An Update on the Environmental and Socio-Economic Impacts of the Nam Theun-Hinboun Hydroelectric Dam and Water Diversion Project in Central Laos

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Introduction

The Nam Theun-Hinboun Hydropower Project (THHP) in central Lao People's Democratic Republic (Lao PDR or Laos) began operating in early 1998. The 210-megawatt trans-basin water diversion dam project cost US$260 million to construct. The THHP is a 30 year BOT (build-operate-transfer) project. The Government of the Lao People's Democratic Republic (Lao PDR) owns 60% of the project, with MDX Lao, a unit of the Thai power developer GMS Power (previously named MDX Power) owning 20%, and Nordic Hydropower, a partnership of Swedish Vattenfall and Norwegian Statkraft power utilities, owning another 20%. Shareholders have together formed the Theun-Hinboun Power Company (THPC). Most of the Lao PDR Government's equity in the THHP was financed by a US$60 million loan from the Asian Development Bank (ADB). The main purpose of the project is to generate hydroelectric power for export to Thailand. In June 1996, the THPC signed a 25-year power purchase agreement with the Electricity Generating Authority of Thailand (EGAT), and the project is presently exporting electricity to Thailand.

The ADB was quick to claim that environmental and socio-economic impacts resulting from the THHP would be minimal and largely inconsequential (Gill, 1998). However, in March, 1998 independent investigations of the THHP revealed serious environmental and socio-economic impacts resulting from the project (Shoemaker, 1998). In May, 1998 the ADB sent a Special Loan Review Mission to investigate the issues reported by Shoemaker. Although some problems were admitted, the ADB mission failed to recognize many important impacts, and also failed to acknowledge that the THHP is having serious negative impacts on villages outside of the original narrowly defined "project impact area" (ADB, 1998a).

In November, 1998 the ADB sent a second mission to assess the impacts of the THHP. While the second mission did not present entirely accurate information regarding project impacts, and continued to downplay some important problems, including those related to resettlement and compensation, one notable improvement was that the ADB acknowledged for the first time that the project impact area should be expanded to include the Hinboun River downstream from its confluence with the Nam Hai River to its confluence with the Mekong River, and the Kading River downstream from the THHP to its confluence with the Mekong River. Many issues not covered by the first mission were more reasonably addressed by the second. Finally, the ADB's report included a timetable for reviewing and assessing the impacts of the THHP on villagers throughout the expanded impact area in preparation for the provision of adequate and timely compensation for affected local people.

According to the ADB, the first step in this process was for the THPC to prepare a survey form and train approximately 25 interviewers to collect information from all project-affected villages and collate and analyze data.[1] This survey was expected to provide information that would allow THPC to immediately and adequate compensate for project-related losses. The process of negotiation and provision of compensation was expected to commence immediately after the survey information was collated, and to be completed in approximately eight weeks. The survey was carried out in April 1999, four months after the scheduled date.

This field report is based on investigations in the THHP expanded project impact area. Investigations were primarily conducted to evaluate whether the process for assessing, negotiating, and allocating compensation to local people for project-related impacts has developed to the satisfaction of villagers and as envisioned by the second ADB mission.

Methodology

Between 15-17 August 1999 an investigator visited nine villages in the THHP's newly defined direct project impact area in Hinboun District, Khammouane Province and Khamkeut and Kading Districts in Bolikhamxay Province. The investigator had casual conversations with villagers in each of the communities visited. In most cases village headmen and deputy headmen were the key people consulted during investigations. All discussions took place in lowland Lao language without translation. THPC officials didn't accompany the investigator during visits to the villages. A pick-up truck and motorized long-tailed boats were used for transportation during investigations.

The names and positions of villagers consulted during investigations were recorded. However, they cannot be included in this report. This is because previous experiences in the THHP area have revealed that village informants may be subjected to direct or indirect intimidation if their identities are revealed. This was illustrated when the first ADB mission sought out villagers interviewed by Bruce Shoemaker in March, 1998 and asked them what they had told Shoemaker. The photograph of one informant holding a copy of Shoemaker's report was on the front cover of ADB's first mission report. (1998a).

During investigations some village leaders claimed that they had not yet reported all the impacts they had experienced as a direct result of the THHP to THPC representatives and District government officials. Some were not yet aware that they had any right to claim compensation for impacts resulting from the THHP. As a means of improving the understanding of the Lao government regarding the situation in impacted villages, village leaders were encouraged to fully report THHP impacts to their respective district governments as soon as possible.

Due to high inflation in Laos over the last two years, values in Lao kip supplied by villagers during investigations are difficult to interpret. This is because it is not always clear whether present or past values were provided. Therefore, in most cases these values have not been included in this report.

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[1] The interviewers were expected to come from the Lao National University, Khammouane and Bolikhamsay Teachers Colleges, and other institutes.

Results and Discussion

Downstream in the Hinboun River

1) Ban Hin Khan, Hinboun District, Khammouane Province

Ban Hin Khan is a 100 year old village inhabited by approximately 40 families and situated next to the Hinboun River downstream from where water diverted from the Nam Theun River is transferred into the Nam Hinboun via the Nam Hai River. The community is situated outside of the originally defined project impact area, but is within the expanded impact area. Shoemaker didn't visit this village during his investigations in 1998. Villagers reported that a group of interviewers from the THPC visited their village in April, 1999. They reportedly spent about two hours in the village assessing the impacts of the dam. However, villagers reported that they were unclear regarding the exact purpose of the survey because the THPC representatives did not openly explain their objectives. A timetable for assessing compensation levels for THHP impacts was also not discussed, and questions posed by villagers were largely left unanswered.

Villager leaders reported that the project has caused two main impacts for Ban Hin Khan. Firstly, the water in the Hinboun River has become much more turbid than before, making its use as drinking water impossible. The village has requested three wells to help meet their potable water needs, but so far none have been provided. Villagers presently collect drinking water in the dry season from shallow wells situated between 500 and 700 meters away from the village, much further away than the Hinboun River. This has increased the amount of labor required to collect water.

Secondly, villagers reported that while there are still some fish in the Hinboun River, they are now very difficult to catch. Villagers estimated that fish consumption in their village had dropped from an annual daily average of approximately 1 kg per day to less than 0.5 kg per day over the last year. They also reported that income derived from selling fish had decreased dramatically as a direct result of THHP impacts. Prior to the implementation of the THHP villagers from Ban Hin Khan reportedly generated most of their cash income from selling fish caught from the Nam Hinboun and adjacent wetlands. This is apparently no longer the case. As a result, villagers reported increased instances of young people from the village selling their labor to towns since the THHP was completed.

Villagers are also concerned about the increased risk of flooding during the wet season due to increased water levels in the Nam Hinboun. Although no flooding took place in 1998, the area is prone to heavy flooding during most wet seasons. This is why only a limited amount of wet rice is grown in the village during the rainy season each year. Villagers stated that radio reports announcing when water levels are scheduled to rise and fall are useless because they are located far downstream from the Nam Hai, and as a result the water level changes upstream do not coincide with the changes near their village.

2) Ban Pak Hinboun Tai, Hinboun District, Khammouane Province

Ban Pak Hinboun Tai is a 31 family village situated adjacent to the Hinboun River just upstream from its confluence with the Mekong River. Ban Pak Hinboun Tai is adjacent to the larger village of Ban Hinboun Neua, which has a population of over 90 families. The village is outside of the original project impact area, but is included within the expanded impact area. Most villagers are traders, rice farmers and fishers. Shoemaker didn't visit the village in 1998.

Villagers reported that researchers from the National University of Laos (NUOL) visited their village for about two hours to assess dam impacts in April or May, 1999. Like in Ban Hin Khan, villagers from Ban Pak Hinboun Tai reported being dissatisfied with the information provided to them regarding the compensation process, and its schedule. Villagers said that interviewers had only asked them questions without providing any details regarding how this information would be used in the future. Villagers also felt that the interviewers did not spend enough time in the village to adequately assess the impacts of the project, and that certain relevant issues, such as those related to compensation for losses to fisheries and fishing gears, were not discussed during the interview. The interview process was not participatory, and was primarily based on a survey questionnaire (see ADB, 1998b).

The first impact of the THHP identified by villagers related to drinking water supplies. Villagers claimed that boiled water from the Nam Hinboun was consumed prior to the implementation of the project, but that water from the river is now too turbid to drink after boiling. Due to a lack of shallow wells in the village, many families have had to resort to buying bottled water in the dry season for home consumption. Rainwater is collected for drinking in the wet season so drinking water doesn't need to be purchased then. Bottled water costs villagers about 700 kip per 20 liter bottle and a family consumes about one 20 liter bottle of water a day. This represents a significant additional expense for villagers.

Village leaders reported that they expect to receive two wells from the THPC, and that two members of the village had already attended a training session on well-making organized by the THPC some months earlier. However, they had heard nothing in recent months and did not know if and when they would receive the promised wells.

Villagers also reported that fisheries in the Hinboun River have been greatly reduced as a direct result of the construction and operation of the THHP. Wildly fluctuating water levels in the Nam Hinboun and increased turbidity were blamed for a reduction in fish populations. Not only has the amount of fish caught for sale been reduced dramatically, but the amount of fish available for family consumption has also reportedly fallen significantly. Villagers reported that they now have to spend money to buy fish and meat from the market as a substitute for lost quantities of village-caught fish that used to supply them with enough food to eat.

Fish catches during fish migration seasons have been particularly reduced due to increased and variable water levels. Many of the best spots for setting gillnets to target migrating fish are also now unusable due to increased water levels and faster currents. Villagers believe that less fish migrate than before due to unnatural fluctuations in water levels in the Hinboun River.

Villagers also reported having lost approximately 10 gillnets due to rapidly changing water levels in the Hinboun River. However, they claimed that they were not questioned about lost fishing gears by the NUOL interviewers who visited their community. Villagers claimed that fishing has become a much "riskier" activity in the Nam Hinboun due to constant fears that fishing gears will be swept away by increased water flows. Villagers claimed that nobody listens to radio reports regarding changing water levels in the Nam Hinboun. One villager stated,

"In our village if motorized boats pass over a gillnet and damage it the owner of the boat is required to pay compensation to the fisher, but we have not heard that the dam is planning to pay us compensation for the damage they have caused to our nets."

No village vegetable gardens were flooded as a result of the THHP, because most of the village's dry season gardens are situated on an island in the middle of the Mekong River. However, villagers did report some inconvenience with regards to building a temporary bridge across the Hinboun River during the dry season. Although they were capable of completing the bridge during the previous dry season, it required increased materials and labor compared to previous years due to the increased amount of water that the bridge needed to cross over. Villagers claimed that NUOL interviewers didn't ask them about this matter.

Villagers are also concerned about the potential for increased wet season flooding resulting from higher water levels in the Nam Hinboun during the rainy season. Although the village did not flood in 1998, Ban Pak Hinboun Tai has historically been prone to heavy flooding each wet season. Therefore, few inhabitants of the village grow rice during the rainy season.

3) Ban Vang Khong, Hinboun District, Khammouane Province

Ban Vang Khong is a community of 43 households that was established about 75 years ago next to the Hinboun River just a few kilometers upstream from Ban Pak Hinboun Tai. Most village inhabitants are farmers and fishers. Unlike Ban Pak Hinboun Tai, few villagers are heavily involved in commercial trading activities. The village is outside of the original project impact area, but is within the expanded impact area. Shoemaker didn't visit this village in 1998. In late April or early May interviewers from the NUOL visited the village to assess dam impacts. However, villagers claim that researchers did not allocate nearly enough time for collecting data. One villager stated,

"They were in such a rush. They only spent an hour in the village, and their driver didn't even get out of the vehicle. They didn't ask us in detail about the impacts of the dam, and we were only allowed to answer the questions they asked. We didn't have the opportunity to tell them about other impacts that we were not questioned about. There was no time. They didn't answer our questions about compensation either. They didn't provide us with any information."

Village leaders from Ban Vang Khong reported a number of serious impacts from the THHP. Impacts to village fisheries were identified as the most serious of those. Whereas fishing previously provided the main source of cash income for villagers, fish catches have reportedly dropped sharply since the closure of the dam. Villagers claimed that the current of the Nam

Hinboun is now too fast in the dry season, making it extremely difficult to set gillnets. The increased turbidity of the water was also believed to be impacting fish populations. Villagers reported that they used to smoke fish in the dry season, but this year they stopped because they couldn't catch sufficient quantities to make it worthwhile. Fish trading in the village has also dropped dramatically.

Villagers also estimated that at least 42 gillnets had been swept away in the Hinboun River since water levels began fluctuating wildly after the dam was closed.
They also stated that fishing had generally become a much riskier activity because fishers never know when water levels will unexpectedly rise up and sweep valuable fishing gear away. Therefore villagers are now wary of setting gillnets in many previously good fishing areas. Since one 12 cm meshed gillnet costs about 1,000 Thai baht, which is a considerable investment for a poor villager, few are willing to risk large amounts of money to buy expensive fishing gear anymore.

Apart from the loss of family fishing incomes, village leaders reported that Ban Vang Khong and a number of other communities situated along the edge of the Nam Hinboun had lost significant amounts of collective community income derived from fishing as well. Many villages situated along the Nam Hinboun have traditional fisheries management systems that include the management of fish conservation areas in the deep parts of the river. Those villages don't allow any fishing in the protected areas for most of the year, but between October and January the areas are given to individual villagers to fish using gillnets which are set like bags at the top of the pools to target fish that rise to the surface. Fishing at the bottom of these areas is banned year round. The cost of each concession varies depending on the fishing potential of the area. Prices range from about 500 to 10,000 Thai baht each. The concession cost at Ban Vang Khong was 2,000 baht per season prior to the dam closing. However, in 1998/1999 the area was given out for 1,000 baht because fisheries had declined greatly and nobody was willing to pay more. The fisher who paid the 1,000 baht was only able to catch 200 baht worth of fish. This compares to the approximately 10,000 baht that was previously generated by the village concessionaire in past years. Therefore, village leaders don't expect that anybody will want to take the concession in the coming year, even though the concession was so popular in the past that villagers used to have to randomly pick names from a hat to see who would have the right to rent out the fish conservation area.

Ban Vang Khong villagers said that other villages along the Nam Hinboun had lost even more income from fishing concessions. For example, Ban Don Dou used to have a very production fish conservation area that generated 10,000 baht a year for the village. Ban Pak Hinboun used to sell the concession for the mouth of the Hinboun River for 30,000 baht a season. Ban Nakathat also has a 2,000 baht concession area. Apparently neither of these concessions is now economically viable, and last year no one was willing to rent the areas.

Apart from the fish conservation area concessions, villages along the Nam Hinboun, including Ban Vang Khong, used to give out minor fishing concessions in areas where part of the riverbank had eroded and fallen into the river. Villagers recognize these areas to be important fishing grounds where fish aggregate. Ban Vang Khong used to collect between 200 and 300

baht per season for seven or eight of these areas, but nobody has been willing to pay for these concessions since the dam started operating. Fishing there is now much less profitable.

Ban Vang Khong used to collect a total of about 4,000 baht (over US$100) a year from the fish conservation and eroded area concessions. This money was used to support community development activities and village administrative expenses. Government guests to the village were fed, and village administration costs were covered using the funds. Village leaders expressed dismay that the money is no longer available. Interviewers from the NUOL reportedly didn't inquire about impacts community-managed fishing concessions when they visited Ban Vang Khong.

Fishers in Ban Vang Khong believe that there are simply not as many fish in the river as before. They have observed that fish can no longer be seen surfacing in deep water areas where they used to be commonly observed. They believe that even if villagers were no longer able to easily catch them because of higher water levels, they would at least still see them surfacing in the deep water areas if they were in fact there.

Villagers also stated that stream fisheries near their community had been over-fished since the THHP began operating, because villagers unable to catch fish in the Hinboun have increased fishing activities in the streams.

Serious problems with accessing clean water due to the increased turbidity of the Hinboun River were also discussed. Like Ban Pak Hinboun Tai, a few months earlier Ban Vang Khong sent two villagers to a training workshop on the construction of wells. However, since then they have received no assistance with building wells and villagers were unsure whether assistance would arrive. Villagers claimed that two wells had been promised to them. However, they reported that there were problems because hand dug cement ring open wells were expected to be provided initially, but large amounts of hard rock near the surface has made hand dug wells an impossibility. Therefore, it was now recognized that drilled wells are the only option. Villagers were unaware that the THPC was planning to provide funding for the wells to compensate for impacts resulting from the dam. Instead, they believed that the Red Cross was going to fund the well construction. Because villagers from Ban Vang Khong are poorer than villagers from Ban Pak Hinboun Tai, they have not resorted to buying bottled water during the dry season to meet drinking water needs. Instead, they use small shallow wells for supplying drinking water.

Villagers also reported that every family in the village had lost their vegetable gardens as a result of flooding caused by the THHP. Dry season vegetable gardens can no longer be grown directly next to the river due to fears of flooding. Because the gardens must now be situated on the upper banks of the river, villagers have had to halve the size of their gardens because of the extra effort required to haul water up the bank by hand. This has resulted in lower village incomes and reduced quantities of fresh vegetables for family consumption.

Like other villages along the Nam Hinboun, villagers are also concerned about the potential for increased wet season flooding as result of water discharges from the dam. Ban Vang Khong is already prone to wet season flooding. Although no flooding took place in 1998

due to naturally low rainfall, the concerns of villagers seem justified, since flooding was already a problem even before the discharge was increased.

Impacts in Ban Vang Khong have been heavy, and are continuing. No compensation has yet been provided. One village leader stated,

"We are not greedy or picky people. We only want to be compensated for the difficulties we have had to deal with since the dam was built. Please help us solve our problems."

In the Project Site/Reservoir Area

4) Ban Kengbit, Khamkeut District, Bolikhamxay Province

Ban Kengbit is a community of 73 families situated adjacent to the road leading to the THHP dam site on the Theun River. The village is just a km or so upstream from the dam, and is next to the headpond or reservoir. The people of Ban Kengbit, like those from virtually all the other communities visited throughout investigations, expressed dissatisfaction with the project for a number of reasons.

Representatives from the NUOL visited the village in April, 1999. However, they reportedly spent less than an hour in the village collecting data regarding project impacts. This was considered to be far too little time by villagers, and villagers failed to report a number of serious impacts to the interviewers. The interviewers apparently only asked questions and didn't provide opportunities for villagers to add additional points or ask questions. Villagers are also disappointed that they have been provided with virtually no information about the compensation determination process. Some families said that their lives were being held up by the uncertainties regarding compensation. For example, villagers are hesitant to invest hard-earned income to buy roofing panels, since they are not certain if and when they will receive the roofing material promised to them by THPC representatives. Despite the fact that their village is situated right next to the road leading to the dam, and is passed by THPC officials on a daily basis, villagers were upset that they have never received detailed information about dam-related issues affecting them.

The issue of relocation is a sore point in the minds of Ban Kengbit villagers. While the THPC and the ADB maintain that villagers relocated from the other side of the Nam Theun River voluntarily in order for them to be adjacent to the road, this is in fact only partially the truth. Villagers claimed that although they moved on their own initiative, they deemed it necessary to do so because even though their former village site was never in danger of being flooded by the dam, the villagers recognized early on that it would have left them stranded on a narrow peninsula due to the flooding of low lying areas adjacent to the old village site. This would have left the villagers with very poor access to their fields and other places. While it was not forced relocation in the strictest sense of the term, neither was it true voluntary relocation either. Fear of impacts from the dam caused the move. Some compensation should have been provided, but according to villagers none has been forthcoming.

Furthermore, some houses had to be relocated a second time after it was found that they obstructed the road to the dam or were situated under a power line. The THPC reportedly ordered two houses blocking the road and six houses under the transmission lines to move a second time. Again no compensation was reportedly provided even though the villagers were never warned by the THPC not to build in the areas they were later forced to move from. One woman who had already had to relocate her house two times stated,

"I want to move back to near my original relocation site by the road, but I don't have the money to pay for the move, and so I am stuck on an unsuitable site in the village."

A number of villagers expressed deep dissatisfaction with the project. They claimed that they had been promised 100 sheets of metal roofing per family for village houses, but that nothing has been forthcoming. They claimed that they had been told that electricity would be installed at no charge, but now villagers realize that they will have to pay at least part of the costs for installation themselves. Many complained about not having enough money to cover the costs. They had apparently been promised three drilled wells for drinking water, but so far the wells have not been built. Nor have villagers been told if and when they might be drilled. Villagers did acknowledge that the THPC provided them with roofing, cement and some labor costs for building their village school. Villagers supplied part of the labor and all the wood.

Villagers also claimed that THPC lied to them about providing compensation for the village land taken for the construction of the dam and associated infrastructure. Villagers were particularly disappointed that the THPC did not follow through with their alleged promise to provide a buffalo to the village to compensate for the destruction of the village's cemetery, which was decimated to make way for dam associated infrastructure. Villagers wanted to sacrifice the buffalo to satisfy the spirits of their dead ancestors. One old man stated,

"What about the spirits of our dead ancestors? They promised us a buffalo so we could solve the problem, but they never gave us anything. We are worried that the spirits will be angry and cause us to have bad fortune or become ill in the future."

Villagers are disappointed that nobody in the village is being employed at the dam, even though it is very close to their village. They claimed that jobs had only been given to city people. Villagers believe that part of the reason for this is because the community was accused of petty theft of construction materials during the construction period. Villagers were very upset by these allegations, which they claimed were baseless. They claimed that during the construction period there were people from many parts of the country working at the dam-site, and that any of those could have been responsible for the theft. Since there was no evidence linking Kengbit villagers to the theft, they felt it was unfair that the name of their village had been dragged through the mud as a result of the unfounded allegations.

As in all the villages visited, villagers reported that their income from fishing has dropped dramatically since the construction and closing of the dam. While fishing previously supplied villagers with their most important source of income and animal protein, locals are now unable to catch much fish to sell, and family fish consumption has reduced significantly. Apparently the dam has blocked migrations of fish up the Nam Theun River, leaving few fish in

the reservoir. The water in the reservoir is also deep and difficult to fish. Fishing gears for deep-water fishing are much more expensive than fishing gears previously utilized, like castnets. Villagers also reported that large numbers of the large carps known as *"pa thon"* (probably *Tor sp.)* died downstream from the dam in May, 1998. No other species were seen dead by villagers, and villagers don't know exactly why they died. However, villagers believe that the dam somehow caused the fish to die, since they had never encountered fish die-offs before the dam started operating. Since then no fish die-offs have been observed. Villagers reported that the THPC's fisheries officers have been monitoring fish catches in Ban Kengbit for over a year, and that the monitoring work is continuing. They have not received any compensation for lost gillnets.

Villagers used to generate significant amounts of income from selling vegetables grown on the banks of the Nam Theun River during the dry season. However, when the dam was closed the riverbanks where they used to grow vegetables became perpetually flooded. Large numbers of family vegetable gardens were also flooded out, causing considerable losses. Since then villagers have had a difficult time establishing vegetable gardens. Soils in upper areas are not as fertile as on the riverbanks, and much more effort is needed to water gardens on high ground. The result has been a dramatic decline in vegetable gardening. Shoemaker (1998) reported that many villagers generated considerable amounts of income from selling vegetables. However, ADB (1998b) stated that gardens are of much less economic importance than Shoemaker believed because villagers used to sell vegetables to dam construction workers, who have long since left the area. While it may be true that dam workers provided a ready market for village vegetables during the THHP construction period, locals from Ban Kengbit were emphatic that a market for their vegetables still existed, if suitable places for growing vegetable gardens could be found. They claimed that they could easily transport produce by public transport to markets at Ban Nahin or even as far as Laksao town.

Villagers should not only be provided with compensation to cover the loss of gardens during the initial closure of the dam, but should also be compensated for losses in vegetable growing income and subsistence food supplies for at least the life of the project. This is because locals are still impeded from growing gardens.

Villagers also noted that transportation across the reservoir is more dangerous and time consuming compared to before. Problems are especially severe when winds are strong and waves develop on the reservoir, making small boat travel very unsafe. Young children and old people who used to regularly cross the river to get to agricultural fields and other places now find it difficult to cross the THHP reservoir.

5) Ban Kapap, Khamkeut District, Bolikhamxay Province

Ban Kapap is a community with 71 families situated adjacent the reservoir upstream from the dam. The village is separated into two parts. One part is called Ban Sop Gnouang, and the other is called Ban Kapap. However, both parts are included in the same village administration, and the same village headman is responsible for both parts, which are collectively called Ban Kapap. Shoemaker visited the part of the village known as Ban Sop Gnouang in 1998 (Shoemaker, 1998). In April, 1999 interviewers from the NUOL visited their community to

assess impacts caused by the dam. They spent about an hour in the village. Villagers believe that they didn't spend nearly enough time in the community to assess the dam impacts. Villagers reported that they failed to address all of the impacts facing their community. One village leader said,

"So many people have come to our village to ask us so many questions about things like how many pigs and chickens we have. Each group came and asked the same questions, but after they asked us a lot of questions they just left and there has been no action. We don't know what they do with the information they collect from us. Nobody has ever discussed the impacts of the dam with us openly and in detail. We want to know what sort of compensation we can expect to receive for our losses. Our lives are in ruins and if something is not done to improve the situation we may not be able to survive in the village for more than about three years. We may have to move away to somewhere else."

The situation in Ban Kapap is serious, despite the fact that the village has received more compensation from the THPC than any other village visited during the research. To begin with, there used to be a serious problem in the village because streams surrounding the village backed up after the dam was closed, making it difficult for people to cross them. However, Kapap and Sop Gnouang have since received support in building three bridges with pipes so that the transportation problem has basically been solved. In 1998 villagers also received a supply of school books and shirts for children. Like the other 12 villages adjacent to the reservoir, Ban Kapap has also received a small floating platform from the THPC to make bathing in the reservoir easier.

Mulberry seedlings have been provided to almost all the families in the village, and they were planted last year. Villagers said that the project was trying to promote silkworm production in the village as a pilot project, but they are uncertain whether this will significantly improve their livelihoods. Moreover, villagers believe that silkworm production has not been provided to compensate them for dam-related impacts, but rather to encourage them to reduce or stop shifting cultivation, which is the main agricultural method used in the village due to hilly geographic conditions in the area, which makes lowland rice production impossible.

Although the villagers of Ban Kapap are grateful for the assistance they have received so far, their overall morale remains extremely low, and villagers maintain that the assistance provided has not come close to compensating them for the main impacts to their livelihoods.

The most important impact of the dam has been with regards to fisheries. Villagers claimed that they have lost huge amounts of family income as a result of dramatic declines in fish catches since the dam was built. While villagers admit that there was a very short period of about a month after the dam was closed in which fish catches were good, since then catches have plummeted. Villagers report that it is now difficult to get even enough fish to feed their families, let alone surplus for trade. Villagers claim that they have made an effort to adjust their fishing methods to the new reservoir conditions by buying large gillnets, but even those who could afford to buy these expensive gears have been disappointed with catches. No compensation has been provided for losses in fish catches, or for the increased investment in fishing gears. Large fish have become particularly rare. Fishers have also not been compensated for fishing gears lost

when the dam was closed and water levels in the reservoir started to unpredictably fluctuate. Even now villagers believe fishing has become a risky activity since water levels continue to fluctuate without warning, which puts them in constant danger of losing fishing gears.

One fisher provided the following explanation as to why there are very few fish in the reservoir or headpond area,

"There are so few fish in the reservoir because water levels fluctuate a lot on a daily basis. When the water levels drop, the fish naturally move downstream below the dam, but when the water levels rise the fish that went downstream can't move back up past the dam into the reservoir again. The reservoir is also not a place where fish like to stay. They liked the rapids and deep water pools that used to be in the area."

While the actual reasons for why there are so few fish in the reservoir are likely to be more complicated than the above explanation, the explanation provided by the fisher may at least explain part of the story.

The loss of vegetable gardens is probably the next most important impact of the dam. Like the issue of fisheries, it too has been left unaddressed to date. Many gardens in the village were flooded and destroyed when the dam was closed. Moreover, there are no longer many suitable places for making vegetable gardens, and the soils on the high ground areas that are available are not as good as the alluvial soils that were previously used along the edge of the riverbank during the dry season. Therefore, vegetable garden losses don't just represent a short-term one-time loss, but a long-term impact. Vegetables grown in the village previously met subsistence needs and some were also sold to outside markets.

Because two of Ban Kapap's main sources of cash income have dramatically declined since the dam was built, villagers have had to increase the amount of shifting cultivation they are conducting. However, villagers don't expect a good crop in 1999 due to insect damage. In the past it was possible for families to only cultivate small swidden plots and rely on income from vegetable growing and fishing to supply them with money to buy part of their rice requirement. However, now that the funds for buying rice are no longer available, the food security situation in the village has become much more precarious. Most families in the village don't have enough rice to feed themselves all year. It is not clear whether the increased shifting cultivation around the village will have significant long-term impacts on the management of natural resources in the area.

Villagers reported that the water in the reservoir is of poor quality and not suitable for drinking. They said that Ban Kapap has been promised two wells, but that so far none have been provided. Villagers were unclear as to when the THPC will drill the wells.

Villagers requested that iron roofing be provided for their houses as partial compensation for their losses, since most houses in the village presently only have grass roofs. However, they have received no response to their appeal. They also hoped electricity would be installed in their village for free, but now they realize that villagers will have to pay at least part of the cost of

installing the power. However, village leaders doubted that the village would get electricity soon because apparently only 2 or 3 families can afford to pay for the electricity installation costs.

Ban Kapap villagers had many high hopes when they first heard that the THHP was going to be built. One villager stated,

"We expected that the dam would bring prosperity to our village. We believed that the reservoir fisheries would be plentiful, and that free electricity would be provided to our community. Now we have woken up to reality, and we don't like what we have experienced so far. We are not hopeful for the future."

Village leaders from Ban Kapap said that the dam has negatively impacted many villages in the reservoir area. Apart from Ban Kengbit and Ban Kapap/Ban Sop Gnouang, other villages that have been greatly impacted are Ban Tha Sala, Ban Vang Souay, Ban Don, Ban Tabak, Ban Sop Kat, Ban Takout, Ban Phabang and Ban Sote.

Villagers also claimed that fish stocks in upper parts of the Nam Theun River outside of the reservoir area are being threatened because many villagers began fishing there once fisheries downstream had been impacted. Many make regular fishing trips upriver. Fisheries upriver are also threatened since migrating fish aren't able to migrate up the Nam Theun River past the dam. Villagers were adamant that fish were previously able to migrate far up the Nam Kading/Nam Theun River. They claimed that while some people believe that fish can't migrate up the large rapids of Keng Fong, downstream from the dam, they believe that fish can negotiate the rapids by moving up side channels when water levels are high. Villagers from lower parts of the Nam Kading River provided a similar explanation. Villagers therefore expect that these imbalances will eventually result in over-fishing in upper parts of the Nam Theun River and dramatic declines in fish stocks there. It seems reasonable that villages in upper parts of the Nam Theun basin should also be eligible for compensation due to these indirect project impacts, but these impacts have not yet been considered by the ADB.

6) Ban Namsanam, Hinboun District, Khammouane Province

Ban Namsanam is a village situated adjacent to the tailrace channel that flows into the Nam Hai River, and is not far from the THHP powerhouse. Shoemaker reported that villagers had told him that, *"they have been told by the authorities that they must move their entire village of more than 100 households due to the risk of flooding at their current location"* (Shoemaker, 1998: 10). However, the second ADB review mission reported that, *"The Mission could find no evidence to support claims by outside observers that the Project has required resettlement of villages. All evidence indicates that the main point of controversy, resettlement of Ban Namsanam, is being done at the request of the villagers due to reasons unrelated to the Project. THPC is supporting this relocation on a voluntary basis"* (ADB, 1998b: 3). Since the above two statements appear to directly contradict each other, the investigator tried to clarify the actual situation.

In August, 1999 approximately half of the households of the village had already relocated to the newly prepared relocation site across the tailrace canal from their old village. The other

half remained at the old site. Discussions with villagers who had already moved to the new site quickly clarified the actual situation with regards to relocation in the village. Villagers emphatically denied the claim made in ADB (1998b) that they had relocated due to reasons unrelated to the project. One village leader stated,

"Nobody wants to move their homes to the new relocation site. We were happy in the old village, but circumstances resulting from the construction of the dam have made it difficult for us to remain in the old village."

Villagers claimed that they had to leave their village because of impacts caused by a road built by the THPC. The road has apparently obstructed natural water drainage patterns from the village. This has not resulted in full-fledged flooding of the village, but has made habitation of the old village very difficult since the whole area is now a series of puddles and small waterways. Villagers claimed that they tried to warn the THPC early on regarding the drainage problems related to the road construction, but to no avail. With difficulty, they persuaded the THPC to supply them with a drainage pipe, which villagers themselves installed to try to mitigate impacts. But the pipe proved to be incapable of solving the drainage problem. Villagers claim that poor drainage lead to sanitation problems in the village which in turn partially resulted in a cholera epidemic ravaging the village last year. Two people died. After being hit with cholera, many villagers felt that it was necessary for them to move to the new relocation site. Nobody really liked the new relocation site, but they didn't want to put their families at risk from cholera. This being the case, it is clear that the relocation has been a direct result of impacts caused by the THHP, and is not due to *"reasons unrelated to the Project,"* as stated in ADB (1998b).

To make matters worse, the amount of compensation that has been provided to villagers for relocating their houses has been very low and entirely unacceptable to the community. According to villagers, each household is allowed 100,000 kip in cash compensation (the equivalent to a little over US$10 at the time of investigations), 15 pieces of metal roofing, 2.5 kg of roofing nails, and between 3-5 kg of standard nails. No other relocation support has been provided, and villagers claim that the compensation package listed above is not nearly sufficient to cover the costs of dismantling, moving and rebuilding their houses on the new relocation site. Furthermore, compensation for the loss of fruit trees in their old village and for the loss of land has not been discussed.

Villagers also expressed deep dissatisfaction that other promises they claimed the THPC had made to them had not been followed through. Villagers claimed that they were promised electricity and clean drinking water at the new relocation site, but the 50 families that have already moved there have not been supplied with either. Villagers state that the THPC attempted to drill wells at the new site, but that the water from these wells was poor quality due to mineral deposit contamination underground, making the wells unusable. No solution to this problem has been identified so far. The THPC has, however, built a school at the new relocation site.

To make matters worse, villagers expressed deep dissatisfaction with not being able to collect water, bath or fish in the tailrace canal situated directly in front of the relocation site. Since there are no other sources of water near the relocation site, villagers have been forced to

sneak over the metal fence separating them from the canal to collect water and take quick baths. However, this is not easy since guards have been posted to keep locals from using the tailrace canal. Although villagers from Ban Namsanam have not been provided with any clear explanation as to why they are being prohibited from accessing the tailrace canal, a former government official familiar with the project provided an explanation. Apparently a villager who had been fishing in the tailrace canal about a year ago died for an unknown reason. His body fell into the water and could not be immediately recovered. Operators had to stop power generation for a few hours to dry out the tailrace canal and recover the body. This action apparently cost the THPC a significant amount of money in lost power generation revenue. Therefore, it was decided that the best way to prevent such a problem in the future was to ban the use of the tailrace canal by villagers altogether. This may be a solution for the THPC, but it leaves villagers without direct access to water and fishing grounds, and has left a very bad taste in their mouths.

Villagers also claimed that the new relocation site is not as good as their old village site because the soil at the old site was good, while the soil at the new site is rocky and unsuitable for vegetable gardens or fruit tree cultivation. Furthermore, villagers said they didn't like the new site because they felt like they were living in a prison or refugee camp. The area is treeless, barren and partially surrounded by a metal fence.

According to village leaders, while villagers were originally told that they would have to relocate to the new site before long, Hinboun district officials have recently told them that relocation can now take place whenever villagers want. Villagers who spoke with the investigator believe that the district has softened their stance because the THPC is not supporting the relocation activities as originally envisioned. Still, village leaders believe that the approximately 50 families remaining in the old village will eventually have to move to the new site because the water drainage and sanitation situation in the old village remains problematic. For now, those remaining are waiting to see whether the electricity and clean water promised for the new site will be forthcoming or not. If those services are provided, villagers believe that most or all of the remaining families will begrudgingly agree to move to the new site. Some villagers have also not moved because they can't afford to move their houses, since the compensation being offered by the THPC is inadequate to cover the costs involved. Many continue to hope that more reasonable compensation will be forthcoming, but village leaders have become increasingly pessimistic about the intentions and actions of the THPC to solve their problems. One village leader stated,

"We've lost all confidence in the dam company. They're not paying attention to our problems. Our experiences with the company have not been good. They have not been sincere in their efforts to help us."

Downstream in the Kading River

7) Ban Hatxaykham, Kading District, Bolikhamxay Province

Ban Hatsaykham is a community with 118 families situated next to Nam Kading (lower Nam Theun) River and Route 13. The village was visited by Shoemaker in 1998. Villagers met

were not aware of any visit to their village by researchers from the THPC. However, considering that other villages in the area were visited, it seems likely that NUOL researchers have visited the village.

Villager leaders stated that fisheries in the village used to be the biggest single source of income for local people. However, since the operation of the THHP there have been sharp declines in water levels in the Nam Kading, especially during the dry season. Only five cubic meters of water is released as downstream compensation flow at the Theun-Hinboun dam site, which is about 100 km upstream from the confluence of the Nam Kading with the Mekong River. Fishers largely blame severe declines in fisheries on the unusually low water levels in the Nam Kading caused by the THHP. Incomes from selling fish have reportedly fallen 50%, and fish consumption has also declined from an average of about 2 kg a day per family to about 0.5 kg a day. As one villager put it,

"Of course fish catches have been reduced. With so much less water, how could they have been expected to have remained the same."

Villagers claimed that some large and valuable species of fish no longer migrate up the Nam Kading due to decreased water flow. In addition, some migratory small cyprinids have also reportedly stopped migrating up the Nam Kading at the beginning of the dry season due to declines in water levels. Villagers also expressed concern that extraordinarily low water levels have left many large brood-stock fish especially vulnerable to capture fisheries. They fear that this could put the sustainability of some fish stocks in serious jeopardy.

Approximately 20 gillnets and a number of longlines have been lost by the villagers as a result of unpredictable changes in water levels in the Nam Kading caused by the operation of the dam. They said that fishing had become a much riskier activity because it was impossible to know when water levels would change.

About 50% of the families in the village reportedly have gardens along the Nam Kading in the dry season. Although villagers said they could still make gardens, they said that the quality of the soil had declined because some areas that used to be flooded and naturally fertilized by the river are no longer inundated. It is also further to carry water for gardens. Garden production was estimated to have declined by about 33% as a result of the above problems.

Declines in Nam Kading water levels during the dry season have also seriously impeded villager boat transportation. Villagers complained about how difficult it now is to go upriver on fishing trips, to travel by boat to other villages, or to travel to areas to collect non-timber forest products.

Villagers claimed that the communities in the lower Nam Kading basin that have been impacted the most by the THHP are Ban Pak Kading Tai, Ban Pak Kading Neua, Ban Pak Pang, Ban Don Say, Ban Pak Soun, Ban Phousy, Ban Mai, Ban Phonngam, Ban Phonkham, Ban Phonsay and Ban Hatsaykham. Ban Houay Leuk, Ban Pak Phouy and Ban Pak Peuak were also mentioned, because they are adjacent to the Nam Soun stream, a tributary of the Nam Kading.

Villagers believe that none of the villages have received compensation for their losses yet. They didn't have any information about plans to provide villagers with compensation for losses caused by the THHP.

8) Ban Pak Soun, Kading District, Bolikhamxay Province

Ban Pak Soun is a community of 95 families situated next to the Nam Kading River and the Nam Soun Stream. There is no road access to the village. Shoemaker didn't go to this village in 1998. Villagers reported that researchers from the NUOL visited the village in around April or May, 1999. They stayed for about three hours in the village. They provided virtually no information to the village regarding their mission, or the compensation determination process.

As in Ban Hatsaykham, villagers reported dramatic declines in fish catches since the THHP started operating. Both fish-derived income and fish consumption were reported to have declined significantly since the dam started operating. Villagers complained that the fish had disappeared because there were no longer deep areas for them to stay in during the dry season. They believe that fish migrations have been heavily impacted in the Nam Kading and Nam Soun as well. Villagers also reported very large losses in fishing gears as a result of wildly fluctuating water levels in the Nam Kading – between 300 and 400 gillnets were estimated to have been swept away since the dam was built. One villager said,

"Before when it rained upriver we knew water levels would rise, but now water levels sometimes drop when it rains, and when the weather is good water levels sometimes quickly rise. We have no way of knowing when our fishing gears are at risk of being swept away."

They claimed that reduced water levels and flows had lead to algae blooms in the Nam Kading during the dry season that made fishing difficult.

Villagers have experienced around 50% declines in vegetable production due to watering problems and declines in soil fertility. Villagers were also very concerned about transportation problems resulting from low water levels in the dry season. Since there are presently no roads to the village, villagers rely mainly on motorized long-tail boats for transportation. Even if there was a road, boat travel would probably remain important because nobody owns motorized vehicles in the village.

Villagers claimed that about 20 pump wells in the village that used to supply water to the community year-round had gone dry or close to dry during the dry seasons of 1998 and 1999. This indicates that reduced water levels in the Nam Kading may have caused a lowering of the water table. If true, this could have a severe impact on the ecology of the lower Nam Kading basin, including the Kading National Biodiversity Conservation Area, which is situated just upriver from Ban Pak Soun. These impacts have not yet been considered by the ADB.

9) Ban Pak Kading Neua, Kading District, Bolikhamxay Province

Ban Pak Kading Neua is a large market town situated along Route 13 at the confluence of the Nam Kading with the Mekong River. There are several shops and restaurants in Ban Pak

Kading that buy and sell fish. Some fish transported through the town are sold to as far away as the capital city of Vientiane. Shoemaker (1998) reported that several shop owners from Ban Pak Kading confirmed that fish available from the Nam Kading had declined dramatically since the dam closure. Shop owners who spoke to the investigator in August, 1999 told basically the same story. One shop owner said that most of the fish sold in Ban Pak Kading now comes from the upper Nam Soun Stream, and the Nam Sa River. She stated,

"Because there is less water in the Nam Kading, there are less fish. Before most of the fish we bought and sold came from the Nam Kading, but now most comes from the Nam Sa because there aren't many fish left in the Nam Kading."

Conclusions

The main conclusions of this field report are that the THHP is continuing to cause severe environmental and socio-economic impacts in a broad area and to a large number of rural communities in Hinboun District, Khammouane Province and Khamkeut and Kading Districts, Bolikhamxay Province, Central Lao PDR. Villagers within the area directly impacted by the project are dissatisfied with the level of compensation they have received for these impacts. They are also dissatisfied with the very small amount of information they have received regarding compensation determination. Although the investigator fully intended to report on both the positive and negative impacts of the THHP in this report, it became very difficult to report positive impacts because not one villager had positive things to say about the dam. This explains why mainly negative impacts from the project have been documented here.

Although the Aide Memoir prepared by the Asian Development Bank in November, 1998 stated that additional information regarding the impacts of the THHP would be collected through village surveys beginning in January, 1999, these surveys apparently didn't begin until April, 1999. It was also expected that negotiations with villagers regarding compensation would begin shortly after these surveys had been completed, eight weeks later, and that compensation would be dispersed to villages as early as May, 1999. However, as of August, 1999 negotiations with impacted villages had not yet begun. Nor had adequate compensation been provided to affected communities.

Although the ADB praised the THPC's Environmental Management Committee Office (EMCO) for having done *"a commendable job communicating with villagers"* (ADB, 1998b:Annex 2, p. 7) recent investigations indicate that villagers are in fact very dissatisfied with the THPC and EMCO, and are particularly critical about the lack of public participation in the compensation determination process. Villagers claim that they have received virtually no information regarding the compensation determination process, and that representatives of the THPC, EMCO and the NUOL have simply collected data without providing any explanation regarding how it would be used, or what compensation villagers could expect in the future. Information provided by villagers during investigations provide a preliminary indication that the survey forms used by the NUOL have not been able to *"capture all project impacts"*, as envisioned by the ADB (ADB, 1998b). It was found that many of the statements included in the Aide Memoir of the ADB prepared in November, 1998 are either misleading or incorrect,

especially in relation to relocation issues. Additional impacts not previously reported on by Shoemaker (1998) or the ADB (1998a and 1998b) have also been identified.

It is clear that the ADB and the THPC have failed to live up to their own promises and commitments to the environment and local people living in the THHP impacted area, and that a much more sincere effort is needed to ensure that long term environmental and socio-economic impacts are assessed in detail, with the full participation of affected people and local government officials. It will also be necessary for a detailed schedule to be devised that will provide for compensation to villagers who are now facing serious long term project derived impacts. Villagers should receive adequate compensation for impacts directly and indirectly resulting from the project, and provisions need to be made promptly. Compensation for villagers also needs to be ensured for at least the full life of the project. It has been almost 20 months since villagers first observed many of the impacts from the THHP, and efforts need to be made to seriously address the compensation issue as soon as possible. The welfare of many thousands of disadvantaged rural people is dependent on immediate action.

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