Nam Theun 2 Trip Report and Project Update

May 2007





Linking Human Rights and Environmental Protection

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TABLE OF CONTENTS

Executive Summary2
Introduction
Xe Bang Fai Downstream Program11
Biomass Clearance and Water Quality17
Project Lands Compensation19
Nakai Plateau Resettlement23
Conclusion29
Endnotes
Appendix 1: Trip Itinerary32
Appendix 2: Violations of the Concession Agreement, World Bank and ADB Policies

Abbreviations

ADB	Asian Development Bank	NT2	Nam Theun 2
EAMP	Environmental Assessment and	NTPC	Nam Theun 2 Power Company
	Management Plan	PoE	Panel of Experts
GoL	Government of Laos	RAP	Resettlement Action Plan
IRN	International Rivers Network	RMU	Resettlement Management Unit
MAF	Ministry of Agriculture and Forestry	SDP	Social Development Plan
NGO	Non-governmental organization	VFA	Village Forestry Association



Waiting for new houses in Sop Hia resettlement village. Photo by Shannon Lawrence, IRN.

EXECUTIVE SUMMARY

n International Rivers Network (IRN) staff member visited the Nam Theun 2 hydropower project (NT2) in early March 2007 to gather first-hand information regarding NT2's implementation. This report summarizes information gathered on that visit from interviews with villagers and representatives of the Government of Laos, (GoL), the Nam Theun 2 Power Company (NTPC), the Asian Development Bank (ADB) and the World Bank. Information from the field was verified and supplemented by a review of recent project documents.

Nam Theun 2 is another two-speed large infrastructure project, where construction proceeds apace while social and environmental programs lag behind. Livelihood restora-

The World Bank's and the ADB's "model" hydropower project is dangerously close to becoming a replica of past dam mistakes.

tion programs for resettled villagers on the Nakai Plateau, villagers along the Xe Bang Fai, and villages affected by downstream channel construction are all at risk. Many NT2-affected villagers with whom IRN spoke were increasingly open in expressing their frustrations and concerns about the future. The NT2 Panel of Experts (PoE) warns in its February 2007 report:

... the overall emphasis in project planning and implementation continues, as in

other large dam projects, to be on the relatively simple functions of civil works, physical relocation and building social infrastructure. A better balance in timing and more emphasis on livelihood development are essential now (PoE 11th Report, p. 9). The World Bank's and the ADB's "model" hydropower project is dangerously close to becoming a replica of past dam mistakes. Despite the stacks of NT2 studies and the multitude of assurances, the gaps in planning, budget and political will surrounding NT2 are now evident. Prior to project approval, NGOs warned that the agricultural plans for the Nakai Plateau were inappropriate, the downstream program plans were inadequate, and the community forestry component was unrealistic. Regrettably, it seems these warnings have come true.

In belated recognition of the plans' shortcomings, some are being re-drafted midstream, while others—such as irrigation for downstream channel villagers—appear to have been abandoned, as time runs short before reservoir filling and power generation begin. NTPC's Social and Environmental Division seems to be understaffed, overworked, and unequipped with the resources and high-level buy-in necessary to address NT2's massive impacts on affected villagers.

Two years before power production begins, there have already been numerous violations of NT2's legal framework, including the Concession Agreement and World Bank and ADB policies. The failure of NTPC, the GoL, the World Bank, the ADB, and other project backers to take action on these issues calls into question the accountability of all parties and the enforceability of these agreements.

Urgent action is required if the GoL, NTPC, and the international financial institutions are to meet their commitments to more than 100,000 affected Laotians, and to their shareholders.

Summary of Major Concerns

Livelihood restoration programs are in jeopardy in all project-affected areas. In their latest report, the Panel of Experts states that income targets for resettlers on the Nakai Plateau are unlikely to be met. Livelihood restoration programs for Project Lands' and Xe Bang Fai villagers have yet to effectively begin and face significant time and budget constraints.

Both the GoL and NTPC are backtracking on commitments they made at project approval. The violations include failing to provide irrigation for downstream channel villagers, ensuring biomass clearance of the reservoir, guaranteeing Nakai villagers' rights to their forest resources, and protecting the Nakai-Nam Theun National Protected Area from logging and mining.¹

Neither the GoL nor NTPC has committed to clear biomass from the reservoir area before it is flooded, despite the Environmental Assessment and Management Plan assertion that "Vegetation will be removed before flooding the reservoir..."² Time is running out, with only one dry season left to take action. Leaving biomass to decompose in the reservoir will likely lead to fish kills in both the reservoir area and downstream, and result in water that is unsuitable for domestic use and irrigation in the downstream channel and along the Xe Bang Fai. Biomass clearance has major implications for the success of mitigation and livelihood restoration programs in all project-affected areas.

NTPC has failed to disclose resettlement plans in violation of World Bank and Asian Development Bank policies, as well as other key social and environmental documents, such as wildlife surveys and management plans. IRN has repeatedly requested these documents from NTPC, the World Bank and the ADB.

Detailed Concerns and Recommendations

Xe Bang Fai Downstream Program

- Implementation of NTPC's Downstream Livelihood and Asset Restoration Pilot Program has only recently been initiated in 21 villages, which constitutes less than 10% of the downstream villages that will be affected when NT2 operations begin in 2009.
- The Downstream Program plan has not been disclosed to the public, despite World Bank and ADB policy requirements.
- NTPC says it is planning for the worst-case scenario along the Xe Bang Fai, which means 85% fish losses, increased high frequency floods, erosion, major water quality problems, and transportation difficulties for downstream villages. However, the Downstream Program budget is only \$16 million, of which more than \$1 million will be spent on consultants.³ Using NTPC's figure of 75,000 affected people (versus the 120,000 affected people identified by independent experts⁴), only \$200 per person is available to compensate and mitigate for all these long-term livelihood impacts. Villagers told IRN that their main priorities were flood protection and irrigation, but NTPC has reportedly told villagers there is not enough money for these measures.
- The primary livelihood restoration pilot projects—livestock raising, fish ponds and cash crops using a microcredit village savings fund, as well as water and sanitation improvements—are inadequate to deal with the scale of impacts that villagers will face. Some people were having trouble selling their vegetables, the pigs they purchased had died, and they couldn't pay back their loans to the village savings fund. The reliance on the micro-credit scheme to deliver compensation creates a cycle of debt if projects fail.

Recommendations:

- NTPC should commit to develop and implement an interim compensation scheme to address the impacts of NT2 operations on downstream villagers until livelihood restoration programs yield sustainable results. Additional funding will be required, as the \$16 million budget is likely to be inadequate to deal with the scale of anticipated downstream impacts.
- The GoL, World Bank and ADB should work with villagers and donor partners to develop an integrated rural development plan for the Xe Bang Fai region.
- NTPC, the GoL, the World Bank and the ADB should ensure disclosure of: 1) the Downstream Livelihood and Asset Restoration Program Phase 1 in its entirety; 2) marketing surveys for the Xe Bang Fai; 3) biomass clearance plans and for the Nakai Plateau; and 4) hydraulics and water quality studies for the downstream areas.

Biomass Clearance and Water Quality

- Failure to clear biomass from the reservoir area will result in water quality problems and fish kills in the reservoir and downstream. The Concession Agreement requires that a biomass survey be conducted and used to propose means for "maximising removal of biomass in high biomass areas of the Nakai Reservoir. The priority shall be to clear the vegetation in areas which will be permanently flooded" (Schedule 4, Part 2, Section 3a). The Concession Agreement also requires that "... water in the Downstream Channel must at least be suitable for irrigation purposes" (Schedule 4, Part 2, Section 9.1f).
- Despite these commitments, approved by the World Bank, the ADB and NT2's other funders, neither the GoL nor

Recommendations:

- NTPC and the GoL should commit to clear biomass from at least all permanently flooded areas of the NT2 reservoir.
- NTPC and the GoL should implement an independently reviewed clearance plan and impoundment strategy to minimize downstream water quality problems in the first years of NT2 operations.

NTPC have plans to remove or ensure the maximum removal of biomass from the reservoir. NTPC is only now conducting a study on water quality optimization during reservoir impoundment and says that "biomass clearance may be part of the answer."

Project (Construction) Lands Compensation

- Compensation payments to Project Lands villagers have been unequal and insufficient, failing to compensate for the full production value of land, fisheries losses and water quality problems caused by project construction. Many villagers do not understand what they are entitled to, why they have received what they have, and if they will be receiving more in the future. Compensation payments started a year after villagers' land was taken and impacts were first felt, in violation of the Concession Agreement and World Bank policy.
- Resettlement Action Plans for Project Lands have not been disclosed, nearly two years after villagers lost land and assets, in violation of World Bank and ADB policies.

Recommendations:

- The Independent Monitoring Agency for the Resettlement Management Unit (RMU) should urgently undertake a comprehensive review of Project Lands compensation and mitigation measures and publicly disclose its findings.
- NTPC and the GoL should: 1) urgently find comparable replacement land for Project Lands villagers, and 2) detail the livelihood restoration options that will replace irrigation for significantly affected Project Lands villagers.

The livelihood restoration program for the downstream channel area has come undone. It is unclear if replacement land is available for villagers who lost more than 10% of their incomes as a result of NT2, despite the requirements of the Concession Agreement and World Bank policy. Similarly, using the downstream channel to provide irrigation for affected villagers, as promised in the 2005 NT2 Social Development Plan, no longer seems to be a viable option.

Recommendations, continued

NTPC, the GoL, the World Bank and the ADB should ensure immediate disclosure of the Resettlement Action Plans (RAPs) for Project Lands.⁵



Villagers along the upper Xe Bang Fai. Photo by Henrik Lindholm, SwedWatch.

Nakai Plateau Resettlement

- Livelihood programs for Nakai Plateau resettlers are being re-written and/or coming undone halfway through the resettlement process. Agriculture plans in the 2005 NT2 Social Development Plan are considered unworkable, so NTPC is experimenting with new approaches. It is now clear that there is not enough land for all of villagers' buffalo and cattle, and families with large numbers will have to sell some of their buffalo.
- The Village Forestry Association (VFA) is in jeopardy. The 2005 NT2 Social Development Plan assigns responsibility to the VFA for harvesting, selling and processing timber from the resettlement area (such as housing plots and agricultural land). The VFA is now being run by a former Ministry of Agriculture and Forestry (MAF) official and several VFA positions have apparently been given to district government representatives. This appears to have resulted in the government agencies taking responsibility for harvesting the timber. Revenues from timber harvesting on resettlement lands have reportedly not gone into VFA accounts. Illegal logging in the community forest area has reportedly removed all the big, valuable trees that were supposed to provide each resettled family with dividend payments in the future.
- Resettled villagers on the Nakai Plateau are still in temporary houses on their permanent sites. Villagers' houses are falling apart and some people report water shortages. Many villagers with whom IRN spoke are increasingly concerned about their future and about finding food "after the flood". Some people in the demonstration village reported selling buffalo to buy rice, as they are no longer receiving rice support from NTPC.

Recommendations:

- NTPC and the GoL should address resettled villagers' concerns by ensuring adequate food support until livelihood programs prove sustainable, fixing temporary houses, repairing or developing water supply systems, paying villagers for land clearance and spraying roads.
- NTPC and the GoL should ensure that the VFA has received all the revenue it is due from timber sales in the Resettlement Area, and that illegal logging in the community forest area is stopped immediately.
- NTPC, the GoL, the World Bank and the ADB should ensure disclosure of: 1) studies and plans regarding the new agriculture approach; 2) marketing surveys; 3) the buffalo reduction strategy; 4) wetlands, terrestrial, elephant and fish surveys and management programs for the Nakai Plateau and other project areas; 5) the community forestry plan; 6) the salvage logging plan and 7) the forthcoming reservoir impoundment strategy, upon its completion.



Nam Theun 2 dam site March 2007. Photo by Shannon Lawrence, IRN.

INTRODUCTION

About Nam Theun 2

am Theun 2 (NT2) is a US\$1.45 billion hydropower project currently under construction in central Laos. When it begins operations in December 2009, NT2 will export most of its 1,070 MW of power to Thailand. The project will also forcibly displace more than 6,200 indigenous peoples to make way for its 450-square kilometer reservoir, and impact more than 120,000 Lao farmers and fishers downstream.

NT2 is a trans-basin diversion which means it will dramatically alter not one, but two river basins. A 39meter high dam will block the Nam Theun river to form the reservoir. Once the reservoir has been filled, water will be directed down a 350-meter drop to the power station, before being transferred to the Xe Bang Fai. Both the Nam Theun and the Xe Bang Fai are tributaries of the Mekong River.

In 2005, NT2 and its project developers, the Nam Theun 2 Power Company (NTPC), which includes Electricité de France International, the Electricity Generating Company of Thailand, Ital-Thai Development and the Lao government, got the go ahead in the form of loans and guarantees from the World Bank and the Asian Development Bank (ADB).

The World Bank and the ADB asserted that the project would reduce poverty in Laos. They vowed not only that the social and environmental risks could be managed, but that NT2 would jumpstart the small country's development. Following the World Bank and ADB's endorsement, other public and private financial support was offered from the European Investment Bank, the Nordic investment Bank, COFACE, and other export credit agencies and private banks. Nam Theun 2 is governed by a variety of legal documents that outline the obligations of NTPC and the GoL. The NT2 legal framework includes the Concession Agreement between the Government of Laos (GoL) and NTPC, and loan agreements with project financiers, such as the World Bank and the ADB. The World Bank and ADB loan and guarantee agreements with the GoL and NTPC in turn require compliance with these institutions' own policies. Essentially, these legal agreements constitute the promises made to Lao villagers regarding compensation and mitigation measures, and the allocation of responsibility amongst NTPC and the GoL.

About IRN

International Rivers Network (IRN) is a non-governmental organization that protects rivers and defends the rights of communities that depend on them. IRN has been monitoring the Nam Theun 2 hydropower project and other dams in Laos for over a decade, opposing destructive projects and advocating for better compensation and mitigation measures for affected communities. IRN staff members visit the Nam Theun 2 project site regularly.

IRN was opposed to World Bank and ADB support for Nam Theun 2 because: a) the dam does not meet World Commission on Dams guidelines; b) NT2's risks to affected communities far outweigh its potential benefits; and c) dams have not contributed to poverty reduction in Laos. IRN continues to monitor NT2's development to ensure that commitments made by NTPC, the GoL and the international financial institutions to affected communities and on the environment are met.

IRN's March 2007 Visit

An IRN staff member visited the NT2 project site in early March 2007, accompanied by a colleague from a Swedish NGO and an interpreter. The purpose of the trip was to gather first-hand information regarding the implementation of the NT2 project. Over a period of eight days, the team traveled to the Nakai Plateau, the downstream channel area of Gnommalat District, and the Xe Bang Fai area to speak with villagers. Following the field visit, IRN met with representatives of the GoL, NTPC, the ADB, the World Bank and nongovernmental organizations (NGOs) in Vientiane.

Although the project area is open to the public, IRN informed NTPC and the GoL of its intentions to visit the area before the trip. The team was not accompanied by GoL or NTPC representatives.

The information in this report was primarily collected through field interviews with local people and formal meeting discussions. To obtain as comprehensive an understanding of the situation as possible, IRN tried to visit many villages and to interview more than one family representative in a given village. Information from the field was verified and supplemented by a review of recent project documents. The responses from NTPC, the World Bank and the ADB highlighted in the trip report were obtained during meetings on the Nakai Plateau and in Vientiane the week of March 5, 2007, as well as from subsequent email communication with NTPC.

The trip report does not provide a comprehensive overview of the dam nor of its current or future impacts across *all* project areas. IRN primarily seeks to monitor and report on NT2' s environmental and social impacts and the implementation of mitigation and compensation programs. The trip report is divided into sections that correspond to the three main impact areas of the Nam Theun 2 project: the Xe Bang Fai downstream area, project construction lands, and the Nakai Plateau resettlement area. A fourth section addresses biomass clearance and water quality implications, which is a critical cross-cutting issue. The trip itinerary and a selected list of violations of NT2's Concession Agreement and World Bank and ADB policies are included as appendices to the report.

NAM THEUN 2: At a Glance

LOCATION:

Central Laos, primarily in Khammouane province

STRUCTURE:

- 39 meter high dam on the Nam Theun
- 450 square kilometer reservoir on the Nakai Plateau
- After passing through a powerhouse below the Nakai Plateau, water from the reservoir is diverted to the Xe Bang Fai via a 27 kilometer downstream channel

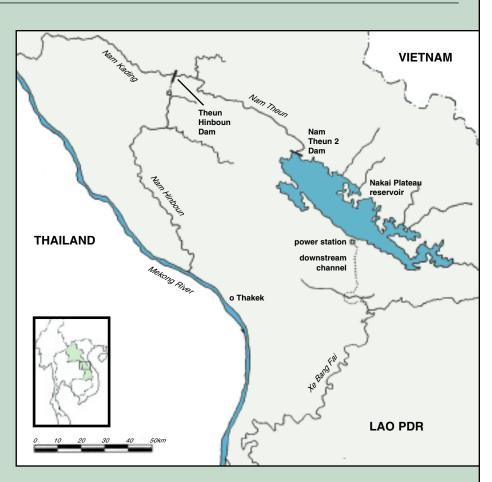
OUTPUT:

- 1070 MW of power, more than 90% exported to Thailand
- Power production scheduled to begin in December 2009

SPONSORS:

Nam Theun 2 Power Company (NTPC): Electricité de France International (35%), the Electricity Generating Company of Thailand (25%), Lao Holding State Enterprise (25%) and Ital-Thai Development (15%)

HEAD CONSTRUCTION CONTRACTOR: Electricité de France



MAIN SOCIAL AND ENVIRONMENTAL IMPACTS: > 6,200 indigenous peoples forcibly resettled from reservoir area on Nakai Plateau; elephant and other wildlife and wetlands habitat flooded

> 120,000 downstream villagers affected by increased water flows in Xe Bang Fai, and dramatically decreased flows in Nam Theun; major fisheries and aquatic resources losses, erosion, flooding, sedimentation along the Xe Bang Fai

> 2,000 households affected by NT2 construction activities, losing land, assets, access to resources; water quality impacts, erosion, sedimentation, logging in construction areas



Fish from the Xe Bang Fai, caught by a hinterlands' villager. Photo by Shannon Lawrence, IRN.

XE BANG FAI DOWNSTREAM PROGRAM

The Xe Bang Fai river will receive large amounts of additional water from the Nakai Plateau reservoir after it passes through the power station and the downstream channel.⁶ More than 120,000 people⁷ in the Xe Bang Fai area will be negatively impacted by the Nam Theun 2 project. NTPC says⁸ it is planning for the worst-case scenario along the Xe Bang Fai, which means 85% fish losses, increased high frequency floods in the Xe Bang Fai and its tributaries, erosion of riverbanks and loss of riverbank gardens, major water quality problems, and transportation difficulties for downstream villages.

IRN visited 10 villages in the lower, middle and upper Xe Bang Fai, six of which are part of NTPC's Downstream Livelihood and Asset Restoration pilot program. As detailed in the 2001 independent study, *The People and their River*, villagers' lives are intimately intertwined with the Xe Bang Fai and its wet and dry season cycles.

Most villagers with whom IRN spoke said that Xe Bang Fai fish and aquatic products are a critical source of food and income, despite the fact that fish catches had declined in recent years. A woman in Ban Boueng Xe explained, "We depend very much on fish. We go to paddy fields during the day and come back to fish every evening." In Vernsananh, villagers said they depend mostly on fish, snails, small crabs and vegetables from the river as their main source of food and income.

Villagers have learned to anticipate the Xe Bang Fai's flood cycles, moving their small livestock and other assets to higher ground when possible. But Ban Dong Ka Sinh villagers said their buffalo still die after eating the grass that has been submerged under floodwaters.

The main flood-related concern of Xe Bang Fai villagers is their wet season paddy. Villagers told IRN they lose most or all of their rice crop every few years when it is submerged by floodwaters before it can be harvested.

The Xe Bang Fai and its tributaries are also an important means of transportation and major source of water supply. A villager in Ban Hat Xaisung Neua said the company told them that after the dam is built there will be more flooding and that travel along the river will be different. "But the company told us not to worry. They promised bank protection and fish ponds for us. Sometimes we are worried and sometimes we are not because the company told us not to be scared."

Downstream program shortcomings

In an attempt to mitigate NT2's impacts and compensate Xe Bang Fai villagers, NTPC has developed a Downstream Livelihood and Asset Restoration Program. The Downstream Program report was finalized in 2006, although NTPC says it is still awaiting GoL endorsement.

In violation of World Bank and ADB involuntary resettlement and information disclosure policies,¹⁰ the Downstream Program report has not been publicly disclosed.

IRN is concerned that the \$16 million Downstream Program budget and the proposed compensation and mitigation measures are inadequate to deal with the scale and severity of NT2's downstream impacts. Additionally, the short time remaining before dam operation means that villagers are likely to experience a significant drop in their incomes and major impacts before new livelihood programs yield any results.

According to NTPC, the Downstream Program focuses on micro-credit funds to support agriculture, aquaculture and livestock projects, water and sanitation improvements, and mini-polder flood protection. Pilot livelihood restoration projects were initiated in a downstream demonstration village, Boeung Xe, in 2005. NTPC is now implementing the program in 20 additional pilot villages in the upper, lower and middle Xe Bang Fai.

Concerns of Xe Bang Fai villagers

- Villagers would like flood protection, improved irrigation and a drinking water system, but the company has reportedly said there is not enough money to provide these
- Pig farming failed last year in some villages and villagers still have to pay loans back to village savings funds
- Village savings fund is not accessible to the poorest villagers and the interest rate is too high
- Some people were not able to pay back loans and have had to sell their assets
- Some villagers do not understand how decisions are taken on what projects the village savings fund will support
- There is a lack of easily accessible markets for their vegetables/fruits
- Prices decline when more people are growing and selling the same vegetables/fruits

Benefits noted by Xe Bang Fai villagers

- NTPC will provide 2 million to 2.5 million kip (US\$200 to US\$250) per family to the village savings fund
- NTPC will develop a sanitation program
- NTPC provides technical assistance for aquaculture, pig raising, agriculture and weaving
- NTPC initially provides fish fry for fish pond and fertilizer for growing corn and other vegetables
- NTPC has promised some flood protection

Detailed notes from village visits are available at: http://www.irn.org/programs/mekong/namtheun.html.

Reliance on village savings funds

In the pilot villages, NTPC has deposited between 2 and 2.5 million kip (approximately US\$200 to \$250) per household into village savings funds to use for various livelihood projects, including pig farming, watermelon and corn cultivation, and fish ponds. Families are expected to contribute 5,000 kip per month to be members. Villagers did not know how the 2 million kip figure was determined, and NTPC has not yet clarified why that amount was chosen and if more compensation will be forthcoming.

NTPC says it is "paying the initial funds, but [it is] not telling villagers what to do" with those funds. NTPC is providing villagers with technical assistance and certain inputs, such as fertilizer and fish seed, for some of the projects mentioned above. According to NTPC, the community analyzes the proposals and decides for itself which projects to support with loans from the village savings fund.

In Mahaxai Tai and Boueng Xe, villagers expressed concerns about the rate of interest charged for village savings fund loans (between 1 and 3% per month). NTPC says the rate is very low compared to local lenders, but villagers in Mahaxai Tai said they had difficulty making the interest payments and paying back the loans in six months, as required. When projects failed, villagers complained that they still had to pay the money back, and some said they were unable to do so. In Mahaxai Tai, it was reported that certain villagers had to sell land or their motorbike to repay the loans. Mahaxai Tai villagers also objected to the requirement that collateral be provided in order to receive loans from the village savings fund, which excludes the participation of the poorest villagers. People in other villages reported general confusion about how the fund works, which prevented some of them from becoming members.

It is not clear how the terms of the village savings funds are being set and by whom (the communities and/or NTPC). However, the current NTPC contribution to village savings fund is inadequate to compensate for the long-term loss of fisheries, assets and other impacts from Nam Theun 2. Furthermore, the reliance on a



Villager along the upper Xe Bang Fai showing last year's flood level. Photo by Shannon Lawrence, IRN.

micro-credit scheme to deliver compensation creates a cycle of debt if projects fail or if re-payment terms are too demanding.

Villagers bearing risk

In most of the pilot villages, livelihood projects supported by village savings fund loans were only just getting underway and had yet to deliver results. But some people in the Boeung Xe demonstration village, who have had the most experience with these schemes, expressed frustration with the agriculture and livestock projects. For example, families bought approximately two to three pigs each to raise, but most of the pigs died within a couple of months. Now the families have to pay back money for the pigs and find this very difficult to manage. As one villager explained, "Maybe it would have worked if we had done like the company told us, but we don't have the time because we are working in the fields all day."

NTPC's \$16 million Downstream Program budget leaves only \$200 per affected person to compensate for long-term fisheries losses, flooding, and other impacts.

One Boueng Xe watermelon farmer complained that the price had dropped this year now that so many people were growing watermelon. She also had trouble finding a market for the watermelon, and getting her harvest there before it rotted. As a result, she was unable to repay the loan to the village savings fund.

Aquaculture ponds were also starting in some villages. While some villagers were enthusiastic about fish ponds, there was also confusion amongst villagers about how to culture fish. At present, villagers use natural fish ponds in which fish are trapped from the Xe Bang Fai and harvested at the end of the wet season. Villagers have little to no experience with NTPC's suggested aquaculture activities which require inputs such as fish seed and fertilizer.

Mahaxai Tai villagers said the company told them they could develop a fish pond using a loan from the village savings fund. Villagers said they did not like the idea because now they get fish for free from the river. NTPC said they would provide fish seed, but the villagers would have to purchase the fish feed for one million kip. NTPC promised to buy the fish from villagers in six months. The project has just started, so villagers still do not know if it will work.

One woman in Ban Boueng Xe says she would like to ask the company, "What compensation will you give us for flooding if we stay in the village?" She said villagers have to buy seed, fertilizer and everything [using the village savings funds, which they have to pay back] and that nothing is given to them by NTPC.

NTPC notes, "Some programs work and others don't. This is largely trial and error which is why we have a range of options. Results so far indicate that aquaculture is promising, horticulture is promising, but livestock can be problematic." Aquaculture is a new activity for most Xe Bang Fai villages, and NTPC has not disclosed any information about how productive and sustainable fish ponds are likely to be. NTPC has also failed to identify mar-

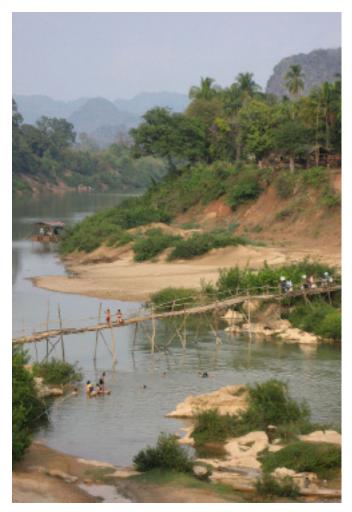
kets for the fruit and vegetables that Xe Bang Fai villagers would grow and sell as part of the Downstream Program. Furthermore, as more villages begin growing and supplying the same markets with the same produce, prices will continue to fall, hurting the producers the program is designed to help. NTPC has not explained how it plans to address this problem.

Villagers request flood protection and irrigation

In almost every Xe Bang Fai village that IRN visited, people expressed their strong desire for flood protection and irrigation systems as the primary mitigation and compensation measure. According to people in at least three villages, the company said it did not have the budget to support the flood protection or irrigation systems villagers were requesting.

Some villagers reported that the company had promised to build mini-polders or flood protection dikes, and villagers were waiting for that work to begin. NTPC explained that three mini-polders covering five villages are currently under construction. The company hopes to have them at least partially constructed before the wet season to see how they work.

A major selling point for the NT2 project was that higher water levels in the Xe Bang Fai would improve irrigation potential and boost dry-season rice production. The 2005 NT2 Social Development Plan notes: "The NT2 project will improve the potential and economics of irrigated agriculture development through the provision of a reliable water source in the Xe Bang Fai during the dry season" (SDP, Volume 3, p. 9). NTPC now says that large-scale irrigation is not being considered for Xe Bang Fai villagers because of cost issues, arguing that villages will pay more to cover electricity costs and inputs than they would earn from a dry-season rice crop, as NGOs pointed out in 2005.



The Xe Bang Fai near Mahaxai Tai. Photo by Henrik Lindholm, SwedWatch.

Instead, NTPC is proposing small-scale irrigation tube wells shared by groups of families, presumably for dryseason vegetable production. The company plans to install approximately 175 to 200 tube wells by the end of 2009 in all riparian villages and some hinterlands villages. As the Downstream Program plan has not been disclosed, it is unclear how many families will share these systems, how they will be managed, and if the number of tube wells is sufficient. NTPC has not provided any information regarding how the water would be pumped from the wells to the farmers' fields, and whether or not this would entail additional electricity costs.

NTPC says that there are opportunities for a donorfunded development scheme to consider flood protection and irrigation systems for Xe Bang Fai villages. The GoL has reportedly expressed an interest in a broader Xe Bang Fai program and donors such as the World Bank and the ADB are evaluating various options. The question remains, however, how much flood protection and livelihood restoration should be NTPC's direct responsibility to compensate for and mitigate NT2's impacts.

Time running short for downstream program

The Downstream Livelihood and Asset Restoration Program for the Xe Bang Fai is still being piloted in less than 10% of the affected villages with two years left until commercial operations begin, with all the fisheries losses, flooding, erosion, and water quality problems that will accompany power production. NTPC's aim is to scale up the programs to all 221 affected villages before impacts from Nam Theun 2 are felt in 2008 or 2009.¹¹

Although NTPC has not disclosed an implementation plan for the Downstream Program, the time remaining before NT2 operation seems to be extremely short to learn from the pilot projects, fix problems or introduce new approaches, and replicate initiatives in more than 200 villages. As the Panel of Experts notes in its February 2007 report, "Where there are delays [in downstream program implementation], an undesirable gap will emerge between impacts and mitigation/compensation. Such delays seem likely at this point" (PoE, 11th Report, p. 21).

The uptake of new and untested livelihood systems to replace traditional fishing and farming activities is a long-term venture. As noted above, there are a number of shortcomings with the livelihood projects and more time should have been allocated to learn from these pilots before scaling them up across hundreds of villages. NTPC should provide interim compensation to downstream villagers until livelihood projects restore their incomes to pre-NT2 levels.

Inadequate budget to mitigate and compensate for downstream impacts

NTPC has committed to providing \$16 million to implement the downstream program over eight years



Boys fishing in the Xe Bang Fai. Photo by Shannon Lawrence, IRN.

(2005-2014). It is not clear how that amount was determined. According to the Panel of Experts¹¹, more than \$1 million of the \$16 million will be spent on consultants. Using NTPC's figure of 75,000 affected people (versus the 120,000 affected people identified by independent experts¹²), that leaves only **\$200 per person** for compensation and mitigation.

Considering the scale of Nam Theun 2's projected impacts on the Xe Bang Fai region and the number of affected villages, NTPC's Downstream Program budget seems to be entirely inadequate to compensate more than 120,000 villagers for a lifetime loss of the fisheries they depend on, let alone to provide livelihood alternatives and flood and erosion protection. Experience at the nearby Theun-Hinboun Hydropower Project has proven that fisheries declines, erosion, sedimentation, and increased flooding cause major income losses for villagers that multiply sometimes exponentially year after year.¹³

Recommendations:

- Because NTPC's livelihood programs are not likely to be successful for at least several years, NTPC must provide interim compensation to ensure that villagers are not left stranded once power production starts and their incomes plummet. NTPC should commit to develop and implement an interim compensation scheme to address the impacts of NT2 operations on downstream villagers until livelihood restoration programs yield sustainable results. Additional funding will be required, as the \$16 million budget is likely to be inadequate to deal with the scale of anticipated downstream impacts.
- The GoL, the World Bank and the ADB should work with villagers and donor partners to develop an integrated rural development plan for the Xe Bang Fai region.
- NTPC, the GoL, the World Bank and the ADB should ensure disclosure of: 1) the Downstream Livelihood and Asset Restoration Program Phase 1 in its entirety; 2) marketing surveys for the Xe Bang Fai; 3) biomass clearance plans and for the Nakai Plateau; and 4) hydraulics and water quality studies for the downstream areas.



Villagers near the Xe Bang Fai. Photo by Shannon Lawrence, IRN.

BIOMASS CLEARANCE AND WATER QUALITY

ne of the major threats to downstream villages once NT2 starts operation is the quality of water that will pass from the massive reservoir down through the power station, into the downstream channel and then to the Xe Bang Fai, before eventually reaching the Mekong. Experience with tropical reservoirs, including some in Laos and Thailand, indicates that biomass should be removed before the area is flooded to prevent the rotting vegetation from polluting the stored water. Without taking this preventative step, reservoir waters become toxic and turn rivers into sewers downstream. The failure to address this issue will likely lead to fish kills in both the reservoir and downstream rivers, and result in water that is unsuitable for drinking and irrigation in the downstream channel and along the Xe Bang Fai.¹⁵

As IRN noted in our previous trip report, the NT2 Environmental Assessment and Management Plan states that:

To help improve water quality in the Nakai Reservoir in the initial years after inundation, NTPC will encourage the removal of biomass from the inundation area prior to flooding through firewood collection and the salvage of timber (EAMP, Chapter 3, p. 92). The EAMP goes on to state:

Vegetation will be removed before flooding the reservoir... The priority shall be to clear the vegetation in areas which will be permanently flooded. The results of the ongoing biomass survey of the inundation area will be used as a means for maximizing removal in areas of high biomass (EAMP, Chapter 3, p. 107). The Concession Agreement signed by NTPC and the GoL requires that a biomass survey be conducted and used to propose means for "maximising removal of biomass in high biomass areas of the Nakai Reservoir. The priority shall be to clear the vegetation in areas which will be permanently flooded" (Schedule 4, Part 2, Section 3a). The Concession Agreement also requires that "... water in the Downstream Channel must at least be suitable for irrigation purposes" (Schedule 4, Part 2, Section 9.1f).

Despite these commitments, approved by the World Bank, the ADB and NT2's other

Failure to clear biomass will cause water quality problems downstream.

funders, neither the GoL nor NTPC has plans to remove or ensure the maximum removal of biomass from the reservoir. NTPC says it is conducting a study on water quality optimization during reservoir impoundment and that "biomass clearance may be part of the answer." According to NTPC, it has no obligation to clear biomass except where it may impact its programs.

There is one dry season remaining before reservoir impoundment and it is unclear what options are left for maximizing biomass clearance from such a large area in such a short period of time. The time for studies and debate is over, and action must be taken urgently to avoid downstream disaster.

Recommendations:

- NTPC and the GoL should commit to clear biomass from at least all permanently flooded areas of the NT2 reservoir.
- NTPC and the GoL should implement an independently reviewed clearance plan and impoundment strategy to minimize downstream water quality problems in the first years of NT2 operations.



NT2 downstream channel. Photo by Henrik Lindholm, SwedWatch.



Villagers along the NT2 downstream channel. Photo by Henrik Lindholm, SwedWatch.

PROJECT LANDS COMPENSATION

ore than 2,500 households are affected by Nam Theun 2 construction activities, including construction of transmission lines, roads, and project facilities. Households in Gnommalat and Mahaxai near the NT2 power station, regulating pond and downstream channel are most severely affected, where many households have lost more than 10% of their annual income as a result of land and assets taken by the project.

The downstream channel is 27-kilometers long and approximately 100-meters wide, with access roads on either side, cutting through significant areas of paddy fields and other village land. The channel also blocks

Disbursement of compensation payments began only in mid-2006, a year after NT2 construction activities started to impact villagers' land and resources. Disbursement of compensation payments began only in mid-2006, a year after NT2 construction activities started to impact villagers' land and resources, which violates the Concession Agreement and the World Bank invol-

access to the forest and villagers' gardens and rice paddies on the other side. Villagers have lost paddy land, houses, gardens, fruit trees, fisheries, irrigation water supply and other assets to varying degrees. untary resettlement policy. Two years after construction activities started to affect villagers, and also in violation of World Bank and ADB policies and the Concession Agreement, Resettlement Action Plans have still not been disclosed for Project Lands.

Primary concerns of Project Lands villagers:

- Unequal compensation for land and confusing compensation system
- Not able to find affordable replacement land
- No compensation for fish losses (Houay Lok, Nam Kathang, Nam Gnom rivers)
- Water quality problems in the Nam Kathang and Nam Gnom leading to shortage of drinking water, livestock sickness/death, and skin problems from bathing in the river for which no compensation has been provided
- Lack of access to paddy land and gardens on the opposite side of the downstream channel
- Less irrigation water as a result of a canal blocked by the project
- Delayed construction of replacement houses and promised electricity

IRN visited five Project Lands villages affected by NT2 downstream channel or transmission line construction. Detailed notes from village visits are available at: http://www.irn.org/programs/mekong/namtheun.html.

Cash compensation confusing and inadequate

Project Lands villagers expressed significant confusion about the compensation system, as they had during IRN's previous visit in June 2006. Villagers complained that compensation payments for the same lost assets varied significantly. In Tham Phuang, a villager said he received 7 million kip (US\$700) for the four hectares of paddy land he lost, whereas another villager received 97 million kip (US\$9,700) for less than four hectares. Some villagers said they were given this money to buy land in other areas, but the company had not provided assistance and they have not been able to find affordable land on their own. None of the villagers with whom IRN met understood the compensation system enough to explain what they had received and why, for how long compensation had been paid, and if more assistance was forthcoming.

Another villager in Tham Phuang mentioned 30 hardwood trees on her land for which she had not been compensated, and others complained of fish losses in the Houay Lok from construction activities. One villager stated, "Don't think about compensation for the fish. Even [the compensation] received for my land is not enough." Villagers in Sangkeo, Phone Lad Khuay and Nong Ping reported that the Nam Kathang and the Nam Gnom have been polluted and diverted, causing drinking water problems, irrigation water shortages and fish losses. They have not received compensation for these impacts. However, some village headmen (Sangkeo and Phone Lat Khuay) did report receiving compensation for common property resources, such as forest products. In Sangkeo, \$15 per person will be provided.

Villagers wanted the company to address their compensation complaints, many of which had been submitted to the Grievance Committee, and to help them find affordable replacement land. They asked for more bridges across the channel to reach their land on the other side. And they urged the company to fulfill its promises to provide drinking water systems, irrigation and electricity.

NTPC, the World Bank and the ADB note that the entitlement matrix for Project Lands villages is extremely complex and that even project and government staff have had difficulty understanding and implementing it. They insist that the situation has improved since IRN's last visit. The inclusion of Makong team members to better communicate with villagers was noted, and NTPC asserted that all cash payments had been disbursed. Nonetheless, IRN's village interviews indicate ongoing and widespread frustration with the compensation system and uncertainty about how villagers' paddy fields, gardens, fish and other income sources will be replaced in the long term. Clearly, from the villagers' perspectives, the situation has not significantly improved.

Livelihood restoration failures

NTPC and the GoL are failing to meet commitments made in the Concession Agreement and the 2005 NT2 Social Development Plan concerning replacement land and irrigation for Project Lands villagers. No alternative strategies to restore the livelihoods of significantly affected villagers have been disclosed. Once again, a major mid-stream change to project plans has left affected people in the lurch.

According to the Concession Agreement, Project Lands villagers who lose 10% or more of their productive land assets are entitled to replacement land of the same type and of at least equal productivity unless no replacement land is available. The World Bank's involuntary resettlement policy requires:

Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based.... If land is not the preferred option of the displaced person... or sufficient land is not available at a reasonable price, non-land-based options built around opportunities for employment or self-employment should be provided in addition to cash compensation for land and other assets lost. The lack of adequate land must be demonstrated and documented to the satisfaction of the Bank (World Bank Involuntary Resettlement Policy, OP 4.12).

NTPC said that "livelihood restoration is in progress, but it cannot always be land-for-land." The World Bank said that many people preferred cash and hesitated with land replacement. It is not clear if any replacement land has been provided to villagers who desire it, or what alternative livelihood restoration measures are being implemented in other cases.

The Panel of Experts reported that there was a "dearth of land and water available for conversion to [paddy field] to replace the considerable acreage absorbed by the building of the large downstream channel in particular" (PoE, 11th Report, p. 23). Land-for-land replacement is critical, especially given the importance of paddy to villagers' livelihoods. The GoL and NTPC should document and publicly report any cases in

Project Lands Compensation Entitlements

According to the Concession Agreement, Project Lands affected people are entitled to cash or replacement land for loss of residential or business land, compensation for temporary impacts during construction, compensation for fixed structures, fruit trees, timber trees, fish ponds, garden and field crops, common property structures (electricity, roads, irrigation channels, water supply, school, etc.) and common property resources (loss of forest products and firewood gathering areas and loss of fish and aquatic products). For permanent losses of land that constitute less than 10% of a person's productive assets, affected people are entitled to cash compensation for the market value of the land, the cash equivalent of seven years' gross production or the actual replacement cost of the land.

For permanent losses of agricultural land, significantly affected farmers (those who lose 10% or more of their productive land assets) are entitled to land of the same type and productivity of the land that was lost, as well as production assistance for at least two years. If no replacement land is available, NTPC must provide assistance to develop alternative nonland based livelihood activities that generate at least as much income. If villagers prefer a lump sum cash payout, the amount is based on the market value of the land, the cash equivalent of seven years' gross production or the actual replacement cost of the land. Significantly affected villagers are also entitled to disturbance allowance, transitional food assistance and transitional income assistance.



NT2 transmission lines. Photo by Shannon Lawrence, IRN.

which they determine that no replacement land is available for Project Lands villagers.

Additionally, the 2005 NT2 Social Development Plan includes seven pages that detail plans for using the downstream channel and regulating pond to provide irrigation to affected villages in the area. Downstream channel irrigation was a key benefit of the Nam Theun 2 project touted at the time of its approval by funders such as the World Bank and the ADB. The Social Development Plan states:

The primary compensation strategy in and around the Gnommalath Plain is the provision of replace-

ment land by using the Regulating Pond and Downstream Channel as the source of irrigation

water for: (i) transforming rainfed paddy into irrigated paddy; (ii) bringing new land into irrigated production; (iii) resorting irrigation facilities directly impacted by the project; and (iv) the development of fish ponds (SDP, Vol 4, Ch. 7, p.16, emphasis added).

In its October 2006 report, the Panel of Experts cited the 2006 Resettlement Action Plan's belated conclusion that NT2's power production regime results in an unpredictable downstream channel flow, "making planning for irrigation difficult and unreliable" (PoE, 10th Report, p. 28).

Furthermore, considering the absence of any biomass clearance plans for the reservoir area, the water in the downstream channel is likely to be of extremely poor quality and unsuitable for irrigation for at least several years beyond 2009. As mentioned previously, this violates the Concession Agreement which requires that "... water in the Downstream Channel must at least be suitable for irrigation purposes" (Schedule 4, Part 2, Section 9.1f).

Recommendations:

- The Independent Monitoring Agency for the Resettlement Management Unit (RMU) should urgently undertake a comprehensive review of Project Lands compensation and mitigation measures and publicly disclose its findings.
- NTPC and the GoL should: 1) urgently find comparable replacement land for Project Lands villagers, and 2) detail the livelihood restoration options that will replace irrigation for significantly affected Project Lands villagers.
- NTPC, the GoL, the World Bank and the ADB should ensure immediate disclosure of the Resettlement Action Plans (RAPs) for Project Lands.¹⁵



Resettled villagers discussing their concerns on the Nakai Plateau. Photo by Henrik Lindholm, SwedWatch.

NAKAI PLATEAU RESETTLEMENT

Problems with transitional resettlement

seventeen villages of more than 6,200 indigenous peoples on the Nakai Plateau are being resettled to make way for the Nam Theun 2 reservoir. In May 2008, the NT2 dam is supposed to be closed so that reservoir filling can begin, and all villagers must be established in their new resettlement sites by then.

The resettlement program has been fraught with delays, missing its original deadline to have all villages resettled by the 2006-2007 dry season. As a result of these delays, NTPC began moving people to temporary houses in their new villages in April 2006 under what has been called "transitional resettlement."¹⁶

At the time of IRN's visit, the more than 550 families that had been moved were still in temporary houses. According to NTPC¹⁷, only 20 to 30 permanent houses had been finished due to a shortage of timber.¹⁸ NTPC says the problems with timber supply have now been solved and all permanent houses are expected to be completed early in the 2007-2008 dry season. Many villagers complained that their temporary homes —built to last for just a few months—are falling apart. Villagers are concerned about facing the coming wet season in substandard housing. NTPC says it will ensure that "resettlers who will need to spend part of the 2007 wet season in their temporary houses will receive necessary tools, materials and assistance to ensure that their houses are secure."

Resettled villagers depend on food distribution

For now, villagers in the resettlement sites are surviving on rice and protein supports from the company,

Primary concerns of Nakai Plateau resettlers

- Some villagers do not have enough rice (some have reported selling cattle or buffalo to buy rice, especially in the demonstration village, Nong Boua, which is no longer receiving rice support)
- Some people do not have enough water in the new village
- Temporary houses are falling apart
- Nong Boua villages have received a lower price for their vegetables now that other resettlers are growing the same products
- Dust from the road
- Vietic villagers do not want to move to the new site
- Will not be able to grow rice after the reservoir is flooded
- Will not be able to keep all their buffalo because there is not enough land
- Will not have enough food and will not know what to do unless company tells them

Primary benefits noted by Nakai Plateau resettlers

- New village has roads, electricity, water and better houses
- The company provides food support
- The company may have work for them

In total IRN spoke with people from eight villages, some of whom were still in their old villages and others who had been resettled. Detailed notes from village visits are available at: http://www.irn.org/programs/mekong/namtheun.html.

NTPC's detailed response to issues raised by Nakai Plateau villagers is available at: www.namtheun2.com

income earned from the company for land clearance and other work,¹⁹ fishing and forest product collection. Villagers reported that the amount of rice provided by the company each month is often not enough for large families. They miss their fruit trees in the old village, and return there to get fish from the river and bamboo and vegetables from the forest.

In Sop On, one of the headmen said that villagers rely on the old village for about half of their food and get the other half from the company. They are worried about what will happen to them when the company stops providing rice and meat. One villager in Sop Hia said, "Before we depended on the mountain, now we depend on the company supporting us. We used to live next to the river and could catch fish for breakfast." A number of villagers, for example in Done and Sop Phene, expressed significant concern about not being able to grow rice or find enough food "after the flood comes" [when the reservoir is flooded].

According to NTPC:

The quantity of rice (and also protein) provided to each household has been determined based on the advice of nutrition experts. It is considered to be sufficient... the health and well being of the resettler communities is being monitored on a continuous basis, and complaints received by individual households stating that their rice rations are insufficient are and will be investigated.

Nonetheless, people in four resettlement villages told IRN that large families have a rice shortage every month, ranging from a few days to more than a week. Additionally, the demonstration village, Nong Boua, is no longer receiving rice support and some villagers have reported selling buffalo and other assets to buy rice. NTPC asserts that "cattle and buffalo are regularly sold by Plateau villagers, to buy rice and other essential and non essential items."

According to NTPC, the company and the GoL agreed that protein support would be provided for 37 weeks after relocation and that rice support would continue indefinitely. Despite these assurances, the Concession Agreement requires that NTPC provides "rice and protein supplements for vulnerable households through the rice bank modality until they attain and sustain the Household Income Target" (Schedule 4, Part 1, Section 12.3.1). The 37-week cut-off for protein support does not comply with this standard.

Water supply concerns

Some resettled villages also reported problems with water supply. In Sop Phene, they are waiting for a well since the water tank pump often breaks and it does not provide enough water for bathing. Villagers in Done said only 8 of 20 boreholes were working, leaving them with insufficient The Panel of Experts notes that "lower priority continues to be given to livelihood development to the extent that it is unlikely that the Household Income Target will be reached by the beginning of year 5 of the Resettlement Period, as required by the Concession Agreement."

drinking water. Villagers from Sop Hia and Boua Ma also complained about not having enough water.

NTPC responded that nearly 1,000 boreholes need to be drilled across the NT2 project and some delays have occurred. But, NTPC says, the water supply situation continues to improve: "It is expected that while the borehole coverage is still relatively low, and especially when water needs to be delivered from outside, that households are inconvenienced from time to time. However... water has always been provided and has been good quality clean drinking water." The failure to ensure adequate water supply for resettlers prior to relocation is a violation of the Concession Agreement.

Promises broken over Vietic resettlement

The Vietic villagers on the Nakai Plateau, the most vulnerable group of indigenous peoples to be resettled, are especially stuck. Sop Hia and Nam Nian villagers (including Vietics and other ethnic groups) were originally going to move, by their choice, to Khemkheut District, until the river there was found to be polluted. Now villagers have been or reportedly will be moved with other villages to Resettlement Area 7 and 8A.

The Panel of Experts' February 2007 report notes:

After elaborate consultations, the majority of Vietic households in Ban Sop Hia have emphasized first, that they want to be resettled within their current spirit territory, second, that they want their own Vietic village, third that temporary or permanent resettlement in either Area 8 or Area 7 on the Nakai Plateau is unacceptable to them, and fourth, that temporary resettlement above their current houses in Sop Hia to avoid dam-related flooding during 2007 is acceptable (PoE, 11th Report, p. 19).

During our visit, Vietic villagers in old Sop Hia explained that first a foreigner told them they could choose where to move, but then a

Lao man came and said they would be moving to Resettlement Area 7. The villagers were extremely angry and said, "The new place is very dry and we don't want to go at all. They are taking us there to kill us." The villagers explained that here they grow vegetables and rice, catch frogs and fish and bathe in the river. In the new site (where some of their relatives are already living), the soil is poorer and they will have to learn how to do new things like operate a water pump. Their relatives can't find enough food at the new site and have to rely on rice provided by the company.

The Vietic villagers in old Sop Hia with whom IRN spoke said they wanted to move to Ban Kamphon²⁰ next to a tributary of the Nam Theun. At first NTPC reported that all of old Sop Hia will be moved to Resettlement Area 7, but now notes that "18 households at the old Sop Hia have not yet decided on a relocation site." According to the Concession Agreement, the Vietics should have the option of forming their own village. To comply with World Bank and ADB indigenous peoples' policies, and the Concession Agreement, resettlement must have the broad support of the community and all villagers must agree on the site.

Livelihood programs in transition

Redoing agricultural plans

Like the resettled villagers, NTPC's livelihood plans are also in transition. The Panel of Experts notes that "lower priority continues to be given to livelihood development to the extent that it is unlikely that the Household Income Target will be reached by the beginning of year 5 of the Resettlement Period, as required by the Concession Agreement" (PoE, 11th Report, p. 11). The Panel of Experts also warns that "for a range of reasons, the forestry and agricultural livelihood programs are unlikely to meet their originally planned targets before impoundment" (PoE, 11th Report, p. 9).

Due to the poor quality of soil on the Plateau, NTPC has had to abandon the agriculture plans for resettlers that were outlined in the 2005 NT2 Social Development Plan. NTPC is working on an agro-ecological approach for the .66 hectare plot allocated to each household which "involves 2-3 years of soil improvement activities, such as planting only one-third of the agricultural plots (preferably with vegetables but rice is also an option) and the other two-thirds in pasture and selected cover plants. This is then rotated." NTPC says it is also testing borehole irrigation systems for groups of farmers and will consider different types of irrigation systems depending on the features of each resettlement site.

According to NTPC, villagers will now have an additional three hectares per family allocated (and titled) for rain-fed direct mulch cropping in the community forest area. Another five hectares per family would be available as a combined forestry/forage area. NTPC says, "This combination has already been trialed and has found to be beneficial both for forage production and forestry plantation." However, the Panel of Experts notes:

While the switch during 2006 from the Pilot Village system to the New System is more likely to be culturally, economically, institutionally, and environmentally sustainable, sufficient income from the crop agricultural component can not be expected until 2009 and beyond due to the time required to improve soil productivity through a mulch based cropping system (DMC) and because of less emphasis on irrigation than intended in the Social Development Plan (PoE, 11th Report, p. 11).

While the allocation of additional land and the introduction of a more sustainable approach are welcome, concerns and questions remain about the new agricul-



Villager guarding his buffalo on the Nakai Plateau. Photo by Henrik Lindholm, SwedWatch.

tural plans. How does the land allocation affect other uses of the community forest area? How long will it take for the system to provide villagers with income? What is the marketing strategy for the products villagers will grow? Will all unexploded ordinance (UXO) be cleared from the areas of the drawdown zone that villagers are expected to cultivate? NTPC should disclose the agricultural plans and marketing studies that answer these questions.

Buffalo reduction

Buffaloes are critical assets for villagers. As a Done villager noted, "The most important thing in our life is buffalo. If we want to buy something, we can sell buffalo. If we need to buy rice, we can sell buffalo." For now, many villagers keep buffalo in their old villages where there is more grazing land and fodder. A number of villagers expressed concern and confusion about having to sell some of their cattle and buffalo "when the flood comes."

NTPC admits that there is not enough land for the all of the resettlers' buffalo and cattle, so families with large numbers will be "encouraged" to sell some of their animals. According to the Panel of Experts, the Nakai Plateau cattle and buffalo population will need to be reduced from approximately 5,000 to 2,000, with villages such as Nakai Tai, Nong Boua, Done and Boua Ma having to sell the largest number of animals (PoE, 11th Report, p. 11). NTPC has not disclosed any strategies for buffalo reduction, including measures to deal with falling prices when villagers begin to sell their buffalo at the same time.

Village Forestry Association

The Village Forestry Association (VFA), one of NTPC's primary livelihood options for resettled villagers, is also under threat. According to the Concession Agreement, the VFA is an ambitious program "developed for the purpose of providing employment and other economic returns to the Resettlers and will be based on the principle of community ownership of the forest resource, allowing the Resettlers to participate directly in the financial benefits from sustainable commercial logging of these forests" (Schedule 4, Part 2, Section 9.6.1).

The VFA was established at the beginning of the Nam Theun 2 project with three to four members from each village receiving training in logging and sawmilling, wood processing, charcoal making, and other activities. Ultimately, all resettler households are members of the VFA and are supposed to receive US\$100 in annual dividends per family. These dividends make up a key part of the resettlers' future income sources.

The 2005 NT2 Social Development Plan assigns responsibility to the VFA for harvesting, selling and processing timber from the resettlement area (such as housing plots and agricultural land).²¹ This timber was supposed to be used to construct the 1,000+ permanent houses for resettlers. According to the World Bank, the VFA was also not required to pay taxes: "To encourage the profitability of forestry activities, the Government



Logging on the Nakai Plateau. Photo by Shannon Lawrence, IRN.

has granted tax exempt status to the Nakai Plateau Village Forestry Association (NPVFA) on local tax and will issue logging and sawmilling licenses after the completion of the NPVFA forest management plan in May 2005" (World Bank Response to IRN-EDF Technical Reviews, March 2005).

But these plans have come undone. The VFA is now being run by a former Ministry of Agriculture and Forestry (MAF) official and several VFA positions have reportedly been given to district representatives. This appears to have resulted in the government agencies taking responsibility for harvesting the timber. Revenues from timber harvesting on resettlement lands have reportedly not reached VFA accounts. The failure to transfer the forest resources in the resettlement area to the VFA constitutes a violation of Schedule 4, Part 1, Sections 9.1.2, 9.6.1, 9.6.7 and 10.6.1 of the Concession Agreement.

While the short-term success of the VFA is being undermined, its long-term potential has also been eroded. Illegal logging in the community forest area has reportedly removed all the big, valuable trees that were supposed to provide each resettled family with dividends. As one observer close to the project noted, "only trunks are left."

NTPC says it was necessary to bring in the MAF officials to help build villagers' capacity, and they assert that the VFA will be turned back over to villagers in 2009. NTPC, the World Bank and the ADB said they are looking into the issues raised here regarding the VFA.

Recommendations:

- NTPC and the GoL should address resettled villagers' concerns by ensuring adequate food support until livelihood programs prove sustainable, fixing temporary houses, repairing or developing water supply systems, paying villagers for land clearance and spraying roads.
- NTPC and the GoL should ensure that the VFA has received all the revenue it is due from timber sales in the Resettlement Area, and that illegal logging in the community forest area is stopped immediately.
- NTPC, the GoL, the World Bank and the ADB should ensure disclosure of: 1) studies and plans regarding the new agriculture approach; 2) marketing surveys; 3) the buffalo reduction strategy; 4) wet-lands, terrestrial, elephant and fish surveys and management programs for the Nakai Plateau and other project areas; 5) the community forestry plan; 6) the salvage logging plan and 7) the forthcoming reservoir impoundment strategy, upon its completion.



Water buffalo in the area to be flooded by the NT2 reservoir. Photo by Shannon Lawrence, IRN.



Villagers living in temporary houses in Ban Done resettlement village. Photo by Shannon Lawrence, IRN.

CONCLUSION

am Theun 2 has reached a critical stage. Will the commitments made by NTPC, the GoL, the World Bank and the ADB be kept? Or will villagers once again bear all the costs of misguided hydropower development in Laos?

The World Bank and the ADB assured their shareholders that Nam Theun 2 would reduce poverty, that affected villagers' livelihoods would be restored, and that the project would bring development to Laos. The World Bank and the ADB have so far failed to ensure compliance with their safeguard policies and deliver on their promises. At the time of project approval, the World Bank and the ADB committed to enforcing their loan and guarantee agreements with the GoL and NTPC and to take action when these agreements are violated. Now is the time for action. NTPC and the GoL have also backtracked on the commitments they made at project approval. Some of these broken promises constitute violations of the Concession Agreement. The gaps in planning, budget, and political will surrounding NT2 are now evident, and are threatening the livelihoods of more than 1 in 50 Laotians. NTPC and the GoL should clear biomass and address water quality threats, deal with budget and planning failures in livelihood restoration programs, and disclose social and environmental documents. Urgent action is required if NTPC, the GoL and Nam Theun 2's funders hope to avoid a repeat of past dam disasters.

ENDNOTES

- For more information concerning the Nakai-Nam Theun National Protected Area, illegal logging and mining, see the *Eleventh Report of the International Environmental and Social Panel of Experts (PoE) for NT2*, 23 February 2007, pp. 25-38, available at: http://go.worldbank.org/XO1YWANPH0.
- 2. Nam Theun 2 Environmental Assessment and Management Plan (EAMP), March 2005, Chapter 3, p. 107.
- 3. The PoE also raises concerns about the Downstream Program budget and notes that "over \$1 million... will be devoted to consultants" (*PoE 11th Report*, p. 23).
- 4. Shoemaker, Baird and Baird, *The People and their River: A* Survey of River-Based Livelihoods in the Xe Bang Fai River Basin in Central Lao PDR, November 2001, p. xi.
- 5. NTPC says that the plans contain confidential information regarding household assets. In March, the World Bank and the ADB told IRN that NTPC was asked to remove the household asset information and disclose the rest. The RAPs have not yet been disclosed.
- 6. There will be downstream impacts in other areas, such as on the Nam Theun downstream of the dam site where water flows will sharply decrease. However, the IRN field visit focused on the Xe Bang Fai area where there is the largest number of affected people.
- 7. These numbers are based on a survey conducted by independent experts (Shoemaker, Baird and Baird, *The People and their River*, 2001). NTPC asserts that only 75,000 people in 221 downstream villages will be affected by NT2, which includes the Khamkeut district downstream of the Nam Theun. NTPC's downstream livelihood restoration program targets 75,000 villagers.
- NTPC responses to issues raised here were obtained in a meeting with Olivier Salignat, Social and Environmental Deputy Director of NTPC, on March 8, 2007. Detailed Xe Bang Fai village notes from IRN's visit were sent to NTPC in mid-May 2007.
- 9. According to World Bank and ADB definitions, involuntary resettlement includes not only physical relocation, but also loss of land, assets and/or access to natural resources. As such, the Downstream Livelihood and Asset Restoration Program is a resettlement action plan and should be disclosed in accordance with ADB and World Bank involuntary resettlement and information disclosure policies.

- 10. It is not clear yet when the first transfers of water from the reservoir will be—during reservoir impoundment in 2008 or 2009 or once power production commences at the end of 2009. NTPC is developing a reservoir impoundment strategy which should address this question.
- 11. The PoE also raises concerns about the Downstream Program budget and notes that "over \$1 million... will be devoted to consultants" (*PoE 11th Report*, p. 23).
- 12. Shoemaker, Baird and Baird, *The People and their River:* A Survey of River-Based Livelihoods in the Xe Bang Fai River Basin in Central Lao PDR, November 2001, p. xi.
- 13. See Barney, K. (forthcoming). *Power, Progress, and Impoverishment:* Plantations, Hydropower, Ecological Change and Community Transformation in Hinboun District, Lao PDR. Working Paper No 1, York Centre for Asian Research (YCAR). York University, Toronto and draft chapters of Theun-Hinboun Expansion Project EIA submitted by consultant to THPC and available at: http://www.rmruk.com/eia_files/Chapters/Chapters.html.
- 14. NT2 EAMP, 2005, Chapter 3; Lanza, "Review of the Water Quality Assessment (EAMP), Proposed Nam Theun 2 Hydroelectric Project," 2005, and Theiss, "Reservoir Fisheries Predictions for the Nam Theun 2 Hydroelectric Project", 2005, available at: http://www.irn.org/programs/mekong/namtheun.php?id =namtheuntech.html.
- 15. NTPC says that the plans contain confidential information regarding household assets. In March, the World Bank and the ADB told IRN that NTPC was asked to remove the household asset information and disclose the rest. The RAPs have not yet been disclosed.
- 16. For more details regarding the transitional resettlement process, see the IRN NT2 Trip Report September 2006, available at: http://www.irn.org/programs/mekong/namtheun.html.
- 17. NTPC responses to issues raised in this section were obtained in a meeting with Michael Beauchamp, NTPC Resettlement Manager, on March 5, 2007 and in subsequent email correspondence.
- 18. NTPC says that the GOL overestimated the quality and quantity of timber available for resettlement housing, and that villagers have been too selective about the type of wood they want to be used in housing construction.

- 19. According to NTPC, in the first year after resettlement, most households can earn up to \$762 from land clearance, fence building, fertilizer application and other activities associated with preparing the resettlement sites. NTPC says that sometimes small delays occur, but that the company tries to pay as quickly as possible.
- 20. The spelling of the village is unclear and there was confusion about whether or not villagers were referring to the original Nam Pan site in the Khemkheut District.
- 21. The logging in these areas is separate from the GoL's salvage logging operation which is supposed to clear the reservoir area of valuable timber. Salvage logging will net approximately US\$50-70 million for the GoL.

Appendix 1: IRN NT2 TRIP ITINERARY

March 1, 2007

• Visit villages in the lower Xe Bang Fai (Gnangkham, Hadkhamhieng, Dong Ka Sinh)

March 2, 2007

- Visit villages in the lower and middle Xe Bang Fai (Hat Xaisung Neua, Boeung Xe, Ton Haen, Beungboatong, Vernsananh)
- Visit villages along the transmission lines (Na Thong)

March 3, 2007

• Visit villages in the upper Xe Bang Fai (Mahaxai Tai, Kham Phare Dong)

March 4, 2007

• Visit villages on the Nakai Plateau (Nong Boua, Nakai Tai, old Sop Hia, Sop Phene)

March 5, 2007

- Visit villages on the Nakai Plateau (Done, Sop On, Boua Ma)
- Meeting with NTPC (Michael Beauchamp, Nakai Plateau Resettlement Manager)

March 6, 2007

- Visit villages on the Nakai Plateau (New Sop Hia/Resettlement Area 7)
- Visit villages along the downstream channel (Sangkeo, Phone Lat Khuay)

March 7, 2007

• Visit villages along the downstream channel (Nong Ping, Tham Phuang)

March 8, 2007

- Meeting with World Bank (Patchamuthu Illangovan, Stephen Ling, Chaohua Zhang)
- Meeting with NTPC (Olivier Salignat, Social and Environmental Division Deputy Director)

March 9, 2007

• Meeting with Asian Development Bank (John Cooney, Ed Baardsen, Marla Huddleston)

March 12, 2007

 Meeting with GoL [Dr. Somboune Manolom, Lao Holding State Enterprise (LHSE), and Mr. Xaypaseuth Phomsoupha, Lao National Committee for Energy (LNCE)]

Appendix 2: VIOLATIONS OF NT2 LEGAL FRAMEWORK

The following section highlights key violations of the Concession Agreement and of World Bank and ADB policies, but does not provide a comprehensive analysis of all contract breaches.

Concession Agreement

Schedule 4, Part 1

7.8.2 The Company must ensure that the following requirements are satisfied prior to confirmation of the sites in paragraph 7.8.1:all villagers have visited the site and been provided with tech-

nical information (in an easily understood form); • all villagers have agreed on the site;

9.1.4 The GOL and the Company shall ensure that at all times during the Resettlement Implementation Period, appropriate steps are taken to mitigate against the additional risks to ethnic minority groups and vulnerable households and will ensure that plans addressing the issue of culturally sensitive development of Project Affected People ("Ethnic Minorities Development Plans") are implemented, having due regard to the SDP. This will include the following:

- relocation of Vietic or other vulnerable groups into separate administrative village units with clearly demarked boundaries and rights to resources,...;
 - Vietic villagers in Sop Hia have not all agreed to move with other villagers to Resettlement Area 7.

8.5.5 Irrigation and household water supply and distribution to each house and farm lot

The Company shall provide good quality year-round water supply to Resettlers for household use (in accordance with national standards) for the duration of the Resettlement Implementation Period from, as close as reasonably possible to each of their houses (at a minimum of 1 outlet per five houses....)

8.7.1 Relocation of Resettlers shall not be commenced until after the Resettler housing and essential community infrastructure and services are complete (including, without limitation, the village access road, allocated farm plots, schools, housing and clinics and availability of water for Resettlers households and as far as possible, water for gardening). • Three of the eight resettled villages on the Plateau that IRN visited complained of water supply shortages.

9.1.2 The GOL will take appropriate steps to ensure that:

• the forest resources in the Resettlement Area are for the exclusive use and benefit of the plateau Resettlers for seventy (70) years from the establishment of the NPVFA; and

9.6.1 The RO, with assistance from the RMU will procure that a plan for sustainable forestry ... will be developed immediately after the Resettlers have been relocated and land allocation has been completed. The plan will be developed for the purpose of providing employment and other economic returns to the Resettlers and will be based on the principle of community ownership of the forest resource, allowing the Resettlers to participate directly in the financial benefits from sustainable commercial logging of these forests.

9.6.7 The RO, with assistance from the RMU shall ensure that:

- the stated components of the Community Forestry Program (institutional development, natural resource management, forestry business and enterprise development and forest improvement with local species) are implemented in a manner which shall achieve the objectives referred to in 9.6.1 above; and
- appropriate steps are taken to mitigate against the risks of the Community Forestry Program.

10.6.1 The GOL will hand over the community forest to the Nakai Forest Association after the Association has been established, and the Forest Management Plan has been prepared by the Company and approved by the GOL and the forest management contract has been signed as provided in clause 9.7.

• Forest resources in the resettlement area have reportedly not been transferred for the VFA's exclusive use and benefit. 12.3.1 The RMU shall coordinate the provision of income support incorporating the following key principles:

• during the Resettlement Implementation Period, the Company will provide to the RMU (for distribution in accordance with regulations made under the NT2 Resettlement Policy) rice and protein supplements for vulnerable households through the rice bank modality until they attain and sustain the Household Income Target.

• Nong Boua villagers are no longer receiving rice supports and have reported selling buffalo and other assets to buy rice. NTPC and the GoL plan to end protein support 37 weeks after relocation.

13.1 Preparation of detailed resettlement plans for Project Lands (c) The Company's exact requirements for Project Lands will be identified at or around the time of Financial Close after which time the Company will finalise the compensation agreements for Project Affected Persons (on a household by household basis)....

(d) The Company shall ensure that compensation in the form of cash and replacement housing applicable to each household is provided to each affected household and that compensation payment and relocation is satisfactorily completed prior to the handover of land to the Company in accordance with the updated resettlement plans.

(e) The Company shall ensure that compensation in the form of livelihood restoration is provided to eligible Project Affected Persons prior to hand over of land where reasonably possible. (g) The Company agrees that it will prepare the updated resettlement plans in accordance with applicable World Bank and Asian Development Bank Safeguard Policies and in consultation with GOL and the Project Affected Persons and/or Project affected villages in question.

 Project Lands compensation agreements were not developed until the year after Financial Close.
 Compensation payments and livelihood restoration were not provided prior to the handover of land.
 World Bank and ADB Safeguard Policies have not been complied with (see next section).

Schedule 4, Part 2

9 Detailed description of Environmental Measures

3 Water quality improvements through reduction of biomass in Reservoir Area by salvage logging during construction (a) The Company shall ensure that a survey of present biomass in the inundation area based on a satellite image of the Nakai Plateau shall be completed by suitably competent and expert persons prior to the Construction Phase.Such survey will update the biomass estimate in the area to be inundated. The results shall be used to propose means for maximising removal of biomass in high biomass areas of the Nakai Reservoir. The priority shall be to clear the vegetation in areas which will be permanently flooded. The vegetation along the Nam Theun will be removed at the last moment in order to reduce the stress to the aquatic community.

• There are no plans to maximize biomass removal in high biomass areas of the reservoir and predictions are that water in the downstream channel will not be suitable for irrigation purposes.

19. Wildlife program Element E—Adaptive management program

The Company and the GOL will develop and implement an adaptive management program for the wildlife program by establishing a committee, comprising suitably competent and expert persons, to oversee the implementation and review the effectiveness of the wildlife program.

The adaptive management committee will meet regularly to review the findings of the wildlife studies and the experimental approach to wildlife management and to make recommendations for improving the effectiveness of the wildlife program.

• No committee has been established and none of the required wildlife plans have been finalized or disclosed.

3.1 Mitigation of Project Impacts by Head Construction Contractor during the Construction Phase

(a) Without limiting clause 9, the Company agrees that, by the Head Construction Contract it will ensure that the HCCEMMP:

(E) landscaping, rehabilitating and revegetating the Construction Areas;

¹ Water quality monitoring and maintenance of beneficial uses (f)... Water in the Downstream Channel must at least be suitable for irrigation purposes.

⁽ii) adequately addresses each of the following activities in order to avoid, alleviate, mitigate or remedy or otherwise address the Project Impacts within the Construction Areas:

⁽A) meeting effluent standards and water quality requirements

for discharges into surface waters and groundwater;

⁽B) controlling drainage, erosion and sedimentation;

(F) managing on-site waste;

(G) managing use and storage of chemicals, preventing and developing emergency plans for chemical pollution incidents;
(H) controlling noise, emissions and dust;

28 Road construction and operation

The Monitoring Program shall be such as will enable the Company to monitor and ensure compliance by the HCC with the provisions in the HCCEMMP relating to road design, construction standards and applicable mitigation measures prior to and during the construction of those roads by the HCC. In that regard the HCCEMMP shall provide for:

(a) the alignment of roads to be designed to:

(i) avoid large trees to the greatest extent reasonably practicable and otherwise so as to minimise damage to vegetation;

(b) construction management to ensure that disturbance is limited to the road easement;

(c) the restriction of construction to the dry season when possible;
(d) protection of susceptible soil surfaces with seeding and/or mulch;

(e) protection of drainage channels with berms or fabric barriers; (f) construction of sedimentation ponds and implementation of other sediment control measures as necessary;

(p) road quality and stability standards to be implemented;

(q) erosion mitigation measures to be implemented;

• The Lender's Engineer and the Panel of Experts have raised concerns about the Head Construction Contractor and the subcontractors' impacts in these areas.

World Bank and Asian Development Bank Policies

Involuntary Resettlement Policy

World Bank OP 4.12: "Displaced persons should be meaningfully consulted and should have opportunities to participate in planning and implementing resettlement programs." The policy covers those people who suffer "direct economic and social impacts" including "loss of income sources or means of livelihood, whether or not the affected persons must move to another location".

ADB OM Secton F2/BP: "Affected people are to be consulted on compensation and/or resettlement options, including relocation sites, and socioeconomic rehabilitation. Pertinent resettlement information is to be disclosed to the affected people at key points, and specific opportunities provided for them to participate in choosing, planning, and implementation options. Grievance redress mechanisms for affected people are to be established. Where adversely affected people are particularly vulnerable groups, resettlement planning decisions will be preceded by a social preparation phase to enhance their participation in negotiation, planning, and implementation."

• The failure to ensure a meaningful consultation process has contributed to the confusion with the Project Lands compensation and livelihood restoration process.

World Bank OP 4.12 requires that "taking of land and related assets may only take place after compensation has been paid".

• Compensation was not paid to Project Lands villagers before their lands and assets were taken.

World Bank OP 4.12: "Preference should be given to land-based resettlement strategies for displaced persons whose livelihoods are land-based.... If land is not the preferred option of the displaced persons, the provision of land would adversely affect the sustainability of a park or protected area, or sufficient land is not available at a reasonable price, non-land-based options built around opportunities for employment or self-employment should be provided in addition to cash compensation for land and other assets lost. The lack of adequate land must be demonstrated and documented to the satisfaction of the Bank."

• It does not seem that sufficient replacement land has been found for Project Lands villagers.

World Bank OP 4.12: As a condition of appraisal of projects involving resettlement, the borrower provides the Bank with the relevant draft resettlement instrument which conforms to this policy, and makes it available at a place accessible to displaced persons and local NGOs, in a form, manner, and language that are understandable to them. Once the Bank accepts this instrument as providing an adequate basis for project appraisal, the Bank makes it available to the public through its InfoShop. After the Bank has approved the final resettlement instrument, the Bank and the borrower disclose it again in the same manner.

ADB OM Section F2/BP: "A satisfactory resettlement plan/framework must be submitted by the EA or the project sponsors to ADB, preferably together with the project feasibility study, but in any case, before project appraisal." • Resettlement Action Plans for Project Lands have still not been disclosed although villagers' land was taken more than one year ago, even before compensation was paid. Additionally, the Downstream Livelihood and Asset Restoration Program has not been disclosed.

Indigenous Peoples Policy

World Bank OP 4.10: "Because physical relocation of Indigenous Peoples is particularly complex and may have significant adverse impacts on their identity, culture, and customary livelihoods, the Bank requires the borrower to explore alternative project designs to avoid physical relocation of Indigenous Peoples. In exceptional circumstances, when it is not feasible to avoid relocation, the borrower will not carry out such relocation without obtaining broad support for it from the affected Indigenous Peoples' communities as part of the free, prior, and informed consultation process."

• Vietic villagers in Sop Hia have not all agreed to move with other villagers to Resettlement Area 7.

Information Disclosure Policy

World Bank Policy on Disclosure of Information: "Whenever the Bank requires a Resettlement Instrument (RI) or Indigenous Peoples' Development Plan (IPDP) for an operation, the proposed borrower prepares an RI or IPDP as a separate, freestanding document. As a condition of appraisal of the operation, the borrower provides the draft RI or IPDP, which conforms to the relevant policy, and makes it available at a place accessible to, and in a form, manner and language understandable to the displaced or affected people and local NGOs. Once the Bank accepts the draft RI or IPDP as providing an adequate basis for project appraisal, and before the Bank begins formal appraisal of the project, the Bank makes it publicly available. After the Bank has approved the final RI or IPDP, the borrower again makes it available at a place accessible to, and in a form, manner and language understandable to the displaced or affected people and local NGOs. When the borrower officially transmits the final RI or IPDP to the Bank, it is publicly available."

ADB Public Communications Policy: The borrower or private sector sponsor and ADB shall make available to affected people and to the public a draft resettlement plan and indigenous peoples plan before appraisal, a final resettlement plan and final indigenous peoples plan upon completion of the plan, and a revised resettlement plan and indigenous peoples plan following changes in detailed technical design or scope of the project.

• Resettlement Action Plans for Project Lands have still not been disclosed although villagers' land was taken more than one year ago, even before compensation was paid. Additionally, the Downstream Livelihood and Asset Restoration Program has not been disclosed.



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