

# Hydropower Development and its Impact on Local Communities in Laos: A Case Study of the Nam Ou 2 Project

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## Abstract

This research assesses both the positive and negative outcomes of hydroelectric plant construction for local communities in Laos. Specifically, it compares the condition of local livelihoods before and after the relocation and consolidation of two villages in Ngoi District, Luang Prabang province due to the Nam Ou 2 Hydropower Development Project. Fieldwork was carried out twice; once from August to September 2018 to interview resettled villagers and once in May 2019 to interview local government officials in charge of the resettlement. Data from interviews with 95 household heads (13 female) in the village and data from the Social and Environmental Impact Assessment (SEIA) demonstrate that the relocation has currently led to more disadvantages than benefits. Although there is a range of outcomes across specific villagers and family units, most have experienced hardships such as significantly greater travel time to their farmlands. It also found that the average annual income has decreased 25% compared to that in their former villages. Most importantly, the article confirms typical resettlement issues, including verbal promises made by the project to address expected social and economic difficulties which have not been implemented, causing a significant lack of trust in the local government and dissatisfaction in the local community.

**Keywords:** Economic development, hydropower, impact, Laos, local livelihood change, Nam Ou River

## Introduction

A huge and rapid change is happening in Laos: large scale development projects. Hydropower development, a high speed railway under China's Belt and Road Initiative, a highway project from Laos to a Vietnamese port, and many more projects have been constructed or are planned for the coming years. While macro-economic growth in Laos has been strong, will local Lao people be able to handle such dramatic socioeconomic and environmental transformations? Hydropower development has contributed to the economic development of Laos. However, there needs to be more detailed investigation of the positive and negative impacts for local communities.

'Globally, dams have been built to produce power and electricity since the industrial revolution. The first use of dams for hydropower was around 1890. In 2002, hydropower provides approximately 19 percent of the world's total electricity supply and is used in over 150 countries' (Altinbilek, 2002: 16). In Laos, the first dams were Nam

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Dong in Luang Prabang province and Xe La Bam in Champasak province. These were only small scale dams with installed capacity of 1 and 5 megawatts (MW), respectively and started operation in 1970. The first large scale dam of the country is Nam Ngum 1 Dam which started operation in 1971 with the installed capacity of 155 MW and generation capacity of 1,160 gigawatts (GWh). There were 64 power generation plants in 2018, with a total installed capacity of 7,374 MW and generation capacity of 38,261 GWh. Hydropower contributes to 74% of total power use in Laos, while the remaining sources include thermal (26%), solar (0.38%), and biomass (0.34%) (EDL, 2019). Approximately 90% of the hydropower produced in Laos is exported to neighboring countries as part of Laos' strategy of becoming the "Battery of ASEAN". Laos has supplied significant amounts of electricity to countries across mainland Southeast Asia and plans to continue to do so. By 2020, Laos will have provided 9,000 MW to Thailand, 5,000 MW to Vietnam, 300 MW to Malaysia, 200 MW to Cambodia, 100 MW to Myanmar<sup>3</sup>. However, the Prime Minister of Laos, Thongloun Sisoulith, said at the World Economic Forum on ASEAN 2018 that Laos can no longer become the battery of Asia because the country's capacity to develop electricity and meet the demand of ASEAN countries is limited. He also noted that after the collapse of Xe Pian Xe Namnoy dam in July 2018, Laos will have to continue considering hydropower production along with other options of renewable and clean energy such as solar and wind. However, the country should ensure that the hydropower production process is based on a well-studied and well-planned approach complying with international standards, scientific information and experts' views. (Abunales, 2018).

There has been a significant amount of research on the impact that hydropower development has had on the livelihoods of local people in the Mekong Region, including Laos. Matthews (2012:403), in his study of water grabbing in the Mekong basin, writes that "Although the government of Laos has promoted hydropower's potential income as a step towards bringing Lao PDR out of poverty, there are concerns whether the money generated from hydropower electricity sales will actually reach the local economy and address social priorities". Furthermore, he argued that in accordance with hydropower development in Laos, the winners are powerful water grabbing actors: the government of Laos (provincial and central) and Lao elites. The other groups of winners are powerful actors from Thailand: the Electricity Generating Authority of Thailand (EGAT), independent power producers (IPPs), investors, and developers. On the other hand, the environment, biodiversity, and society (as reflected in the livelihoods and culture of natural resource dependent groups and vulnerable people) are losers of hydropower development in the Mekong River basin.

In Laos, there is one hydropower project – the Nam Theun 2 Dam (NT2) – that is viewed as the most successful project and has been promoted as the model for hydropower development by the government of Laos because it meets international standards. However, as Shoemaker and Robichaud (2018: 8) noted 'NT2 triggered all of the Bank's safeguard policies –guidelines and requirements designed to ensure that its projects are implemented with high standards and do not cause net social and environmental damage. At the time, it was widely debated whether fulfillment of the Bank's safeguards was realistic given the political economy that existed in Laos. The

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<sup>3</sup> Speech of Mr. Khammany Inthirath, Minister of Energy and Mines at the 6th General Meeting Session 8th of the National Assembly of Laos, Vientiane Capital; November 26, 2018: unpublished.

findings of this book suggest that it was not'. Lao researchers, with whom the first author of this paper had discussions, expressed that NT2 might be considered a good project from an environmental management perspective because it significantly funded environmental protection, such as national protected areas. However, in terms of resettled people's livelihood development, it still has a lot of shortcomings.

There has been a significant amount of research on hydropower development-induced resettlement in Southern Laos (Baird et al. 2015; Green and Baird 2016; Shoemaker and Robichaud 2018; Evrard and Goudineau 2004; Baird and Shoemaker 2007). Such research has focused on internal resettlement via the government's resettlement justifications and instruments in the country, distinguishing between voluntary and involuntary resettlement.

Delang and Toro (2011) found that communities relocated due to construction of Houy Ho and Xe Katam dams, (completed in 1997 and 2009, respectively) of Southern Laos, encountered three main issues. First, there was uncertainty and a lack of information on when the relocation will take place and the future compensation amount. Second, there was a lack of suitable agricultural land in the relocated village and resettled villagers also faced land conflicts with neighboring host villagers. Third, resettled villagers have attempted to return to work at their old farmlands and let their children stay at the relocated village by themselves.

Katus and Suhardiman (2016) examine the transition of four villages into one resettled village in Nam Gnouang River of Theun Hinboun Power Project in 2011, central Laos. The study found that the connection between village administrative committees and the local government makes resettlement easier and that those villagers who have such links to political power feel settled in their new village. The study also suggests that different villages have different advantages based on geography (i.e. the distance from new village to their former villages). This means the ability and expenditure on travelling from resettled village to their prior villages differs accordingly based on the location of the resettled community.

To date, however, there has not been any specific research conducted on the livelihood change of local communities relocated in the area of Nam Ou basin. Thus, this research aims to assess the livelihood of relocated villages of the Nam Ou 2 Dam construction, which is one of the dams in the first phase of constructing seven dams on the Nam Ou River. In this area, we believe that the geography is different from that of central and southern parts of Laos and thus would have different impacts from hydropower development. Compared to the South, people's farmlands in the North are usually in hilly areas and are not easily inundated.

This paper is the assessment of the livelihood conditions of villagers in the resettled Mai PhoneKham Village. It is a village that was combined from two villages; HatPhang and HatKhip. The new village was given the name Mai PhoneKham by the project, which means "the new village of golden hill". However, villagers prefer to call the village by its old name, "HatKhip". Thus, to be consistent with the villagers' usage but also to be clear, the resettled village will be referred to as New HatKhip and the village prior to relocation as Old HatKhip. New HatKhip Village is located near Pak Nga village (a village located by the Route 13 North, see the map below) and is approximately five kilometers downstream of the Nam Ou 2 Dam.

This paper argues that the resettlement of the New HatKhip Village failed to meet the Lao government's own objective for the livelihoods of people resettled due to hydropower to be better than before resettlement<sup>4</sup>. This research shows that the average household income of the community has decreased by approximately 25% from that prior to the resettlement. The factors are: 1) no arable lands in the relocated village, 2) no available food sources, 3) the need to return to their fields in the former villages, which increases costs for them. In addition, this article confirms typical resettlement-related issues, such as verbal promises made by the project to address expected social and economic difficulties having not been implemented, causing a significant lack of trust in the local government and dissatisfaction in the local community.

### **Profile of Nam Ou 2 hydropower development project**

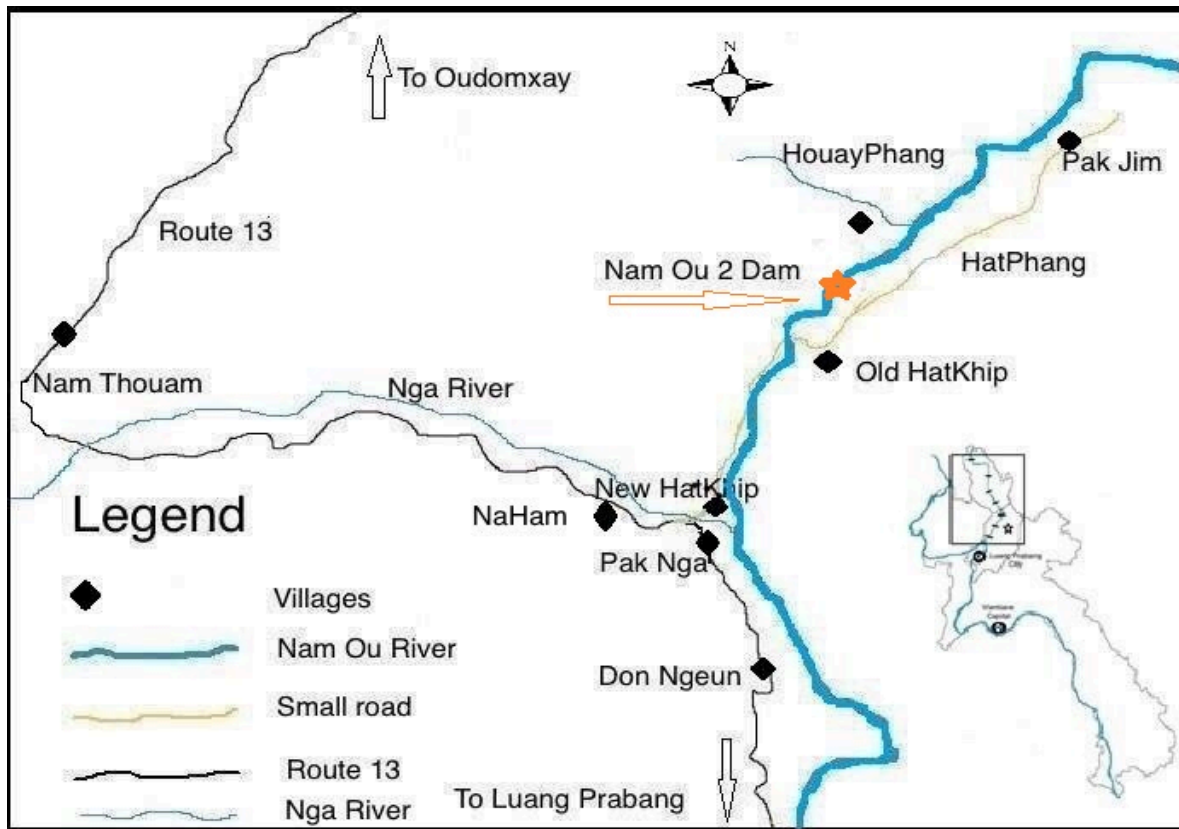
The dam construction started in December 2012 with 120 MW of installed capacity and 546 GWh/year of generation capacity. The construction was completed and started to generate electricity at the end of 2016. The dam is located 53 km north of Luang Prabang city. The project was developed in the form of Build-Own-Operate-Transfer with a 29-year concession. A Chinese company, Sinohydro (currently POWERCHINA), has 90% of the share and a Lao state-owned enterprise, Electricite du Laos-Generation (EDL-Gen); a subsidiary of EDL, has the remaining 10%.

There are seven electricity dams on the Nam Ou River (see in the map in figure 1). All of them were developed by Sinohydro. These seven dams were built in two phases; Phase 1 consists of the Nam Ou Dams 2, 5, and 6, which was completed in 2016. Phase 2 consists of the Nam Ou Dams 1, 3, 4, and 7, completed in 2019. The Nam Ou 2 Dam is 48 meters high and has a crest length of 300 meters. The Nam Ou 2 hydropower project affected 24 villages. According to Earth Systems Lao, Old HatKhip Village was affected by construction. HatPhang was affected by high levels of inundation and construction. Additionally, there were two villages affected by medium levels of inundation, two villages affected by low levels of inundation, and the remaining 17 villages only experienced impacts upon land and other assets. (Earth Systems Lao, 2011:11, unpublished). Old HatKhip and HatPhang Villages had larger numbers of households resettled. Additionally, they were resettled into one village in June 2014, New HatKhip Village, as the government policy was to merge small villages to create a focal site. That is why New HatKhip Village was chosen as a study site as both former villages (HatPhang and Old HatKhip) had a significant number of total households before and after the merger.

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<sup>4</sup> This is stipulated by the government in Decree No. 192/PM dated July 7, 2005 and Decree No.84; dated April 05, 2016 Article 15 that "The level of livelihood conditions of the affected households must be upgraded or at least to be the same as original level".

**Figure 1:** Location of the Seven Dams on the Nam Ou River



Source: created by authors

## Materials and Methods

The first two months of fieldwork research were conducted by the first author from August to September 2018 to interview, interact with and observe the livelihood changes of the village. The data of average income from interviews with 95 household heads (13 are female) and occasional interactions with New HatKhip villagers was used to compare with the data from the social and environmental impact assessment (SEIA) that was gathered by the project prior to the dam construction.

The second period of field research was also conducted by the first author in May 2019 to interview government officials at the Department of Energy and Mines of Luang Prabang Province, the governmental agency in charge of the resettlement work. Additionally, secondary data was obtained from literature. The research utilizes both quantitative and qualitative methods to descriptively analyze the livelihood conditions of the resettled villagers.

## Results

### Demographics of the village

The historical records of the two former villages differ greatly. In Old HatKhip, documents from the abbot of the village temple indicate a founding date 467 years ago.

At that time, villagers moved from the Lamphun area of Lanna Kingdom (Thailand) with Laos' former King Sethathirath. Eventually they were joined by forest-and mountain-dwelling ethnic groups like the Khmu, due to internal resettlement policies of the government of Laos.

The elderly villagers of HatPhang only trace their history to the 1950s, when there were 15 ethnic Lao families in the village. The village doubled in the early 1970s as more households moved in due to government resettlement policies which existed through the late 1970s. HatPhang had a final increase to its current size in 2005 to 2006 when ethnic Khmu households from villages of KhoneKerng and Mok Lek (previously existed villages located approximately 15 and 20 kilometers respectively from New HatKhip Village) relocated there.

Resettlement policies therefore impacted both former villages. The government justified resettlement for five reasons: opium eradication, security concerns, access and service delivery (including access to roads and electricity), cultural integration and nation-building, and swidden agriculture reduction. They used three key policy instruments: focal sites, village consolidation, and land and forest allocation (see Evrard and Goudineau 2004; Baird and Shoemaker 2005; 2007). Development was supposed to be brought to mountainous areas; however, practically the move of mountain-dwelling or remote residents to lowland areas was less expensive and more efficient for the government. Thus, resettlement has been popular in the country.

Before relocation, HatPhang village had 28 Khmu families, 43 Lao families, and 6 mixed families with total number of 71 households. A mixed family means a family that the husband or wife is Khmu or Lao ethnic. Old HatKhip Village had 23 Khmu families and 42 Lao families. There was no mixed family in the village. The number of households in Old HatKhip village before relocation was 65. In the current relocated village (New HatKhip) as of September 2018, there are 59 Khmu families and 103 Lao families with total number of 162 households; 748 people; 370 females. The number of mixed families in the relocated village is unknown.

## Housing

In the former villages HatPhang and Old HatKhip, the project categorized the houses into three types: A, B, and C. Of these three, type C is considered to be the best and the ideal house type in the area.

| Type of House  | Old HatKhip | HatPhang |
|--|-------------|----------|
| Type A houses, were the houses with a temporary structure: walls were made with bamboo and the roofs were made with hay.       | 34          | 50       |
| Type B houses were the houses with a semi-temporary structure: walls were made with wood and roofed with corrugated zinc.      | 25          | 19       |
| Type C houses were the house with a permanent structure: the walls were bricks and cement, and the roofs were made with tiles. | 6           | 2        |
| Total  | 65          | 71       |

**Source:** Nam Ou Hydropower Development Project and EDL, 2012

The project built new houses in a style between B and C (as they have wooden walls and tile roof, see Figure 2 below) from September 2013 to April 2014 and estimated the cost at 85 million LAK. The houses were built in the New HatKhip Village (20°20′57.63″ N 102°25′23.57″ E) with the total area of 54,000 m<sup>2</sup>. The new house was two-story wooden walls and tile roof. The first floor was open space. All relocated villagers received the same type of house regardless of their prior house in the former village. The new houses had improvements over the Type A homes in the former villages but there were significant problems.

**Figure 2:** A house that was built and offered from the project before being renovated



**Photo:** taken by the first author in August, 2018

One house has three rooms regardless of family size. The land area for the house is 20m x 20m, which was smaller than the typical land area in the former villages. Before relocation, the project promised that every house would have a fence, cement floor, and the interior ceiling but these verbal commitments were not fulfilled.

At the time of relocation, the project gave each household two million LAK for transportation and two million LAK for house renovation. Renovations generally included converting the first floor open space into a living area and installing kitchens which were not originally included. Wood had to be replaced because the original wood was not of high quality, some of it was young and it warped, creating gaps. Other wood became easily infested by termites. The average cost of renovations per household was 35.41 million LAK, including labor, but there was a wide range of costs from 0 to 100 million LAK. The range represented zero costs for those who completed their own renovation using wood from nearby forests, often with help from family and friends

during the typical quiet period from work of December to January. Labor costs, if included, would have raised the overall costs much more as a day's labor is 50,000 LAK locally. When interviewed, the villagers said they did not track labor costs and could not estimate.

The villagers also received grants of money to replace their cash crops and agricultural trees. This money was used to fund house renovations as the 4 million LAK designated cash was not enough. The first author asked why the villagers did not ask the project to fix or renovate the houses on their behalf. The villagers stated they asked the project to provide both the first and second floor for living. However, the project did not agree because it would cost too much money.

One of the consequences of issues with new homes is that some of the villagers have built small huts (see figure 3) in the upstream area near the reservoir and the site of their former villages and farm lands. The project and the local authorities consider this to be illegal. Around 20 households have essentially returned. These huts in the Lao language are called "*Sa nam* (ສະນັງ)". By building small huts near their farms, villagers do not have to commute every day to the relocated village, which can reduce their costs. Plus, they can closely take care of their cattle and poultry. However, this raises the question of the purpose of the new houses in the relocated village when some villagers choose not to live there.

A common problem occurring with resettlement is the location itself. According to the original resettlement plan, the new location was selected in February 2012. The process was that project staff, EDL employees, Ngoi District committee members and leaders of the two villages surveyed four sites. They ultimately agreed the final location. It was selected because it was near the national Route 13 North and Pak Nga village, where there are secondary schools. It was an easy location for commuting due to a new bridge which was also constructed to connect the new village site and Route 13 North.

**Figure 3** -Small huts that villagers built in upstream near their agricultural lands



**Photo:** taken by the first author in May, 2019.

However, there were also differing opinions within the stakeholders, as the district committee has strong beliefs in the value of urbanizing two villages. But many villagers simply thought any new location would be better because of the promises made to improve their livelihoods.

During the interviews, an interviewee shared his opinion that if they could choose, they would choose to move to an area near the former village; just on the upper location of the mountain. He asserted that the area is steep but the project



can make it flat. Often times, affected villagers are not satisfied with the new location simply because it is hard for them to find food. This issue is not only in Laos. A study in Ghana also found the same result. As stated by an interviewee in Ghana, “I would have preferred being relocated into a squatter house close to the river to enable me to have easy access to the river than living in plush houses located far away from the river” (Obour, Owusu, Agyeman, Ahenkan and Madrid, 2015:294). During the interaction and interviews, some villagers expressed they were crying before the relocation because they did not want to leave their homes and they felt uncertain about their future. The majority of resettlement in Laos is based on “push factors” rather than “pull factors” meaning the villagers were forced to evacuate rather than being encouraged to resettle voluntarily. Baird and Shoemaker (2007:881) would term them as ‘villager-initiated’ and ‘externally-initiated’ or ‘coerced’ resettlement.

### **Agricultural land and farming condition**

In the relocated village, villagers have not received local agricultural lands they claim were promised to them four years ago. As a result, they travel daily to their former villages to farm and raise livestock. Those who do not have vehicles walk to their farmland which takes two hours if their farm was in Old HatKhip; they begin their walk at 6:00 and complete their walk back home at 18:00. If the farm was in HatPhang the walking time is three hours. The cost of commuting is significant. The cost of a liter of gasoline is 10,000 LAK which can be used for two days (two round trips) by motorcycle. During the harvest time, people hire a truck driver to carry their rice and other cash crops to the relocated village for 8,000 LAK per one sack of rice. Alternatively, some people rent rain-fed farmlands for rice plantations in Pak Nga village. A 2 hectare plot rents for 1.5 or 2 million LAK and that can produce 2 tons of rice.

The villagers said that the Ngoi district committee asked each household to pay 45,000 LAK to the district, after relocation, and they would receive a plot of agricultural land per household in the relocated village. The villagers stated each household gave 45,000 LAK but no agricultural land was provided to them. The report of Prime Minister’s Office’s Inspection and Assessment Department stated the district of Muang Ngoi would create a village fund specifically due to the lack of appropriate land in the relocated village. Money would be put into the fund because the government could not find appropriate land for the villagers. However, villagers said there is no village fund and they do not know what happened to their payments.

There are many practical implications from the lack of dedicated agricultural space which has led to the villagers commuting back to their original sites. Animals have insufficient space to roam freely so they are more likely to catch diseases, particularly from livestock introduced from other villages. Some animals have been stolen. Although theft can also be a problem in the original sites, the household heads who commute there often sleep overnight to protect livestock.

Although there have been serious hardships on the relocated villagers related to the lack of agricultural lands, it needs to be mentioned that there would be notable environmental consequences of granting those lands. Interviews indicated that each household could have been compensated up to 4.5 hectares of agricultural land, most of which would have been swidden cultivation (*hai*) for growing rice and other cash crops plantation (*Suan*) e.g. banana, orange, etc. The average area of each land is 1.5 hectare for

*hai* and 0.5 hectare for *Suan*. Hundreds of hectares of forest near the relocated village would be degraded if the lands had been granted.

### **Food consumption**

The sourcing of food has been negatively impacted in multiple ways. The dam has created an unstable water level and impacted fishing, particularly as the relocated village is downstream of the dam. An earlier forecast estimated that 66 percent of the fish in Nam Ou River would decrease due to the seven Nam Ou hydropower cascades (Meynell, 2016). Villagers now buy more pork or beef from merchants who sell meat daily in the new village. There has also been an impact on non-timber forest products (NTFPs). Before relocation, a variety of edible NTFPs were available from the local forest: bamboo shoots, bamboo grubs, sugar palm, wild animals and birds, naturally growing vegetables, etc. Even non-edible NTFPs could be sold for extra income: cardamom, broom grass, incense glue bark, paper mulberry, etc. All NTFPs are virtually non-existent in the new village. Similarly, firewood now needs to be carried from areas near the former villages by a two-wheeled modified tractor (*lod thai* or *lod torktork*) that would be hired for 50,000 to 60,000 LAK per trip. Villagers are unable to weigh the wood by kilograms or tons so they load as much firewood as possible onto the tractor and pay the driver for each load. Lastly, the new village lacks riverside gardens as the river's edge is owned by the Pak Nga villagers who lived there before the relocated village came into existence. Any other available food source is accessed by three parties: the new villagers, Pak Nga residents and villagers from a third nearby village, Na Ham (see the map above). The outcome is much greater costs for the relocated villagers as they now have to pay for items they used to plant or collect by themselves.

### **Economic activities**

The villagers said that one of the economic benefits was the opportunity to give up swidden cultivation and obtain better jobs provided by the project. In 2014, the district and provincial authorities even came to survey the villages on potential new occupations. The project said they would hire people from the impacted villages. Earth Systems Lao estimated 1,450 workers would be hired by the project throughout the construction period. However, no significant change had occurred and the villagers continued to practice swidden cultivation. Many construction workers were hired from other places. Only 17 out of 95 household heads interviewed said they or their family members have/had been employed by the project.

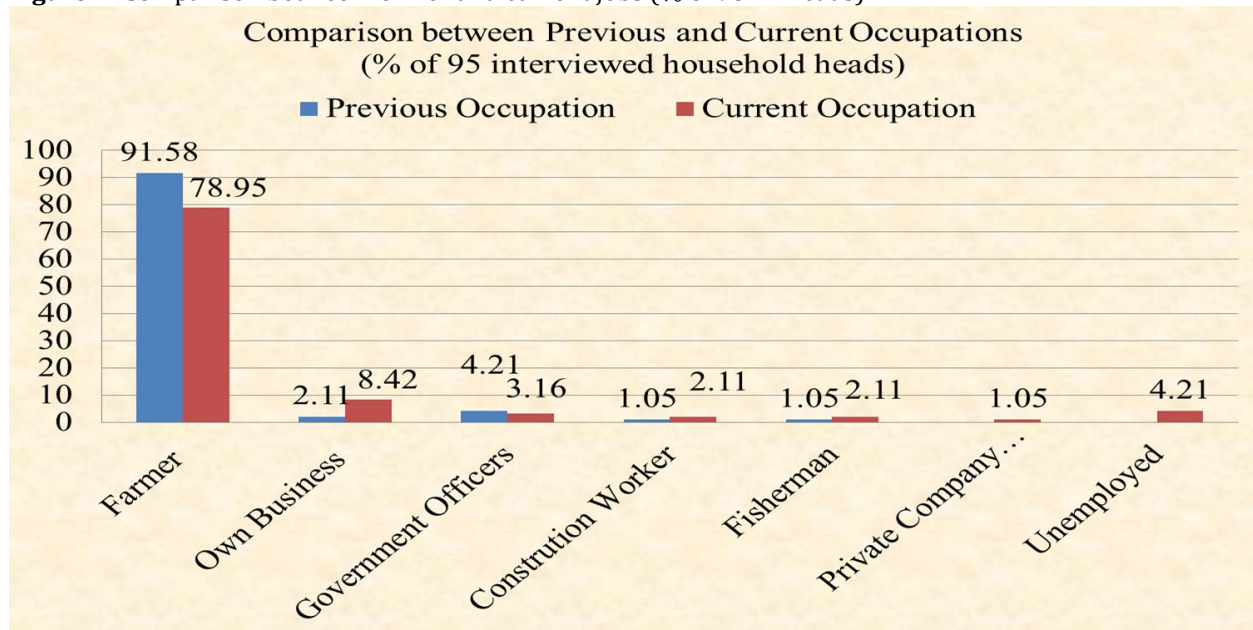
In the former villages, approximately 92 percent of the villagers were farmers. The type of farming is rain-fed farming of dry rice; fields were mostly on the mountains or foot hills so they were not inundated. The second most common occupation of villagers was local government official (4.21 percent of the 95 household heads interviewed). They work for the government as primary school teachers and military officers. The third ranking occupation was being a small business owner including retail shops, weaving, etc.

In the relocated village, the change in the number of farmers is not so significant; villagers continue to farm even after they have moved to the new village but they typically commute back to the former village location. However, in the new village, other jobs have been available. For example, people have become employees of private companies. In

particular, younger workers can commute to factories nearby. They can also deliver water. (In Laos, tap water is not drinkable so they usually buy 20 liter bottles of water for 4,000 LAK and this is delivered.) Some people have also become employed as carpenters.

Generally, jobs are available for the younger generation. However, for older people, there are not many choices other than continuing to practice swidden cultivation. Unfortunately, it has now become too difficult for them to walk to their former villages to do farming and they are now unemployed. 4.21 percent of the villagers interviewed said they are not doing any work currently (see figure 4). They only rely on their children with whom they live. Generally, older people take care of the houses and their grandchildren, while their children go to work. Since the occupations have not changed dramatically, the sources of income have remained similar between former and relocated villages; although as noted, their expenditures have increased.

**Figure 4:** Comparison between former and current jobs (% of 95 hh heads)



Source: authors

### Accesses to public services in the relocated village

**Quality of hospital/health services:** The project provided a new hospital which was staffed with two nurses at the time of the field survey. There was no hospital in the former village. The nurses treat basic ailments but send patients with more severe cases to larger hospitals in the city of Luang Prabang, which is much closer to the relocated village than the former villages.

**Quality of school:** The relocated village has a primary school. In addition, it is near Pak Nga secondary schools. The project has provided study and sports equipment/tools, and a drinking water cooler to the village primary school. There is also a kindergarten in the relocated village. It is more convenient now for children to attend school.

**Electricity usage:** In both former villages HatPhang and Old HatKhip, electricity was available since 2011. In the former villages, there was one transmission line but in the new village there are two lines so electricity is more stable and there are less black-

out times. People said electricity costs are higher even though they are using the same number of electronic devices such as refrigerators, televisions, etc. There may be a case that they are using more electricity as the internet connection is now available. Additionally, from the interview questionnaires with the villagers, we found that 15 households bought other electric devices (e.g., washing machine and refrigerator) after moving to the new village.

**Water supply:** In the former villages, people used natural spring water for drinking, cooking etc., and they collected it from the communal taps near their homes. In the relocated village, the project constructed a water supply infrastructure for the village. There is a water pipe that draws water from a stream in the area of HouayPhang village and delivers to each household's tap directly. Villagers pay monthly water supply fees for 5,000 LAK per household. However, after two years, the infrastructure no longer worked. There are periods from for 4 to 5 months when villagers must carry water from streams nearby. During the remaining months of the rainy season, they collect water from the rain. Although a tap in each house was meant to be an improvement, the broken water system makes it meaningless. The village asked the project to fix the water infrastructure but it was not addressed and was handed over to the village to fix at the two-year handover in 2016.

**Condition of telecommunication, road connection, and market access:** Before relocation, mobile phones could be used in the former villages. However, there are more choices of telecommunication networks in the relocated village and the signal is better than in the past. In the relocated village, the roads are well connected to other areas. Villagers can travel easily to big cities such as Luang Prabang and the Nam Thouam area (a development region affiliated with Nam Bak district) for shopping or, in a few cases, for trade. Market access of the villagers has become better, but ironically they do not have anything to trade with others. Improved access to markets alone does not push resettled villagers to better livelihood standards. As Sayatham and Suhardiman put it 'We show that having access to markets and services is not always linked to greater economic opportunities, or increases in rural households' ability to rise above the poverty threshold'(2015:18).

In New HatKhip Village, villagers said that their improved access is less meaningful to them since they are not traders or merchants; only buyers. However, the authors observed that villagers are trading forest products they collect from the prior locations to traders who come to the relocated village site; therefore, the villagers may be benefiting from improved access into their location. There are now new bridges and roads connecting New HatKhip Village to other city which is an improvement. However, some improvements are still needed. The small streets/pathways inside the New HatKhip have not been asphalted as promised before relocation. Also, the roads to the former villages are not being maintained which is impacting those who commute back to them for farming.

### **Household income**

According to the data from the project's SEIA, the average annual household cash income for 24 villages in the Nam Ou 2 dam area before relocation range from approximately 6.8 million LAK (HouayHang) to 33.8 million LAK ( Old HatKhip) with an average of 18.7 million LAK. Per capita annual income ranges from approximately 1

million LAK to 7.5 million LAK. HatPhang's per capita annual income was 1.9 million LAK (62 households interviewed) while Old HatKhip's was 7.5 million LAK (35 households interviewed) (Earth Systems Lao, 2011:4-28).

Comparing the household income of the former villages and the relocated village, the SEIA conducted by the Earth Systems Lao shows that the average household income was 33.8 million LAK for Old HatKhip Village and 8.9 million LAK for HatPhang Village (Earth Systems Lao, 2011:4-28). When the per household income for each village is multiplied by the total number of households in each village (58 in Old HatKhip and 62 in HatPhang), the final combined total, weighted by village, is 2,521,517,506 LAK. This figure is divided by 120 which is the number of households of the two villages combined, equaling 21,012,646 LAK as the weighted average before the relocation. When taking the consumer price index (CPI) into account, 21,012,646 become 25,176,082 in fiscal year 2017-2018 which is the time of this field work.<sup>5</sup> Figure 4 shows the change of household average income per year of the two former villages compared with the new relocated village.

<sup>5</sup> The calculation below shows where the percentage of decrease in average household income has been obtained taking Consumer Price Index or inflation into consideration.

$$\frac{33,872,457 \times 58 + 8,982,500 \times 128.8}{120} = 21,012,646$$

$$\bullet \frac{21,012,646 \times 128.8}{107.5} = 25,176,082$$

= 25,176,082 (2011 income worth in 2017-2018)

25,176,082 is the income in 2011

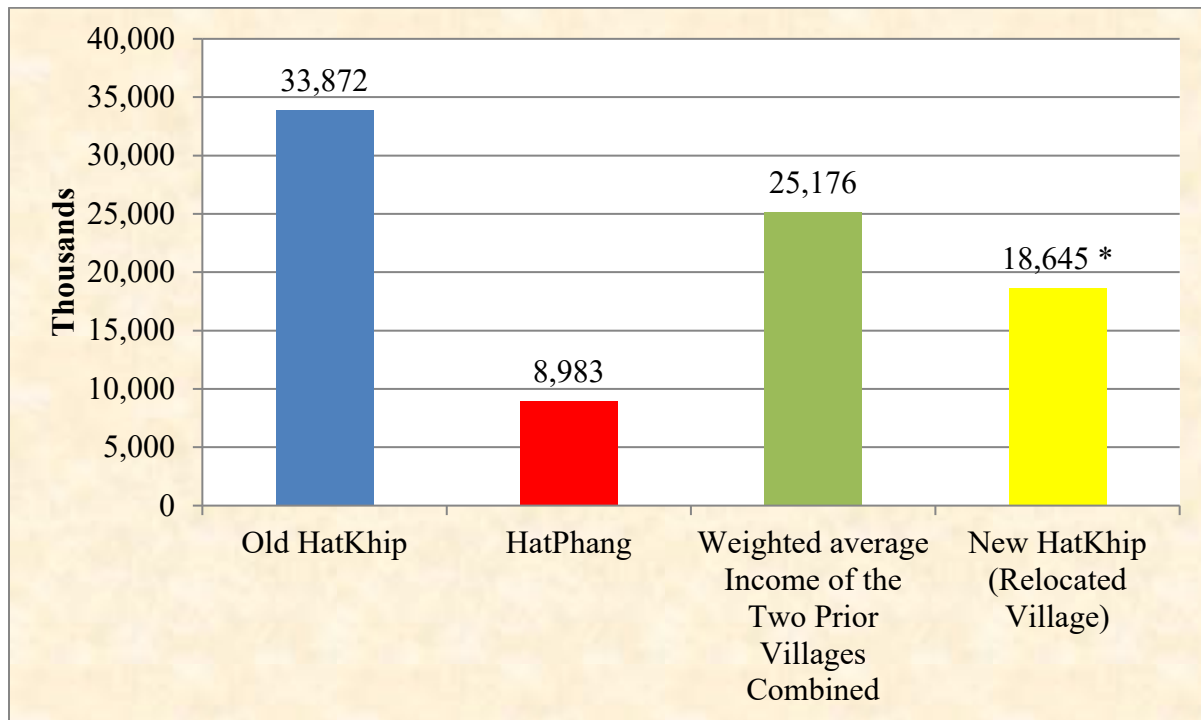
- 58 is the total household number of Old HatKhip during the time of feasibility study
- 120 is the total household number of Old HatKhip and HatPhang during the time of feasibility study
- 128.8 is the Consumer Price Index (CPI) in 2017-2018 (2010 is the base year, World Bank)
- 107.5 is the Consumer Price Index (CPI) in 2010-2011 (2010 is the base year, World Bank)
- Purchasing power
- 18,645,347 - 25,176,082
- = -6,530,735 (change of income in 2017-2018)

Change in percent

$$-6,530,735 / 25,176,082$$

= 0.25 (-25%) average income in the relocated village is around 25% less than that of the former villages

**Figure 4:** Weighted average household income of the former villages and 95 interviewed household heads in the relocated village (LAK)



**Source:** created by authors with data from Earth Systems Lao's Social and Environmental Impact Assessment (SEIA) 2011, and \* result from interviews.

Based on the input of the 95 heads of household (13 women), the average annual household income in New HatKhip has decreased by 25% compared to the weighted average of the two villages prior to the relocation as captured by 2011 SEIA data (aged to 2017-2018 using CPI.) This figure is consistent with overall comments from interviewees that 86% of household heads said their income has decreased with only 10% stating it was unchanged and 4% indicating it increased. The 25% figure also is valid considering the many increased costs this research uncovered which had not been addressed by the project (even though general occupation-related income only decreased slightly in some cases):

- unplanned renovation and rebuilding costs for the new home due to construction issues
- new commuting costs to continue farming at prior locations (plus hut costs) or new rental costs due to lack of available local land
- greater costs of getting products to market
- replacing unavailable locally-sourced food with food purchased from others
- a lack of local non-timber forest products - lower income from selling non-edible items and inability to find edible items
- additional costs for water, electricity and wood

### **Participation in decision-making**

Every hydropower development project in Laos is obliged to do a feasibility study and social and environmental impact assessment. Nam Ou 2 hydropower development project was no exception. During these stages, meetings and public consultation with villagers were implemented. Every household head was required to participate and announcements came from the village office.

During interviews with the household heads, the first author asked them the reasons why they participated in the meetings with the project and the local government. This question meant to assess whether the villagers participated in the public consultation willingly or involuntarily. 83% of respondents said they joined the meetings because they were told to do so. This implies that participation is an obligation rather than a choice and most of the time, not meaningful. In research on public participation in other areas of Laos, Mirumachi and Torriti (2012:130) write that 'Local communities were involved in the public participation procedure merely out of pressure by governments and development institutions'. For this project, around 61% (58 people) of the household heads said they expressed their thoughts and opinions during the meetings. Furthermore, approximately 32% of the interviewees believed their opinions were meaningful while around 47% of them said they do not know.

The culture in Laos supports meetings being obligatory and the political power connection between village leaders and government officials is always important. The dam development project was considered essential with wide public participation and consultation but limited feedback. The villagers of New HatKhip stated any household heads would be fined 50,000 LAK for not attending. Moreover, in the Nam Ou 2 Dam case, some interviewees indicated that they limited their feedback because they felt insulted by the Muang Ngo District mayor who called them lazy during a meeting. He said the villagers only wait for grants from the Chinese (i.e. the project). They believed none of their requests would be implemented so did not care.

### **Compensation negotiation**

The price for compensation is already decided by the provincial authorities<sup>6</sup>. However, the province's methodology for the unit price of lost cash crops and agricultural trees was ambiguous. Regarding compensation, Mirumachi and Torriti (2012:129) noted that 'the monetary assessment of the resettlement was estimated based on an ad hoc available price for resettlement and not on the non-market costs of resettling that include the willingness to accept of locals, which could be informed through public involvement'. Since the price for cash crops and agricultural trees such as orange, banana, coconut trees, as well as the agricultural lands, etc., had been decided by the province, villagers could not ask for more. From our observation and discussions with affected villagers of Nam Ou 2 and Nam Ou 1 dams, we can conclude that compensation for resettlement due to development projects in Laos varies accordingly to the local authorities and affected village committees regardless of the development project scale. This means the local authorities' efforts and resettled villagers' solidarity to accept the compensation or not

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<sup>6</sup> Stipulated in Decisions of Luang Prabang Province Governor on Acceptance of Unit Price of Compensation for Nam Ou 2 Hydropower Project Affected People number 316/Governor-LPB, dated June 16, 2012.

or to negotiate against the project. However, from the villagers' point of views, most of the times local authorities do not appear to stand with the villagers. In addition, villagers themselves do not appear to negotiate with the project in coordinated manner.

For land compensation, villagers said they were promised before relocation that they would be compensated with new land in New HatKhip Village. Yet, it seems they could not negotiate since the local government insisted that the land belongs to the state. The message was mixed because they also promised before relocation that agricultural land would be compensated in the New HatKhip Village and was also stipulated in documented Decisions of the Luang Prabang Province Governor (which subsequently did not occur). Even though affected villagers could not negotiate to receive compensation for land and other assets, they were satisfied with the cash crops and agricultural trees compensation although there continued to be inconsistency between the value of agricultural trees and agricultural lands. For example, in case of a teak forest, villagers would receive only compensation for teak wood. The land of the teak forest was not compensated. Not fully compensating for the land is indeed illegal, but villagers have no power to fight for their rights and the civil rights movement at the grassroots level is weak.

The villagers stated there was going to be a three-year schedule of living support grants, provided twice per year. One grant was received after relocation for 1.28 million LAK per person. The villagers waited but the next grant but it did not come. 115 households filed formal request documents and finally received a second grant in August 2017, more than three years after the resettlement<sup>7</sup>.

The issues regarding living support grants were combined with other compensation issues and the general need for rehabilitation of local livelihoods are indicated in a formal report to the central government<sup>8</sup>.

One of the village committee members shared his opinion that the resettlement of the villages in Nam Ou 2 dam area was the first such event in the north of Laos therefore villagers did not have experience in negotiating. He claimed they did not have knowledge and experience about relocation so they trusted the government and the Party. They simply thought their livelihood would be better as the project and government authorities said.

Additionally, one senior villager (an 83-year old male) was more direct and said “*Kong Karn Ma Tua Pa Xa Xon Long Kee Tom Leo Nee.* (ໂຄງການມາຕົວະປະຊາຊົນລົງຂີ້ຕົມ ແລ້ວໜີ)”. Literally, “The project came to lie to people to convince them to get into a muddy pond and then left”. He felt the intentions were untrustworthy from the beginning, the promises were not sincere, and no help was given.

<sup>7</sup> Only 115 households in filed the formal request document the remaining 21 households did not cooperate in the process. The factors for not cooperating were ambiguous. It was whether because the 21 households were afraid of the upper local authorities or because they had no hope to get the grant. The filed formal request document was handed directly to the Prime Minister's Office in Vientiane in August 2016. The Office suggested the Ministry of Energy and Mines investigate and solve the issue. Additionally, in the report, it is written that the HatKhip Village chief was fired by the Ngoi district mayor since the village chief, together with villagers, made the request for the promised living support grants.

<sup>8</sup> The compensation issues were noted in the Prime Minister's Office's Department of Inspection and Assessment numbered 51/PMO.IA, dated November 7, 2016. The Department contacted the Ngoi district to investigate about the issues, but the issues remain unresolved.



Figure 5 -Livelihood pillars for resettlers -Based on the perspectives of 95 household head

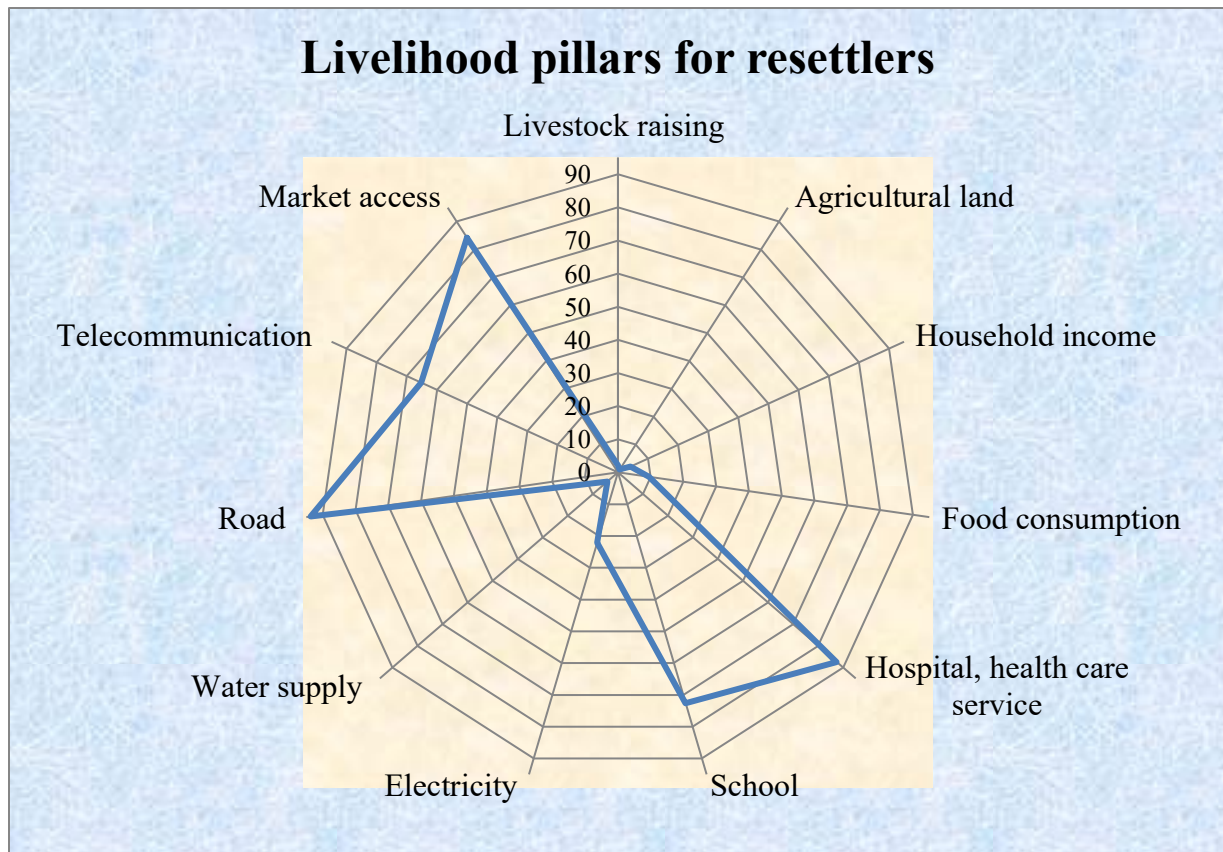


Figure 5 explains the overall conditions of the livelihood conditions of the relocated village. The 95 respondents were asked to compare the condition of each issue (pillar) to those in their former villages. It is based on the perceptions expressed by the 95 household heads using a simple calculation. It calculates the percentage of the 95 respondents saying the situation has been better or worse. 0 to 100 is the percentage; the closer to 100 the better the condition of the topic is. For example, 95 household heads were asked to compare the condition of water supply in the relocated village and that of their former villages; 92 out of 95 respondents said the condition of the water supply in the relocated village is poor. Therefore, the line in the web for water supply is close to 0. Figure 5 indicates that livestock raising, agricultural land, household income, food consumption, electricity, and water supply have been worse since the relocation. Improvements have been found in hospital/ health care services, school, roads, telecommunication, and market access.

### **Opinions from local authorities in charge of resettlement**

In May 2019, the first author interviewed a staff member from the Department of Energy and Mines of Luang Prabang Province about the resettlement of New HatKhip Village. The staff member stated that the villagers misunderstood and there were no promises. Both the three-year living support grants and agricultural lands in the relocated village were not promised. Additionally, the local government staff expressed that in fact there was no living support grants for affected villagers signed in the project contract either. However, the local government representatives were sympathetic and asked the hydropower company to provide the affected villagers a one-year living support grant and build a road from the relocated village to former villages so that villagers can commute to their farm lands conveniently. He also affirmed that the government of Laos can sue the hydropower project company in case it does not implement the agreements signed in the contract.

The staff member also mentioned that the timing of the dam project was driven by the China-Laos 70<sup>th</sup> Friendship Anniversary. Laos' signing of the contract was considered a gift to China in honor of that event. The upper level discussions and speed of decisions meant that some detailed agreements, which were signed after the government approval, were unclear, including the provision of job creation and livelihood development programs.

The opinions obtained from the local government staff that was directly in charge of the compensation and resettlement of the village and those from affected villagers were contradictory. On one hand the local government appears to have been putting much effort in developing the resettled community. For instance, they urged the hydropower company to hire students from the Faculty of Agriculture of Souphanouvong University to study about fish aquaculture in up- or downstream of the dam for the villagers. In addition, they claimed that the villagers were provided electricity fees for six months (150,000 LAK per household per month). Also, the local government urged the company to give 10 million LAK cash to buy one buffalo for the resettled village warming ceremony. However, on the other hand, villagers seem to criticize the local government of not implementing the given verbal promises. The villagers tend to claim that their livelihood has been worse due to the resettlement.

### **Discussion and conclusion**

This research assesses both the outcomes of hydroelectric plant construction for local communities in Laos. Specifically, it compares the condition of local livelihoods before and after the relocation and consolidation of two villages in Ngoi District, Luang Prabang province due to the Nam Ou 2 Hydropower Development Project. When the existing data of SEIA gathered prior to resettlement is compared to the authors' data from fieldwork at the New HatKhip Village, both positive and negative outcomes become evident. The positive aspects are market access, telecommunication, road, school, and hospital/health care service provided to the community. Opportunities for improvement are livestock grazing, agricultural land, household income, food consumption, and water supply. This research presents the real issues occurring with one particular resettled community: New HatKhip Village. However, the authors have no intention to be against or criticize the project and the government authorities. The authors only present the facts

that need to be accepted and developed in order to address opportunities for improvement and rebuild trust with the people.

Average income of villagers has been decreased approximately 25% compared to the average income before resettlement. Many of the factors which decrease income are related to agriculture and the lack of suitable local alternatives to natural food resources. Whether the costs are direct or indirect, there is clearly less natural food resource in the new village. The decrease or absence of natural resources has created more difficulties and food insecurity which leads to “new poverty” as in other areas of Laos (Shoemaker and Robichaud, 2018).

The resettled people’s job rehabilitation program has not been implemented; meaning no new and better jobs have been provided to the resettled villagers. The local authority stated that the program would be implemented in September or October 2019, but not occurring yet at present as of May 2020. Although this research indicated there were not significant drops in occupation-related income, the lack of a job rehabilitation program resulted in no new, better-paying jobs which could offset increased costs, stimulate the local economy, and also fulfill original promises from authorities.

Significant research on impact of hydropower development and hydropower-induced resettlement has been conducted elsewhere in Laos. Those findings are consistent with this research, finding three serious problems. First, resettled villagers do not receive suitable agricultural land. Second, promises made by those in control have not been met. And third, resettled people face food insecurity in their relocated village. Recommendations from the authors are given below.

Adequate agricultural land for resettled villagers must be determined at the earliest part of the process. This requires thorough, well-planned and well-studied assessment that many stakeholders, including foreign experts and NGOs, review with active public participation and consultation. This will ensure all parties agree and will ensure adequate agricultural land for the resettled villagers. This should be done before project approvals and realization that it may take a long time. As Souksavath put it ‘The time of EIA studies is very limited for most hydropower projects in Laos, except for the case of the Nam Theun 2 Project, while in the case of Japan impact assessments take at least ten years’(Souksavath, 2010:82).

Villagers need to be formally advised of their rights and obligations so they can review promises made by development projects. Villagers should be able to ask the development project staffs to document and sign agreements by all parties so that villagers can make claims if commitments are not fulfilled.

The concept of a ‘focal site’ should be reconsidered as combining many villages into one small city may easily lead to food insecurity when the population is larger than the available resources. The resettled villagers and the host villagers will share the same food and income sources. Our research also demonstrated the negative impact on income/food security from NTFPs. Although NTFPs that had not been sold in the past now have market value and market access is improved, the resources have become very scarce and benefit very few villagers who have been basically dependent on natural food resources.

For the future, new resettlement locations should be more precisely investigated, consulted, with greater participation from the impacted villagers and independent researchers. The authors suggest more thorough reviews and governance and these

efforts should not be rushed to that more development is given to dam-induced resettled communities in Laos. This includes study processes such as feasibility studies, EIA, SIA, public consultation, etc.

The project and the local authorities should not simply resettle them and abandon them. Villagers should be taken care of and assisted so that they can adapt to their new environment within their transition period. In fact, as stipulated in the Lao government Decrees No.192 and No.84, for every hydropower and other development projects, when resettlement was implemented, the resettled people were provided with livelihood rehabilitation and job rehabilitation programs for at least 3 to 5 years during the transition period. In most of the cases, including our case study, there is no assessment for these livelihood and job rehabilitation programs after this transition period. The hydropower development projects and the local authorities should be more benevolent and sympathetic to the resettled communities' livelihood development. In our case study, an unfortunate outcome is that there is no trust between the people and the local authorities in charge of relocation. Some villagers frankly expressed that people have lost trust in the state and government since they are now poorer due to the resettlement. How can the trust be rebuilt? The authors recommend that closer and more frequent monitoring from central government is needed. This would encourage the projects and local government to implement the agreements and resettlement work and exercise the regulations. In addition, the central government should not only rely on the so-called "flower reports" from the local government offices which include only positive elements of the project without considering critical issues for the sake of further community development.

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