

# **The Forgotten Victims of the Nam Leuk Dam in Laos: Summary of Fact-Finding Trip to Affected Villages**

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## **1) Summary of Findings**

Despite assurances from the Lao government and project funders, there are serious ongoing problems with mitigation of the social and environmental impacts of the ADB and Japanese government-financed Nam Leuk Hydropower Project. A Laotian researcher traveled to villages affected by Nam Leuk last May and found that villagers are suffering from problems with food security, health and education. Compensation to mitigate impacts to villagers' livelihoods has been sporadic and inadequate. Some people have received no assistance at all, despite experiencing significant impacts directly attributable to the dam.

There are three broad impact areas associated with the Nam Leuk Dam. The first is the area encompassing the dam's reservoir, and adjacent areas. Agricultural land has been lost, and some people have been relocated from the area. These people are facing various social and livelihood difficulties, including serious health, education, and agricultural problems. The second area includes parts of the Nam Leuk River basin downstream of the reservoir to as far as the Mekong River. In that most of the water in the Nam Leuk River has been diverted from the Nam Leuk basin to the Nam Xan basin, via the dam's reservoir, the Nam Leuk basin has been seriously impacted due to dramatic changes in hydrology and water quality. Water for drinking, agriculture and boat transportation is now in short supply, especially in the dry season. Aquatic life, including fish, has been dramatically impacted, making fishing and other river-based livelihoods very difficult for local people to continue. The third area includes the Nam Xan River, the recipient of water from the Nam Leuk reservoir. Unlike the lower parts of the Nam Leuk basin, which suffers from a lack of water, people living near the Nam Xan have to deal with too much water - poor quality water from the reservoir. This caused massive fish die-offs as well as various human and domestic animal health problems.

## **2) The Study**

The purpose of this study is to determine how the Nam Leuk Dam has impacted people and to give an indication regarding the extent of those impacts. It has also been done to determine whether mitigation measures have been implemented to reduce or eliminate impacts that have resulted from the project and whether affected people have been adequately compensated for their losses. This study has been prepared to provide interested parties with a general outline of the situation in relation to the people and environment impacted by the Nam Leuk Dam. However, not all the villages impacted by the project have been visited, and not all impacts have been investigated in detail. Therefore, this report should be considered preliminary, and more

detailed surveys of the impacts are required. Nevertheless, this study should help provide the reader with a general impression of the situation of local people affected by the Nam Leuk Dam.

Fieldwork associated with this study was conducted in May 2003 by a Lao researcher. Over a number of days, he visited seven villages affected by the construction and operation of the Nam Leuk Dam. In each community, he met with village headmen and a large number of other villagers, and asked them for their ideas about how the dam has affected local people, and how they had been compensated for losses they experienced. After recording data provided by local people in the project area, the researcher prepared a Lao language report, which was later translated into English.

### **3) Background**

Laos is a country rich in natural resources, including thick green forests and free-flowing rivers. These forests and rivers are home to various species of wildlife and high levels of biodiversity. This is especially so in the Phou Khao Khouay National Biodiversity Conservation Area (NBCA), which is located between Vientiane Province, Bolikhamxay Province, and Saysomboun Special Area, and is one of the countries' most important protected areas. The area is home to many rare and endangered wildlife species, including tigers, elephants, gibbons, and a wide diversity of other species (Anon. 1990), as well as a diverse array of fish species (Kottelat 1997). Local people rely on various natural resources, including various land and water-based non-timber forest products, for their livelihoods.

In 1990, the Lao government opened the door for foreign investment in many hydroelectric dams throughout the country, a move that has threatened communities and ecosystems (IRN, 1999). The government has promoted electricity as its number one foreign export to raise revenues to develop the country. The US\$130 million Nam Leuk Hydroelectric Project is one of the dams that the government chose to begin building in 1997 and completed in 1999. The Lao government borrowed US\$52 million dollars from the Asian Development Bank (ADB) to finance the dam, and the Japanese Overseas Economic Cooperation Fund and the Lao government provided additional funding for the project (IRN, 1999).

The Nam Leuk Dam was built to generate 60 MW of power, mainly for export to Thailand, but also for domestic consumption. The project was also one of three projects planned to increase water flow (and thus power production) from the Nam Ngum reservoir. The dam has a reservoir that is 12.8 km, and is situated in the middle of Phou Khao Khouay NBCA. Completed in 1999, the project was constructed by China International Water and Electric Corporation. Sogreah Ingenierie, a French company, conducted technical design work, as well as environmental and social planning for the project (IRN, 1999; Kottelat, 1997). After an agreement was signed to construct the dam, hundreds of hectares of land inside Phou Khao Khouay NBCA were cleared so the dam could be built. A diverse variety of forests were rapidly and carelessly cut down in order to complete the project. Roads to service the dam were destructively built and led to problems with erosion. Some people who lived in the area had to relocate to a resettlement village, because their houses and agricultural lands were threatened with inundation by the project. Tens of families had to relocate. Others who did not have to relocate have been affected by dramatic changes to the Nam Leuk and Nam Xan Rivers.

## 4) Findings

### 4.1) Villages located along the lower Nam Xan River

“In the past, local people had a lot of cows and buffaloes. In the evenings we could see them going down to the edge of the river to drink, but now the people do not have anything to use as capital. We can only wait for the higher authorities to replace the animals that were lost because they constructed the dam.”

– Tha Heua villager, 6/5/2003

There are three villages located along the Nam Xan River downstream from where the water from the Nam Leuk Dam’s reservoir is released into the Nam Xan River. Done Hom and Tha Heua villages are located just upstream from where the Nam Xan River flows into the Nam Ngum reservoir. Tham Din village is situated upstream from Done Hom village on the west bank of the Nam Xan River. These villages have been negatively impacted by water releases from the Nam Leuk reservoir.

In 1999, water from the Nam Leuk reservoir began to be released into the Nam Xan River to produce electricity and to increase the amount of water in the Nam Ngum reservoir.

Tham Din village has about 448 people in 67 households who together cultivate 250 hectares of agriculture land. Cows and buffaloes that had been released by their owners to stay along the edge of the Nam Xan River died after they drank the bad smelling water released from the dam’s reservoir. Villagers in Done Hom and Tha Heua have faced similar impacts. Twenty-nine cows and buffaloes died in Done Hom shortly after the dam was built, and locals have attributed these losses directly to the operation of the dam. In Tha Heua village, 60 of their cows and buffaloes died.

Before their buffaloes and cows died, local people used to sell some to generate family revenue to buy rice, clothing and various household goods. This allowed local people to live fairly prosperous lives.

At the time of the annual festivals, cows and buffaloes are also killed for ceremonies to celebrate or welcome guests. However, after so many animals died, villages lack the large amounts of funds needed to replace the animals used in festivals, and it is difficult for villagers to raise animals again.

Although the Nam Xan River was previously well-known as an important spawning and nursing ground for many species of fish found in the Nam Ngum reservoir, including the large catfish, *Wallago leeri* (*pa khoun* in Lao), there was apparently little or no consideration of how the water releases from the Nam Leuk reservoir would impact aquatic life in the river and the Nam Ngum reservoir. Although the full extent of impacts has not yet been documented, it is clear that initial releases of ‘rotten’ water from the reservoir caused very large numbers of fish to die. Locals have lost a lot of income from selling fish, which used to be an important occupation for them.

Before the dam was built, local people used to grow vegetable gardens along the silt enriched banks of the Nam Xan River at the end of the rainy season and at the beginning of the dry season. However, water released from the dam has caused the flooding of these vegetable gardens along the edge of the Nam Xan River, and erosion caused by water releases has also made vegetable gardening more difficult.

Apart from affecting domestic animals and fish, declines in water quality due to the dam have led to health problems for villagers living along the Nam Xan. Nam Xan villagers experienced increased amounts of diarrhea and malaria from drinking and using the water from the river. (Note that villagers often refer to other types of illnesses as 'malaria'.) Electricite du Laos (EdL) stated that problems with water quality on the Nam Xan were not expected to occur again after the initial releases from the reservoir in 1999 (EdL, 2003). However, villagers report that water quality decreases in the dry season when water levels go down, and even now, it cannot always be consumed during that season. The people lack adequate access to reliable sources of clean drinking water year-round, as well as medicine and a health clinic. EdL constructed wells in Ban Tham Din and Tha Heua villages, but the pumps have since broken down so the wells are no longer functioning.

After the Nam Leuk Dam first began operating, and water from the reservoir was released into the Nam Xan, the water downstream from the input channel could not be used at all. If people bathed in the river, they became itchy, and it was not possible to drink the water. Only after the year 2000 did the water quality improve somewhat, and local people could again begin consuming the water. However, the quality is not as good as it was before the dam was built. In addition, only after 2000 did the fish in the Nam Xan River stop dying, although by that time there were few fish remaining and much damage had already been done. Moreover, some water quality problems that are undoubtedly affecting aquatic life persist, especially in the dry season.

Villagers report that the government has not provided adequate compensation for their losses. This has caused villagers to become very upset and dissatisfied, as the damages they have suffered are on the order of many millions of kip (thousands of dollars). They feel the government has not taken sufficient action to assess and resolve problems that have resulted from the dam.

Villagers living along the lower Nam Xan River have requested that the government undertake the following actions:

- 1) Provide monetary compensation to villagers for animals that have died.
- 2) Make fishponds, open up new rice paddy farmland with machinery, and drill wells, since the water in the Nam Xan River is polluted due to water releases from the reservoir, and there are few fish left to eat or sell.
- 3) Authorize agriculture officials to provide technical assistance to villagers, and also help to till newly created rice paddy farmland for one year so that the land is softer for them to till using buffaloes. Some funding for villager agricultural activities is also needed.

#### **4.2) Villages located along the middle Nam Xan River**

There are some villages situated along the Nam Xan River upstream of where water from the Nam Leuk reservoir is released into the river. The upstream village situated closest to the input channel is Keng Xan village.

In total, there are 78 families (568 people, of which 328 are women) in Keng Xan village. Sixteen families in particular have lost agriculture land as a result of the Nam Leuk Dam. In response, villagers went to the district government office to request that the appropriate parties address the problem. Villagers want money generated from the project to be used to compensate them for their losses, since the dam caused the losses. The problems facing villagers have continued for such a long time that villagers have become impoverished.

The impacted people did not have adequate land for cultivation or sufficient rice to eat until 2001, when the government finally provided some assistance. The families that lost the most land received 10,000,000 kip (US\$950) as compensation. For food, rice was promised for three years. Each month, families were promised 200 kg of rice each. However, the compensation has not been enough to make up for the losses, as some families have lost up to 20,000,000 kip (US\$1,900) worth of land. In addition, the quality of the farmland they have to grow rice on is not as good as the land lost. Therefore, they are likely to continue experiencing food security problems in the future

If people want to practice swidden agriculture, they cannot since the terrain is steep and mountainous. The government also does not allow people to practice swidden agriculture because of efforts to stabilize agriculture. Even though affected people have received some money as compensation, they do not know how to make productive use of it. Therefore, after a short time, the money was gone. The fertile land that belonged to their ancestors and was passed through family lines was lost. In the past people grew more than enough rice to eat each year. They used to sell their extra rice to earn income to buy what they needed. The villagers had a comfortable life, and their livelihoods were relatively stable and secure.

It is also likely that fish populations upstream of where the reservoir water is released into the Nam Xan River have also been negatively impacted by the changes that have occurred, particularly migratory species that move between the Nam Ngum reservoir and upper parts of the Nam Xan basin.

#### **4.3) Resettled villages**

In the past the people from what are now Nam Leuk village and Thang Deng village both came from the same village – Nam Leuk village. However, the people were scattered in different areas. Therefore, only part of Nam Leuk village was relocated to Thang Deng village, and the rest of the Nam Leuk villagers were consolidated in a new location not far from their old village, north of the dam's reservoir.

## **Nam Leuk Village**

“In the past, it was convenient for us to do agriculture because we had a lot of agriculture land. Even though our village was located in a remote location, the forest was in good condition, and it was easy to hunt. In addition, there were lots of non-timber forest products.”

– Nam Leuk villager, 9/5/2003

Nam Leuk village used to be located near the Nam Leuk reservoir. Now the ethnic Hmong community has been relocated north of the reservoir, as they lost some of their agriculture land to the dam’s reservoir. There are 16 families and 120 people, including 67 women, in the village.

It is clear that after higher authorities relocated the villagers, they have experienced many problems concerning health, food security and education. These are typical of impacts experienced by other villages relocated due to dam construction in Laos (e.g. villages relocated from the Houay Ho dam reservoir area, IRN, 1999).

Since the village was relocated, the villagers do not have enough land for agriculture purposes. They do not have a primary school for their children, who must walk across a mountain to study at the school at Done Hom village, located along the Nam Xan River. In the rainy season it is impossible for the children, particularly young ones, to make the trip across the steep and slippery paths to study.

Villagers are also suffering from a lack of adequate health facilities and services. When villagers get sick, it is very difficult for them to travel to the hospital. There are not any medical practitioners in the community. There has been a huge increase in malaria and other illnesses in the village since it was relocated. Some villagers have died as a result, since they had no money to buy medicines or go to the hospital.

Government officials have come to visit the relocation village, but compensation has been very slow in materializing, or has not come at all. The villagers had to make many requests before the government agreed to provide a small amount of assistance.

The government has provided rice to eat for a three-year period. Each family has received 200-300 kg/month. If families are small, they get 50-100 kg/month. The villagers have not, however, received any money or other material support. Villagers believe that not nearly enough support has been provided considering the serious impacts they have faced.

There have been a lot of changes. At present, the villagers in the community are scattered around, as some families have moved from the relocation site to other areas. Some families have left to work as laborers. Some have not returned at all. This has caused serious problems for the local people in terms of their livelihoods and ways of living. The government has not

compensated the villagers based on their requests. Therefore, people have lost faith and no longer trust the higher authorities.

Villagers have requested that the government undertake the following actions:

- 1) Build a school in the resettlement village where their children can study.
- 2) Provide adequate agricultural land so villagers can raise domestic animals and grow crops.
- 3) Build wells and construct a health clinic to address the health problems of the villagers.
- 4) Provide funding or help villagers build fishponds so locals can raise fish.

### **Thang Deng Village**

“Grandpa [referring to himself] wants to move to another place, if there are relatives there. That is because this new village is difficult. There is not enough land to do agriculture, and the land that is available is not good quality either. Hunger is increasing all the time. Grandpa’s children and grandchildren have gone to Vientiane to work in order to get money to buy rice to help their family.”

– Thang Deng elderly villager, 10/05/2003

Thang Deng village is situated at the upper end of the Nam Leuk catchment, west of the Nam Leuk reservoir. There are people from many ethnic groups in Thang Deng village, but most are ethnic Hmong who were forced to relocate from their old village, Nam Leuk village, near the Nam Leuk reservoir. 16 families moved to Thang Deng village.

Life in the relocation village is much more difficult than before, due to a lack of resettlement planning. The most important thing for people is to have enough rice to eat. But villagers do not have rice to eat from April to October. They are forced to search instead for wild tubers in the forest for their survival. If one sees the people, their problems are obvious from how thin they are. Their bodies are not in good condition. The villagers were promised rice for a three-year period. Each family was supposed to receive 100-200 kg/month, but some months the rice does not arrive, according to what people were promised. The higher authorities have not resolved these problems or implemented appropriate strategies to improve the people’s ways of life. Many families have relocated to other areas, in unorganized ways, since they did not have enough land for agriculture, and there is not enough food to eat. Some have tried to return to live near their old village. Others have stayed in the resettlement area.

Compensation has not been adequate, especially considering the promises made to villagers. They report that they do not have a health clinic, wells or adequate arable land. Villagers are experiencing health problems, like stomach problems, malaria and higher rates of infant mortality as there are no medical personnel in the village, and villagers do not have money to take sick people to the hospital.

EdL claimed that a new report on Thang Deng “will confirm relocated people are satisfied with their move, and have enough to eat, and enough land” and said that villagers have less sickness

(EdL, 2003). However, conversations with villagers at the resettlement site for this study contradict EdL's assurances.

Most of the school-age children do not go to school because their parents do not want to send them to study. Instead, they go with their parents to look for things to eat in the forest or to work in their swiddens and paddy fields. Some families do not have enough money to buy clothes for their children to wear for school. However, the Hmong people study their own language at home, and people in foreign countries send books so they can study Hmong and English languages.

Bonds between most villagers have weakened because now families do not stay in one place on a regular basis. They often leave to look for work or to search for opportunities to live in other places. Many people who remain have resorted to stealing. They steal ducks, chickens, vegetables and other crops from people's fields because they have no money to buy these things. This has caused a lot of confusion and conflicts in the community.

Villagers have requested that the government undertake the following actions:

- 1) Resolve problems related to the livelihoods of the villagers so their lives improve, as was promised by the higher authorities in the past.
- 2) Locate additional land for villagers appropriate for growing paddy rice; and provide them with enough seeds to plant the land they receive.
- 3) Send agriculture officials to the village to teach people how to breed fish or plant fruit trees.
- 4) Send veterinarians to the village to vaccinate domestic animals villagers raise, because each year a large number of animals die from diseases, especially pigs, ducks, chickens, cows and buffaloes.
- 5) Provide more rice for villagers to eat.
- 6) Build a health clinic and wells. There is a basic school in the village, but teaching is not regular, as there is only one teacher, and he is often absent. The school is in poor condition, with bamboo walls and a dirt floor.

#### **4.4) Villages located downstream of the Nam Leuk Dam in the Nam Leuk River basin**

“We get sick every year, but we do not have money to buy medicine or go to the hospital. That is because we do not even have enough rice to eat, and it is difficult to make money. Wet season paddy rice fields are flooded in the rainy season. Before the dam was built, we grew a lot of rice. From selling rice each year we could make enough money to meet daily expenses.”

– Gngang Khua villager, 13/05/2003

There are a number of villages situated in the Nam Leuk basin downstream from where the Nam Leuk reservoir was built. Gngang Khua village is one of those, and is situated adjacent to the Nam Leuk River. Gngang Khua has 67 households, and 280 people, including 160 females. The main occupation of the villagers is growing lowland paddy rice, but they also do some shifting cultivation and fish.



Since the dam was built, their lives have become more difficult as water levels in the Nam Leuk River have been significantly reduced, especially during the dry season. During this time, it is not possible for villagers to traverse the river using boats, which has made their lives more difficult. The water is also poor quality, and the banks of the river have eroded. Growing vegetables along the edge of the river is now more difficult than before, and in some years it cannot be done due to erosion.

In the rainy season villagers reported that it is very difficult to catch fish, and many species of fish have disappeared. The Forestry Department of Lao PDR largely predicted these downstream impacts in 1994 (Baird, 1994), and government authorities promised that they would provide fish cages so villagers could raise fish, but this has not materialized, according to the villagers.

Drinking water is also in short supply because the river water is so low during the dry season, and the banks are steep. It is difficult for villagers to walk up and down the steep banks to get water. During the rainy season, it is not so difficult, but it is not necessary to get water from the river then. Villagers reported that there are not enough wells, and the ones that exist are broken. Note that EdL planned to finish erecting electricity lines in April 2003 to power some of the water supply systems, but it is not clear whether this has been completed to the satisfaction of villagers.

In 2002-2003, government authorities brought electricity into the village, but they did not bring it in for free. In fact, the villagers did not receive any preferential treatment due to the impacts that they have experienced. The people had to pay 260,000 kip (US\$25) per household to be connected to the electricity grid. Some families have not been able to get electricity because they are too poor. Some do not have enough rice to eat, so they certainly cannot afford to install electricity. People cannot hunt like before due to government restrictions, and fishing is no longer productive. This is what local people complain about, and their complaints are becoming stronger by the day. They complain about the government's policies towards the people, which they do not think are appropriate.

Villagers are getting sick more often, with illnesses such as diarrhea, malaria, 'forest fever', 'shaking fever' and ulcers. This, they believe, is because the water quality has declined. There is a lack of efforts to keep the water clean. When people get sick there is no medicine, no health clinic and no medical practitioner in the village. Most of the time people rely on traditional medicines - some people get better, some do not.

Villagers have requested that the government undertake the following actions:

- 1) Resolve the livelihood problems of the local people.
- 2) Provide adequate rice for villagers to eat between May and September, when shortages are most severe. The higher authorities can determine for how many years, but it should be for an appropriate period of time.
- 3) Reduce the cost of installing electricity into the houses of poorer families.
- 4) Drill five wells for use in the dry season.
- 5) Locate and provide villagers with enough land for agricultural purposes.

- 6) Build fish ponds, or provide cages for raising fish, as was promised in the past.
- 7) Provide seeds for the villagers to plant.

### **5) Logging in the Nam Leuk reservoir area**

Villagers living in the vicinity of the Nam Leuk Dam complain about the amount of logging that has been associated with the project, and believe it has been excessive and uncontrolled. For example, excellent quality trees have been cut down, but rather than being reported as being high quality timber, they have often been classified as low quality wood, in order to allow loggers and government officials to make illegal profits, which come at the expense of the forests, Phou Khao Khouay NBCA, and government coffers.

In the future, it is not clear whether these illegal-logging practices will continue, but villagers believe that if the past is any indication of the future, then the handling of logging activities will be poor in the future. Villagers who have been impacted by the project have received no benefits from these activities. Many villagers wonder why powerful people and government officials are allowed to personally profit from destroying large areas of good quality forests, while poor villagers are told not to cut even small trees in the forest for subsistence purposes.

### **6) Conclusions**

The experiences with the Nam Leuk Dam are emblematic of the problems with other hydropower projects in Laos, and also globally, particularly where villagers have not participated in the planning of the project and have not been involved in developing compensation or mitigation plans. The project has had a very negative impact on the environment as well as local livelihoods.

People affected by the reservoir, as well as those who live downstream from the dam along the Nam Xan and the Nam Leuk, have been severely impacted by the project. The lives of people living downstream from the dam have become more difficult because they have lost access to drinking water and to water for agriculture. Villagers are also faced with more serious problems in relation to boat transportation. In addition, they report that many species of fish have disappeared from the Nam Leuk and Nam Xan Rivers because water quality and hydrological flows have been altered. The natural ecology of the Nam Leuk and Nam Xan Rivers has been badly impacted. For those people who have been affected by the creation of the reservoir, and have been either forced to relocate or have lost agricultural land to the project, the situation continues to be problematic. Compensation provided to villagers has been limited and inadequate, and the health, food security and education of local people have declined. Agricultural land and livelihoods support has not adequately materialized. The situation for people affected by the Nam Leuk Dam is dire.

Villagers throughout the area affected by Nam Leuk have made specific requests to the government to alleviate the suffering they have faced since the dam was built. Many of these have been listed in this report. However, the government has failed to anticipate and successfully mitigate the project's impacts and has not implemented an effective monitoring program to

ensure that the project does not have ongoing negative impacts on villagers and ecosystems. Local people want and need immediate help to solve their problems.

Unfortunately, villagers are very cynical about the situation, as they have seen that the government and those who paid for the dam, including the ADB and the Japanese government, are not serious about addressing the problems facing the poor as a result of the construction of the Nam Leuk Dam. They can only hope that their voices are heard in the future.

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