydropower development in the Lao PDR.”[[13]](#footnote-13) The Asian Development Bank repeated this sentiment in their *Project Completion Report* that stated that the project was “a good example of how a Project should be implemented.”[[14]](#footnote-14) The ADB articulated the financial benefits of the project as the most important factors in defining the success of the project. The economic returns calculated by the ADB indicated “favorable liquidity, profitability, and leverage position,” which all refer to the financial soundness of the investment.[[15]](#footnote-15) However, these statements of self-congratulatory fervor were accurate only to the extent that the dam was successfully implemented and began to generate power for export to Thailand, thus satisfying the interests of the financial stakeholders.

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Description generated with very high confidence

Figure 2. Completed Theun Hinboun Hydropower Project[[16]](#footnote-16)

The Asian Development Bank’s proclamation of success relied on a narrow definition of the costs and benefits of the Theun Hinboun Hydropower Project in financial and economic terms. In the *Project Completion Report*, the authors evaluated the “initial performance and benefits” of the project by distinguishing between “financial performance of the Theun-Hinboun Power Company” and “economic performance” which was described as an “economic evaluation...from the perspective of the Lao PDR economy.”[[17]](#footnote-17) These labels emphasized the metrics that were of concern to the key financial stakeholders, and the benefits were reported in metrics of “return on equity,” “net profits,” and “dividends.”[[18]](#footnote-18) Although these metrics were important to evaluate the success of the project, they represented a particular top-down vision of development promoted by the ADB and its stakeholders. Considerations of social and environmental impacts were notably missing from this relatively narrow calculation of costs and benefits. Cost calculations articulated “base costs,” “financial costs,” and “contingencies,” but nowhere in the report were social and environmental impacts spoken of in this vocabulary.[[19]](#footnote-19) Instead, social and environmental impacts were given their own distinct section header that diminished the responsibility of calculating these costs in their official financial calculations.[[20]](#footnote-20) Although these impacts were acknowledged in the report, it is important to note the framework in which they were incorporated into it, namely the exclusion from the official calculations of costs and benefits.

The Theun Hinboun Hydropower Project was, in fact, a financial success narrowly defined by the Asian Development Bank’s standards. The hydropower project became the largest source of foreign exchange in Laos by the turn of the century.[[21]](#footnote-21) The financial performance of the project was also very sound for the first several years. Between 1998 and 2001, the period prior the completion of the ADB’s Project Performance Audit Report in 2002, the project netted $115.8 million in income, and these returns were expected to continue at a similar rate through 2006.[[22]](#footnote-22) These rates of returns were on par with expected financial returns. In terms of energy production, the hydropower facilities also fulfilled expectations and generated energy at an average rate of 96% of capacity over the same time frame.[[23]](#footnote-23) The Theun Hinboun Power Company also successfully exported 95% of this production to Thailand per the 1996 power purchasing agreement. These positive outcomes fulfilled the explicit objectives articulated by the ADB, but they failed to incorporate the externalized costs that the project generated and imposed on local populations.

The Asian Development Bank’s definition of success relied on a narrow analysis that obscured the many costs that were externalized to other populations and industries. These costs were distributed to other actors associated with the river on a more local level. The Theun Hinboun Hydropower Project forced the relocation of as many as 30,000 people; downstream fishermen reported decreases in catches between 30%-90%; increased flooding following the completion of the dam disrupted rice and other agricultural fields.[[24]](#footnote-24) Interviews with local villagers confirmed many of these outcomes. As one local restaurant owner noted, “This year in the dry season there are very few fish. They no longer come down since the dam was closed…I estimate that there is a 70% reduction in the number of Nam Kading fish available for sale here compared to this time last year.”[[25]](#footnote-25) Other interviewees from different villages cited decreases ranging from 30%-90%, which reflected threats to basic food security and market functions in these villages. Other downstream villagers complained, justifiably, that the increased flows during the dry season flooded their riverbank gardens, further threatening food security.[[26]](#footnote-26) These externalized costs disproportionately disrupted local populations while transforming the geography into commercialized space from the perspective of the transnational actors backing the project.

Although the government of Laos and the ADB pursued the Theun Hinboun Hydropower Project to promote economic growth, they prioritized growth of the energy industry backed by financial stakeholders over the economic markets that local populations engaged in. It is ironic that in promoting economic development, the project actually disrupted functioning local markets for fish and produce because of the impacts of the altered water flows. This national project prioritized economic development on a macro scale funded by transnational actors over Laos’s own populations and their local economic activity. This paradigm imposed a development strategy that represented the interests of elite national and transnational stakeholders in an overtly top-down vision of development.

The Asian Development Bank claimed that proper baseline measurements for the predictions of environmental and social effects were unavailable during their initial inquiries, but reports from external groups and NGOS suggest that adequate predictions were available but were not given sufficient attention. This is particularly true regarding the report prepared by the Norwegian Institute for Water Research (NIVA) and Norwegian Institute for Nature Research (NINA) in 1994-1995 in the earliest stages of construction of the project. The authors of the report intended to provide an independent assessment of the impact of the Theun Hinboun Hydropower Project on the affected aquatic ecosystems of the river system. The researchers gave particular emphasis to the impacts on water quality, aquatic life, and fish in particular.[[27]](#footnote-27) The authors of this report acknowledged the “[extreme dependence]” of local populations on the fish supply for their diets and nutrition, and they concluded that “the hydropower project will have strongly negative impacts on Nam Theun fish ecology and riverine fisheries.”[[28]](#footnote-28) This conclusion follows from the fact that the location of dam facilities interfered with the drifting eggs and early life stages of fish, which passed through the facility’s turbines without proper mechanisms for reentry of adult fish species in the opposite direction back into the reservoir. They also concluded that fish species in the downstream portion of the river would be sustained only if the river flows were consistent and did not recede too much in the dry season. Even short dry periods from turbine maintenance would disrupt and threaten these downstream fish populations and the local villagers who depended on them. This report suggests that some perception of the scale of environmental disruption was available to the Asian Development Bank in preliminary assessments of the project. These environmental costs were not properly acknowledged and were not measured as potential costs in the financial and economic calculations of the ADB.

Multiple entities like international NGOSs brought the issue of the externalization of social and environmental costs to the attention of the Asian Development Bank. In one letter to the President of the Asian Development Bank, Oyvind Eggen, the Director of the Association for International Water Studies (FIVAS), expressed concern over the handling of mitigation mechanisms for the local populations that were relocated or whose lives were dramatically altered due to the environmental and social costs from the hydropower project.[[29]](#footnote-29) Eggen cited earlier concerns that were “consistently ignored” by the ADB from other NGOS that warned of these impacts to local communities.[[30]](#footnote-30) His accusations even denounced the internal assessments performed by Norconsult, a Norwegian consulting firm hired by the ADB, of the environmental effects of the project. The report, writes Eggen, “was of such poor quality and so lacking in essential basic information that the study’s financier, NORAD, facing public pressure, rejected it soon after its completion.”[[31]](#footnote-31) He continued to reveal that Norconsult was partially owned by Statkraft, but even this conflict of interests did not prevent the ADB from using this report to justify implementation of the project.

The notable feature about this address of condemnation regarding the largely ignored environmental and social impacts of the Theun Hinboun Hydropower Project was the transnational nature of its support. A myriad of organizations and individuals from Australia, the Philippines, Japan, the United States, Sri Lanka, France, the Netherlands, Indonesia, Norway, and Thailand endorsed and supported the letter. Many of these endorsers represented environmental NGOs in a range of actors that was equally transnational as the funders and backers of the project. Indeed, nearly all of the countries represented were also members of Asian Development Bank. Missing from this group, however, were any actors or organizations local to Laos. Though many of these endorsing groups had operations throughout the ASEAN region, none of them purported to explicitly represent the voice of the local populations affected by the project. They do, however, cite evidence referenced earlier from interviews conducted by an independent researcher who worked with these populations. It is nonetheless difficult to distinguish the motives of Eggen and the letter’s endorsers between a general condemnation of the ADB for its “[concern] with protecting the interests of the private investors rather than those of affected Lao citizens” and a more specific condemnation of the ADB on behalf of this same population.[[32]](#footnote-32)

This criticism of the Asian Development Bank was not unique to the Theun Hinboun Hydropower Project, but a long history of criticisms of the ADB have condemned its consistent failure to address environmental concerns and the dislocation of populations. The GMS Environmental Operations Centre, the ADB’s key agency for “[providing] the GMS Working Group on the Environment with coordination and technical support to implement the Core Environment Program,” which were tasked with mitigation of environmental risks and degradation, was not created until 2005, well after the completion of the Theun Hinboun Hydropower Project and its subsequent impacts.[[33]](#footnote-33) A coordinated initiative to focus on environmental concerns was not established until after the environmental impacts of the dam project. These efforts were nonetheless the target of criticism from such groups as the United Nations Environment Program, which claimed that “the GMS still [lacked] a strong, credible body with the mandate to develop and coordinate its responses to environmental challenges.”[[34]](#footnote-34) Attempts by the ADB to address the costs of environmental degradation failed to incorporate a metric of environmental costs to more deliberately and effectively manage the environmental impacts. The externalization of costs to local populations is a manifestation of the power hierarchy that continues to emphasize the financial interests of key stakeholders over the broader societal costs imposed on local populations. The continued diminution of these broader societal costs persists because the recognition of these outcomes falls short of incorporating them into cost and benefit analyses.

The conflict over responsibility for the environmental and social costs between backers of the project and the project’s detractors reveals a striking continuity with the ideological struggle that engendered conflict in the ASEAN region in the Cold War. These groups of transnational actors were attempting to impose their respective visions of development on Laos in the same way that the hegemonic United States and Soviet Union imposed their ideological visions on Laos in the battlefield of the Cold War. Although the battlefield may have transformed into a marketplace following the end of the Cold War, the ideological debates that impacted development in the region remained, and much of the force behind these debates was fueled by new transnational groups like the Asian Development Bank. The commercial geography replaced the geopolitical geography as the predominant setting of this ideological debate and prevailing development paradigm.

The Theun Hinboun Hydropower Project provided a backdrop for the struggle of this debate. The direction of development of the Lao and regional economy were at stake in this debate that forced interactions between groups representing diverse interests. The backers of the project represented the predominant interests of capital that characterized the post-Cold War development paradigm. The Asian Development Bank, representative of these interests, imposed their vision of development of Laos and the region more broadly that featured the role of financial and capital investment. The ADB facilitated the commercialization of Laos’s river resources and defined the success of the project by its relatively narrow financial and economic returns. These financial benefits, however, obscured the externalized environmental and social costs that emerged in response to the construction of the dam. An equally transnational group of actors and organizations condemned the ADB’s handling of the preliminary assessments and mitigation mechanisms and actively protested these externalized costs. They opposed the intervention of private capital and transnational investors that did not account for the local population’s relationship with the river, and the adverse consequences that these groups of people were induced to cope with despite a relative lack of knowledge of the project and consultation throughout implementation of the project. The intersection of these interests and the power of the project backers to implement their development strategy displayed the subjugation of local interests in pursuit of market-oriented development by representatives of the interests of capital.

This narrative demonstrated the dynamics of power politics and competing visions of top-down and bottom-up development paradigms. The Asian Development Bank derived its power from a concentration of technical and managerial capacity and its accumulation of capital, which both feature prominently in the broader post-Cold War development paradigm. Their approach to development and poverty alleviation favored technical and large-scale interventions that engaged national actors like the governments of Laos and Thailand. The local populations that were adversely impacted by the Theun Hinboun Hydropower Project were largely missing from these discussions. Their lives were disrupted, and their bottom-up vision of development subjugated by the overwhelming power of capital channeled through the ADB. It remains ironic that functioning local markets collapsed in favor of a state-driven energy market intended to power a neighboring country. This irony serves to reveal the inferior position of these populations who were not sufficiently engaged in the planning and implementation process. The technical language of costs and benefits espoused by the ADB externalized the costs to these same populations and allowed the ADB to narrowly define their own calculations of costs and benefits.

The Theun-Hinboun Hydropower Project was not singular in the history of massive industrial hydropower projects led by a concentrated class of elites that demonstrated a capacity to impose severe human and environmental costs. Large-scale technical interventions in water systems have a historical pattern of engendering power struggles and contradictions of key stakeholders and local populations. Mitchell examines one other context that demonstrates what outcomes are produced when capitalists, bureaucrats, and big NGOs disrupt local relationships with water.[[35]](#footnote-35) The construction of the Aswan Dam and its associated water system on the Nile River in Egypt created an environment in 1942 in which mosquitoes carrying gambiae malaria from the southern border region with Sudan were transported to the North and infected local populations already ravaged by war and harmful synthetic chemical treatments. This environment and its outcomes reflected and reinforced the socio-political relationships that defined and constituted society. A concentrated techno-political and capitalist elite acting in their own interests determined the technical interventions to the water system. The host of unintended consequences produced from these top-down decisions disproportionately relegated costs and adverse effects to local populations that remained relatively excluded from the decision-making process.

Both the Theun Hinboun Hydropower Project and the Egypt case study analyzed by Mitchell demonstrated that large-scale industrial interventions into water systems are “thick with politics.”[[36]](#footnote-36) In other words, they are manifestations of social and power relations present within the society they emerge from. Not only do they emerge from a particular context, but they help maintain and uphold particular conceptions of values and social orders. Considered in such a framework, the Theun Hinboun Hydropower project was both a product of the society it emerged from, and it actively constituted that society in return. The presence of national and transnational actors eager to get a piece of the market reforms and economic development prospects of Southeast Asia after the Cold War shaped the implementation of the project that prioritized the interests of these elite classes. This top-down intervention imposed costs on the local populations that were excluded from the decision-making process and altered their localized relationship with the river. While the elite class of capitalists and bureaucrats conducted assessments of their own relative financial benefits, local populations were compelled to reestablish their relationships with the river under the new imposed paradigm.

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