

Independent Advisory Panel Report

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Nam Ngiep 1 Hydropower Project (Lao People's Democratic Republic)

Report Number 3 on the Third Site Visit, 4-11 May 2014

Prepared by Mr. Anthony M. Zola, Resettlement Specialist and Chairman of the Independent Advisory Panel for the Asian Development Bank

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**Report Number 3
of the Independent Advisory Panel on the Nam
Ngiep 1 Hydropower Project, Lao PDR
Third Site Visit, 4-11 May 2014**

5 June 2014

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List of acronyms and abbreviations

| | |
|-----------------|---|
| ADB | Asian Development Bank |
| CA | Concession agreement |
| CIA | Cumulative impacts assessment |
| DONRE | District office of natural resources and environment |
| DFRM | Department of Forest Resources Management |
| E&S | Environment and social |
| EGATi | Electric Generating Authority of Thailand International Company |
| EIA | Environmental impacts assessment |
| EMP | Environmental management plan |
| EMMP | Environmental monitoring and management plan |
| EMU | Environmental Management Unit |
| ESD | Environment and Social Division |
| ESIA | Environment and social impacts assessment |
| GOL | Government of Lao PDR |
| ha | hectare |
| IAP | Independent Advisory Panel |
| IFC | International Finance Corporation, World Bank Group |
| <i>Kum baan</i> | Group of focal development villages |
| LR | Lower reservoir |
| MEM | Ministry of Energy and Mines |
| MONRE | Ministry of Natural Resources and Environment |
| MRC | Mekong River Commission |
| NAFRI | National Agriculture and Forestry Research Institute |
| NBCA | National biodiversity conservation area / conservation forest |
| NNP1 | Nam Ngiep 1 hydropower project |
| NNP2 | Nam Ngiep 2 hydropower project |
| NNP1PC | Nam Ngiep 1 Power Company |
| NPA | National protected area |
| NTFP | Non-timber forest product |
| NTPC | Nam Theun Power Company |
| PAP | Project affected people |
| PONRE | Provincial office of natural resources and environment |
| PP | Project proponent |
| PPA | Provincial protected area |
| PRMLCRC | Provincial Resettlement Management and Living Condition Restoration Committee |
| REMDP | Resettlement and Ethnic Minority Development Plan |
| RMU | Resettlement Management Unit |
| SEA | Strategic environmental assessment |
| THPC | Theun-Hinboun Power Company |
| UR | Upper reservoir |

Report Number 3 of the Independent Advisory Panel on the Nam Ngiep 1 Hydropower Project, Lao PDR

Third Site Visit, 4-11 May 2014

Introduction

1. The IAP was informed by NNP1PC that the Government of Lao PDR (GOL) had created a new province, Xaysomboun Province, with the provincial capital in Anouvong District. Administrative units in the project area that are affected by this change include the following: PAP villages in Zone 2LR (formerly located in Hom District, Vientiane Province) are now under the jurisdiction of Lone Xang District, Xaysomboun Province; and, PAP villages in Zone 2UR remain under the jurisdiction of Thathom District (formerly in Xieng Khouang Province), but in Xaysomboun Province. The Houay Soup resettlement site remains in Bolikhan District, Bolikhamxai Province.
2. This report consists of two parts: Part 1 presents the activities and actions of the Independent Advisory Panel (IAP) on the Nam Ngiep 1 Hydropower Project (NNP1) in Lao PDR; and, Part 2 presents a summary of the resettlement, social, environmental, and biodiversity issues related to the construction of the NNP1 in a matrix format. Four separate annexes present the detailed findings of the individual members of the IAP.
3. The report was edited by Mr. Anthony M. Zola, the Resettlement Specialist and Chairman of the IAP. The annexes were prepared by individual members of the IAP.

Part 1: Independent Advisory Panel Actions

4. The Independent Advisory Panel (IAP) on the Nam Ngiep 1 hydropower project (NNP1) in Lao PDR undertook a third visit to NNP1 during on 4-11 May 2014. The IAP members participating in the third visit included the following:
 - Dr. Songwit Chuamsakul, Social Specialist
 - Dr. Richard Frankel, Environment Specialist
 - Dr. Kathy MacKinnon, Biodiversity Specialist
 - Mr. Anthony M. Zola, Resettlement Specialist
5. The IAP proposed to the Nam Ngiep 1 Power Company (NNP1PC) the following site visit schedule:
 - IAP visit number four: 7-14 December 2014
 - Visits in 2015: April/May, August/September, and December
 - Visits in 2016: April/May, August/September, and December
6. This IAP report to NNP1PC and ADB covers the following topics: (i) issues of concern to the IAP; (ii) actions by NNP1PC that are **required** by the IAP based on the NNP1 Concession / License Agreement, official / legal documents of the Government of Lao PDR (GOL), and international best practices; and, (iii) actions

recommended by the IAP that NNP1PC should undertake. Actions required and recommended by the IAP are time-based; meaning that NNP1PC will be obligated to or should undertake and/or complete these actions by a specific date.

7. The IAP categories of concern are as follows:
- High category of concern requires the Developer to act immediately;
 - Medium category of concern requires that the Developer act within 1-2 months; and,
 - Low category of concern requires action within six months.

The categories of concern are consistent with those applied at other international standard hydropower projects in Lao PDR.

8. Copies of this IAP report will be submitted to the following individuals:
- (i) Mr Yoshihiro Yamabayashi, Managing Director, NNP1PC
 - (ii) Mr Seiji Noda, Asian Development Bank
9. The third IAP site visit was undertaken over an eight day period; from Sunday, 4 May to Sunday, 11 May 2013. The IAP travel schedule was as follows:
- **Sunday, 4 May**
 - Arrive Vientiane. Overnight in Vientiane.
 - **Monday, 5 May**
 - Briefing by NNP1PC managers and staff at the Nam Ngiep 1 Hydropower Project office in Vientiane on (i) measures taken related to actions required and recommended by the IAP; and, (ii) overall progress on NNP1 project implementation and issues of concern.
 - The social specialists traveled to Anouvong District, Xaysomboun Province: Overnight in Anouvong District.
 - The environmental specialists travelled to Pakxan: Overnight in Pakxan.
 - **Tuesday, 6 May**
 - The social specialists met with the Governor of Xaysomboun Province at Anouvong District.
 - The Social Specialist travelled to Zone 2LR to interview PAP in four affected villages on 7 May; overnight at 2LR.
 - The Resettlement Specialist traveled to Zone 2UR to meet with district officials and NGO representatives at Thathom District, Xaysomboun Province; overnight at Ban Thavieng.
 - The Environment and Biodiversity specialists undertook site visits to the access road to the NNP1 dam site and to the dam site itself; traveled back to Vientiane; overnight in Vientiane.
 - **Wednesday, 7 May**
 - The Social Specialist interviewed PAP in Zone 2LR (Ban Houay Youak, Ban Sopyouak, Ban Soppouan, and Ban Houaypamom) and met with GoL officials in the Palavek group of focal development villages (*kum baan*); overnight at Pakxan.
 - The Resettlement Specialist met with the secretary of the *kum baan* at Ban Thavieng and interviewed PAP in three affected villages in 2UR (Ban Phiengta, Ban Hatsamkhone, Ban Puu). Overnight at Pakxan.
 - The Environment and Biodiversity specialists participated in a public consultation for non-governmental organizations on the NNP1 hydropower project organized by the GOL and NNP1PC at the Don Chan Palace Hotel in Vientiane; and, traveled to Pakxan; overnight in Pakxan.
 - **Thursday, 8 May**
 - The Social Specialist and the Resettlement Specialist met with the director of the Bolikhamxai Province RMU and a deputy district governor of Bolikhan District at Pakxan, Bolikhamxai Province; and, at Ban Thaheua village, met with the headman of Ban Thaheua, located on the access road to the NNP1 powerhouse and dam.

- The Social Specialist interviewed PAP in Hatsaykham hamlet (part of Ban Hat Gniun) and observed a PAP consultation (referred to by NNP1PC as 'good faith negotiations') at Hatsaykham; overnight in Pakxan.
- The Resettlement Specialist interviewed PAP in Ban Hat Gniun village and laborers along the access road from Ban Nonsomboun to Ban Hat Gniun and Hatsaykham hamlet; and, the village headman at Ban Hat Gniun; overnight in Pakxan.
- The Environment and Biodiversity specialists traveled from Vientiane to visit the impacted villages in 2LR; traveled on to Pakxan; overnight in Pakxan.
- **Friday, 22 November**
 - The Resettlement Specialist observed the public consultation on the NNP1 hydropower project organized by the GOL and NNP1PC and chaired by the Governor of Xaysomboun Province; held at the Bolikhamxai provincial meeting room. Travel to Vientiane and overnight in Vientiane.
 - The Social Specialist accompanied the Environment Specialist to consult with PAP at Hatsaykham hamlet about water supply issues affecting quality of life in the village; and, took water samples from the Nam Ngiep river for analysis. In the afternoon, the Social Specialist observed the public consultation on the NNP1 hydropower project organized by the GOL and NNP1PC at Pakxan; and, returned to Vientiane in the evening; overnight in Vientiane.
 - The Biodiversity Specialist observed forest degradation and searched for wildlife along the access road to the NNP1 powerhouse and dam in the morning.
 - The Environment and Biodiversity specialists traveled to Vientiane for a later afternoon meeting with representatives of MONRE and NNP1PC related to the proposed NNP1 biodiversity offset program. Overnight in Vientiane.
- **Saturday, 23 November**
 - Morning: Internal IAP meeting and preparation of individual debriefing presentations for NNP1PC staff.
 - Afternoon: IAP briefing for NNP1PC management and staff at Nam Ngiep 1 Hydropower Project office in Vientiane.
 - Overnight in Vientiane.
- **Sunday, 24 November**
 - Morning: IAP wrap-up meeting at the Hotel Khamvongsa.
 - Afternoon: Follow-up technical discussions by individual specialists.
 - Evening: Return travel to home bases.

10. The remainder of this report consists of the following: (i) Part 2: a summary of resettlement, social, environmental, and biodiversity issues, including the IAP's principal requirements and recommendations and level of concern; and, (ii) the findings of the IAP in the form of individual technical annexes as follows:

- Annex 1: Resettlement issues
- Annex 2: Social issues
- Annex 3: Environmental issues
- Annex 4: Biodiversity issues

Part 2: Summary of IAP issues, requirements, and recommendations

Summary of Resettlement Issues

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|---|---|--|--|--|-------------------|
| R1 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Depleted and degraded soil at the Houay Soup resettlement site is the single most important issue for PAP to be resettled | <ul style="list-style-type: none"> The Developer's Pilot Plan farm is demonstrating that rice and cash crops can be cultivated successfully at Houay Soup without using chemical fertilizers. NNP1PC informed the IAP that soils designated for paddy (approx. 420 ha) at Houay Soup will be upgraded prior to the resettlement of PAP. The IEE for Houay Soup is underway. | <ul style="list-style-type: none"> The IAP looks forward to seeing the results of the IEE for the Houay Soup river. | Medium |
| R2 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Need to upgrade an estimated 500 ha of land designated for grazing of large livestock; prior to arrival of PAP with their cattle and buffalo | NNP1PC informed the IAP that soils designated for grazing of PAP large livestock (approx. 500 ha) will be upgraded and planted with pasture grasses and legumes before the resettlement of PAP. | <ul style="list-style-type: none"> The IAP recommends that the Developer contact NAFRI to obtain recommendations for appropriate tropical grasses and legumes to establish in the grassland/ grazing areas at least one year prior to resettlement. | Low |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> Low - action recommended within 6 months Medium - action recommended within 1-2 months High - immediate action recommended. | | | | | |

Summary of Resettlement Issues

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|-----|---|--|---|---|-------------------|
| R3 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | <ul style="list-style-type: none"> • Designation of the Houay Soup area as a resettlement site by provincial and district authorities • Current occupants and land users at Houay Soup resettlement area | <ul style="list-style-type: none"> • The IAP was informed that the EIA approved by GOL/MONRE indicates that the Houay Soup area is the designated NNP1 resettlement area. • In principle, the cut-off-date for the entire project area has been set at 11 April 2014. This date has not yet been finally approved by key GOL officials. • Official transfer of Houay Soup area to NNP1PC is on-going within the GOL. • Topographic survey and infrastructure design is on-going for structures at Houay Soup. • Asset registration and compensation process at Houay Soup had begun in May 2014. | <ul style="list-style-type: none"> • These are significant advances by NNP1PC. • Careful follow-up is needed to ensure timely approvals by GOL officials at the central government level. • Survey and compensation of current occupants of the Houay Soup area are important milestones and should be completed on a timely basis. | High |
| R4 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Impacts and disturbance of PAP in Ban Hatsaykham from construction of the Developer's base camp and construction of the dam access road. | <ul style="list-style-type: none"> • The Developer has accepted the IAP recommendation and now plans to resettle PAP at Ban Hatsaykham to the Houay Soup resettlement area in early 2015. • The Developer is preparing a site-specific RAP for Ban Hatsaykham PAP. | <ul style="list-style-type: none"> • The dam access road is located some distance from the hamlet and was observed as having a less significant direct impact on the hamlet than originally expected. • The IAP recommends that NNP1PC SMO staff monitor impacts of construction crews on Hatsaykham hamlet several times each week. • The IAP will inspect community health and safety reports during the next IAP visit. | High |

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|--|--------------------|-------|--------|----------------------------------|-------------------|
| * Level of Concern: <ul style="list-style-type: none"> • Low - action recommended within 6 months • Medium - action recommended within 1-2 months • High - immediate action recommended. | | | | | |

Summary of Resettlement Issues

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|-----|--------------------|-------|--------|----------------------------------|-------------------|
|-----|--------------------|-------|--------|----------------------------------|-------------------|

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|---|---|---|---|---|-------------------|
| R5 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Commercial development by camp followers around the Developer's base camp and other labor camps (for construction of roads and other project facilities) will have a significant negative impact on PAP in host villages located near those construction camps. | <ul style="list-style-type: none"> The IAP was informed that a code of conduct has been formulated by the Developer and has been included in the REMDP. NNP1PC staff and contractor and sub-contractor staff are being given an orientation to the code of conduct in several languages. Restaurants and beer bars are being constructed along the access road. Some of these bars are serving alcohol immediately adjacent to the public primary school. The IAP discussed the issue of unethical and immoral social behavior by camp followers and laborers with the deputy district governor of Bolikhan District on 8 May 2014. NNP1PC has recruited SMO staff to implement social awareness activities among communities. | <p>The IAP has the impression that NNP1PC's Community Health and Safety staff are not effective.</p> <p>The IAP's recommendation remains unchanged (from IAP report no.1) as follows:</p> <ul style="list-style-type: none"> Required: The IAP requires that the Developer work to implement a zero tolerance policy toward unethical and immoral social behavior by all employees of the Developer (including consultants and advisors), the Head Contractor, and all sub-contractors. <p>Additional IAP recommendations include:</p> <ul style="list-style-type: none"> NNP1PC should support Bolikhan District officials in maintaining law and order at bars and restaurants along the access road and at all NNP1PC, contractor, and sub-contractor camps. This support should include training of bar and restaurant owners regarding: opening and closing hours; sale of beer and alcohol to laborers and minors; holding bar and restaurant owners responsible for customers' behavior when the customer is at the bar or restaurant. The experienced staff being mobilized by SMO should develop and implement a Social Management Action Program (SMAP) (modeled on a similar program at THXP) to disseminate social protection measures to vulnerable groups and all impacted villages. | High |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> Low - action recommended within 6 months Medium - action recommended within 1-2 months High - immediate action recommended. | | | | | |

Summary of Resettlement Issues

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|---|---|---|--|---|-------------------|
| R6 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Relocation of PAP in three villages in Zone 2UR | <ul style="list-style-type: none"> • The PAP at 2UR had earlier reported to the IAP that they had decided not to resettle at the Thong Nam Pha resettlement site. Instead, they would relocate within their villages and diversify livelihood activities with support from the Developer. Some households have completed self-relocation of their residences. • NNP1PC has agreed to support land development and alternative livelihood activities beginning in January 2015. • Issues related to use of drawdown zones (DDZ) will need to be addressed. | <ul style="list-style-type: none"> • The IAP recommends that a mini-RAP (relocation action plan) be formulated in a participatory matter with PAP and district and <i>kum baan</i> officials; ensuring participation by women and youth. | Low |
| R7 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | <ul style="list-style-type: none"> • PAP and GOL officials are eager to begin the resettlement process, considering that work on the NNP1 was initiated in 1989. • Construction is beginning to have observable impacts on PAP and villages along the access road to the NNP1 dam site. | <ul style="list-style-type: none"> • The asset survey along the access road to the NNP1 dam site has been completed and some 90% of compensation payments have reportedly been processed. • Construction has begun on sections of the access road. • Provincial RMUs have been created and are inter-acting well with the Developer. | <ul style="list-style-type: none"> • The project is well underway and progress is being made in many areas. • Based on the most recent site visit, the IAP notes that there is an urgent need for more intensive monitoring of impacts on PAP and of community health and safety issues. • The IAP recommends that NNP1PC intensify its monitoring of community health and safety to prevent damage to the company and its reputation, with special attention being paid to (i) engagement of under-age workers; (ii) the danger of human trafficking of village children and under-age sex workers; and, (iii) illegal activities and illicit behavior at bars and restaurants along the access road to the NNP1 dam. | Medium |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> • Low - action recommended within 6 months • Medium - action recommended within 1-2 months • High - immediate action recommended. | | | | | |

Summary of Resettlement Issues

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|---|---|---|--|---|-------------------|
| R8 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | The Developer has yet to provide details of the internal institutional structures that needed to organize, manage, and implement the resettlement program | <ul style="list-style-type: none"> • Staff has been recruited -- and continues to be recruited -- to undertake tasks related to public consultation, resettlement, asset surveys, community health and safety, infrastructure development, etc. • Organization charts and terms of reference have been prepared and disseminated. • Some staff do not have contracts, some for as long as 6 months. • Although good faith negotiations have begun in Hatsaykham hamlet, significant improvement is needed in company presentations to ensure understanding of important project procedures by PAP. | <ul style="list-style-type: none"> • The IAP is pleased with the organization of the SMO and the capability and experience of the professionals hired to work with the Developer. • The IAP notes with concern that community health and safety is weak and requires significant and immediate attention. • The IAP recommends that the Developer intensify monitoring of the NNP1PC contractor and all sub-contractors and the impacts of their construction activities on PAP and villages along the access road to the NNP1 dam. • The IAP recommends that all staff be provided with contracts prior to beginning work at NNP1PC; and, as contracts expire, extensions should be provided on a timely basis – without excessive delays. • The presentations made at the good faith negotiations observed by the IAP were inadequate. Practice sessions should be held prior to making presentations to PAP on important issues like entitlements and the resettlement process. | High |
| R9 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | The Developer is expected to contribute to capacity building of MONRE and assist in establishing the EMU staffed by provincial and district representatives from project affected areas | IAP discussions with provincial and district officials indicate that the role and responsibilities of the EMU are unclear. | MONRE will be supported by the EMSP directed by Peter Jensen. The focus will initially be on Xaysomboun Province, involving all project affected districts in an integrated land use map building and environment awareness training program. The provincial and district EMUs will be created as a result of support from this program | Low |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> • Low - action recommended within 6 months • Medium - action recommended within 1-2 months • High - immediate action recommended. | | | | | |

Summary of Social Issues

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|---|---|---|--|--|-------------------|
| S1 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | <ul style="list-style-type: none"> Changing the Hmong lifestyle is not easy and will take time Agricultural produce market | <ul style="list-style-type: none"> Many Hmong men and women are self-motivated and interested in operating small businesses No agricultural market in the area | For sustainable development, the GOL and the Project should identify agricultural markets for PAP agricultural outputs. This is a strong recommendation from the Xaysomboun Governor, as well. | High |
| S2 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | <ul style="list-style-type: none"> Hmong culture and identity Hmong kinship or clan system Language Beliefs and spiritual ceremonies Marriage and family Funeral ceremonies Hmong clothing | The Hmong in this area still practice Hmong traditional culture | The Hmong graveyards must be moved first at least one year prior to moving the PAP. (in the 4 villages of Zone 2LR) | High |
| S3 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | <ul style="list-style-type: none"> Originally, according to the Hmong, soils in Houay Soup are poorer quality than the soils in the 5 affected villages. Land size is inadequate | <ul style="list-style-type: none"> All villagers of Ban Namyouak, 80% of villagers of Ban Sopyouak and 23 households of Ban Soppuan wanted to move Ban Nam Awk Hu, Burapa District, Khammuan Province. It is said that the GOL allow them to move there. They went there to observe and they really wanted to move to Ban Nam Awk Hu. Around 40 hh of Ban Soppuan and 32 hh of Ban Houaypamom will resettle up to their old villages at Phu Sam Liam, Houay Hin Daeng, and Houay Pha Khao. There will be 6 hh of Ban Houaypamom will move to Houay Soup. | <ul style="list-style-type: none"> In the ADB Consultation Meeting in Pakxan, Bolikhamxay Province on May 9, 2014, the Governor of Xaysomboun Province, as the Chairperson of the Project from the GOL (Dr.Sombut Yialeher) mentioned that the GOL will not allow the PAP move to Ban Nam Awk Hu, Khammouane Province. The IAP strongly recommends the Developer to work closely with the Governor of Xaysomboun Province to find a solution. Dr.Sombath is an ethnic Hmong. He knows the Hmong in the area. And importantly, he has power as the governor of the province. He is able to convince his people and the Hmong listen to him. | High |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> Low - action recommended within 6 months Medium - action recommended within 1-2 months High - immediate action recommended. | | | | | |

Summary of Social Issues

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|---|---|--|---|---|-------------------|
| S4 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | <ul style="list-style-type: none"> Food security is a major concern of the PAP. Soils at Houay Soup need improvement. Additional investigations are needed on the use of the whole resettlement site. | The Pilot Plan site / demonstration farm is managed by a professional Hmong manager who understands Hmong customs and traditions and can demonstrate how PAP can prosper at the Houay Soup resettlement site. | <ul style="list-style-type: none"> The IAP recommends that the Developer makes every effort to ensure that the PAP will have enough food for their families. Methods include support for the following: vocational training, jobs, compensation payments, scholarships for youth education, credit for small business, and protecting PAP rights. | Medium |
| S5 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | <ul style="list-style-type: none"> There are more people from outside both Hmong and Lao Loum A small shop have opened recently. Alcohol is sold all day. Many young males and females both Hmong and Lao Loum drink and sing songs. Young men always ask young women to come drinking at the shops. | This may lead to sexual assaults, sexual abuses, and crimes, especially at night. | <p>Required:</p> <ul style="list-style-type: none"> The Developer must work with district officials to prevent prostitution, drug dealing, gambling, and other social crime at the Developer's camp and anywhere near Ban Hatsaykham hamlet. A zero tolerance policy needs to be enforced by the Developer, in close cooperation with local government officials; particularly the provincial and district governors, police, health officials, education officials, and social development officials. | High |
| S6 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | PAP compensation entitlements | <ul style="list-style-type: none"> Many PAP indicated that they had not yet been informed about their compensation entitlements. Good faith negotiations have begun at Ban Hatsaykham hamlet. | <ul style="list-style-type: none"> The IAP recommends that details of compensation should be provided to PAP as soon as possible, to curtail the current building of new houses and buildings. | High |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> Low - action recommended within 6 months Medium - action recommended within 1-2 months High - immediate action recommended. | | | | | |

Summary of Social Issues

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|---|---|---|---|---|-------------------|
| S7 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Interest in self-resettlement by many Hmong PAP | Self-resettlement is related to having sufficient food to consume for the entire year for many Hmong households. | <ul style="list-style-type: none"> The IAP recommends that the Project must work closely with the new provincial Governor and his senior officials. This is a great opportunity for the Project. | High |
| S8 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Institutional issues: <ul style="list-style-type: none"> The new Xaysomboun Province has been created and includes the four directly affected villages of Zone 2LR There are more Hmong ethnic staff in the Project | <p>The Governor (Dr.Sombath Yialeeher), the Deputy Governor (Mr. Lo Pao Xong) and the Chief of Lao National Front Construction of the province are from Hmong ethnic group. The Xong Clan, the largest clan of the Hmong in Ban Namyouak (Zone 2LR) belongs to the Deputy Governor, Mr.Lo Pao Xiong's relatives.</p> <p>This is a great opportunity to work with the PAP. These GOL officials are able to convince the PAP and the PAP will listen to them, as well as they are able to work with the Project</p> | <ul style="list-style-type: none"> The current Xaysomboun Province's Governor is interested and has strived to solve problems between the PAP and the Project. He also is the Chairman of the Project from GOL. He went to the 4 villages of Zone 2LR twice to meet villagers and observe the issues. Based on IAP interviews in Zone 2LR, the Hmong listen and respect him and his officials. The IAP recommends that the Project must work closely with the Xaysomboun Governor and his officials to deal with any PAP issues. The new Hom District Chief (Mr.Khampong Khamseeda) also supports the Project. The IAP recommends that this is a great success and reputation for the Project and the Project is able to deal with any issues of the Hmong ethnic group in the areas. The IAP recommends that the Project should have more Hmong females to fulfill and complete its missions. | High |
| S9 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Polluted water in Ban Hatsaykham (Zone 3) | PAP drink water from Nam Ngiep River | <ul style="list-style-type: none"> The IAP recommends that the Project must investigate and find the facts immediately and then solve problems carefully. | High |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> Low - action recommended within 6 months Medium - action recommended within 1-2 months High - immediate action recommended. | | | | | |

Summary of Social Issues

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|---|-------------------------------|--|---|--|-------------------|
| S10 | Site visits: 4-11 May 2014 | Community participation | The number of issues has increased in each community | <ul style="list-style-type: none"> The IAP recommends that more community participation is needed to prevent issues (e.g., crime) in Ban Hatsaykham hamlet, which may lead to more conflict among people. Any conflict occurs should be resolved with participation of the Lao Front for National Construction. In Ban Hatsaykham hamlet, the representative of the Lao Front for National Construction is willing to assist with conflict resolution between his villagers and the Project and others. | High |
| S11 | Site visits: 4-11 May 2014 | Hmong language: The Hmong elders and women cannot understand Lao sufficiently; whereas the most directly affected PAP are Hmong. | In some situations, the IAP observed that only Lao and English were being provided. | <ul style="list-style-type: none"> Hmong spoken and written language must be used in any meeting: this means there will be three languages are used in every meeting; Lao, Hmong and English. This is a crucial issue for the Hmong PAP who are the directly PAP, especially Hmong women and elders who cannot speak, cannot read and cannot write Lao and English. | High |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> Low - action recommended within 6 months Medium - action recommended within 1-2 months High - immediate action recommended. | | | | | |

Summary of Environmental Issues

| No. | Reference Document | Issue | Status | IAP Previous Comments and Recommendations | IAP Comments and Recommendations this Site Visit Report (May 2014) | Level of Concern |
|--|---|---|--|--|--|------------------|
| E1 | ESIA of NNP1 Site visits: <ul style="list-style-type: none"> 7-12 January 2013 17-24 November 2013 4-11 May 2014 | The multiple dams on the Nam Ngiep (NNP1 and upstream NNP2) and Nam Xan Rivers will impact on river and ecological flows, water quality, fisheries and other downstream aquatic life. | <ul style="list-style-type: none"> A Cumulative Impact Assessment (CIA) was undertaken by ERM for all the hydropower projects in the Nam Ngiep River Basin and other developments that would impact on the same natural resources in the project area using a rapid assessment method. The CIA was submitted to NNP1PC and ADB for review in Jan 2014. ADB sent comments to NNP1 and ERM in March 2014. The updated version, Revision 1, dated May 2014, includes responses to ADB comments. ERM has stated that data from other hydropower projects in the basin were minimal due to inaccessible documents and lack of public awareness websites. | <ul style="list-style-type: none"> Any significant cumulative basin impacts that the project will make need to be identified and predicted (e.g., altered river flows, water quality changes, and related effects on aquatic ecology). Multiple planned hydropower and mining projects in the river basin are impacting forest reserves and village relocation sites. ADB should be requested to assist MONRE to carry out a comprehensive CIA study for the Nam Ngiep river basin or to have MONRE draft an agreement for all Project Proponents concerned to share the cost of a basin wide study. <p>ADB Comment: This is an issue of Government, not the Developer.</p> <p>NNP1 Comment: A satellite image for the watershed will be purchased.</p> | <ul style="list-style-type: none"> The IAP recommends that ESMP/MONRE organize training of district and provincial staff of Xaysomboun Province in Integrated Spatial Planning (ISP). A meeting was held at MONRE to discuss the proposed project. ESMP committed to organize the program and provide technical training, but requested financial support from NNP1 for the year-long data gathering and training program of US\$40-50,000. The ISP will permit the province and NNP1 to map out all land use designations, concessions, and commitments in the watershed to provide a basis for future river basin planning and management. The ISP will clarify boundaries of forest protected areas, forest production areas, districts, etc. into one land use map for the new province. | Medium |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> Low - action recommended within 6 months Medium - action recommended within 1-2 months High - immediate action recommended. | | | | | | |

Summary of Environmental Issues

| No. | Reference Document | Issue | Status | IAP Previous Comments and Recommendations | IAP Comments and Recommendations this Site Visit Report (May 2014) | Level of Concern |
|---|--|---|---|---|--|------------------|
| E2 | National Policy on Environmental and Social Sustainability of the Hydropower Sector in Lao PDR, No. 561/CPI, June 2005 | There are four hydropower projects under construction that will affect water quality, water use, and water availability of the Nam Ngiep river. An organizational arrangement is needed to manage watershed resources and enable communications and cooperation between the hydropower companies. | MONRE prefers to manage natural resources based on established levels of government administration, namely, national, provincial and district levels. However, overlapping concessions, cumulative and trans-boundary impacts from hydropower and other development necessitate GOL to develop an integrated management plan and monitoring arrangements. | <p>MONRE, together with provincial and district officials and representatives of impacted communities, should participate to a special meeting to discuss future management issues of the watershed together with representatives of the Developer. The output of the meeting should be concrete steps to develop a management plan and establish a monitoring arrangement for the watershed together with a budget for its implementation.</p> <p>The IAP recommended that ADB consider financing such an arrangement as it is a new concept for the GOL.</p> <p>ADB Comment: This is an issue for Government, not the Developer.</p> <p>NNP1 Comments: We are commencing high level dialogue with NNP2 and requesting EIA Reports from other projects under consideration, namely Nam Xan A and B and NNP3.</p> <p>All issues related to the Nam Ngiep River will be dealt with in the NNP1 Watershed Management Plan.</p> | <ul style="list-style-type: none"> The IAP will bring this issue to the attention of MONRE/DESIA again and ask MONRE to convene a workshop for stakeholders and the GoL. IAP recommends that NNP1PC supports convening of a workshop to discuss coordinated watershed management planning, water use and water quality monitoring, sharing of resources, and conservation measures. Participants should include all government stakeholders, impacted communities, and the Developer, and Consultants. IAP recommends that watershed management techniques should be discussed, such as integrated land use planning, hydrology and rainfall data sharing, river basin modeling, improved communications between stakeholders, and establishing a Nam Ngiep website to post monitoring data and documents for watershed stakeholders. | Medium |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> Low - action recommended within 6 months Medium - action recommended within 1-2 months High - immediate action recommended. | | | | | | |

Summary of Environmental Issues

| No. | Reference Document | Issue | Status | IAP Previous Comments and Recommendations | IAP Comments and Recommendations this Site Visit Report (May 2014) | Level of Concern |
|---|---|--|--|---|---|------------------|
| E3 | EIA Nam Ngiep 1 Hydropower Project (2012) | Information on fisheries in the Nam Ngiep is minimal. There are conflicting reports on how important fisheries are to the livelihood of project impacted villages. | The quantity and diversity of fisheries in the Nam Ngiep is not adequately documented. | <p>The IAP recommends that the EIA consultants clarify in their baseline studies (1) the proportion of family income derived from seasonal fishing; (2) the proportion of local diet protein derived from fish; and, (3) the importance of fisheries for subsistence or income.</p> <p>ADB Comments: Recommended ERM to include these questions in their surveys</p> <p>NNP1 Comments: Preliminary income from fisheries survey done; IAP is awaiting the updated baseline studies</p> <ul style="list-style-type: none"> • Fish species on Nam Ngiep River and tributaries study completed by Dr. Maurice Kottelat, fish taxonomist and LARReC, January–February 2014. • Assessment of <i>Luciocyprinus striolatus</i> in Lao PDR and Nam Ngiep Catchment by Terry Warren and LARReC in March to April 2014. • NNP1 is initiating <i>Luciocyprinus striolatus</i> habitat study in Nam Ngiep riverbasin | <ul style="list-style-type: none"> • IAP is satisfied with the survey work, baseline data reports, and conclusions that indigenous species will continue to flourish above the proposed dam site. • The IAP also concurs with NNP1PC plans for future fisheries monitoring. | Closed |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> • Low - action recommended within 6 months • Medium - action recommended within 1-2 months • High - immediate action recommended | | | | | | |

Summary of Environmental Issues

| No. | Reference Document | Issue | Status | IAP Previous Comments and Recommendations | IAP Comments and Recommendations this Site Visit Report (May 2014) | Level of Concern |
|---|---|---|---|--|--|------------------|
| E4 | ESIA NNP1, December 2012, Site Visit 14-19 Jan. 2013 and Site Visit 17-24 Nov. 2013 | Water quality in the Nam Ngiep River is being affected by upstream activities (apparently a mining activity is discharging untreated wastewaters and affecting the 'color' of the river water). At the junction of Nam Ngiep and Nam Youak, it is clear to the eye that the Nam Ngiep is receiving excessive sediment discharge | There is no information in the EIA documents on this issue. Sediment loads, conductivity, color, and mineral levels should be monitored in the Nam Ngiep River as baseline investigation. | <p>The IAP recommends that sampling and analysis of the physical and chemical properties of the current water quality in the Nam Ngiep River upstream of the dam site should be monitored to identify what are the pollutants, if any, coming from upstream activities.</p> <p>The IAP recommends that the Developer identify those pollutants so that future construction activities of NNP1 are not blamed for water quality impacts coming from upstream development projects.</p> <p>NNP1 comments: <i>Water quality sampling and analysis have been started at the planned upstream reservoir and the dam site.</i> <i>ERM currently updating the EFR with consideration given to a water quality model that includes N and P.</i></p> | IAP is satisfied with proposed water sampling program and awaiting preliminary findings. IAP also was informed that ERM is revising the environmental flow assessment. | Closed |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> • Low - action recommended within 6 months • Medium - action recommended within 1-2 months • High - immediate action recommended | | | | | | |

Summary of Environmental Issues

| No. | Reference Document | Issue | Status | IAP Previous Comments and Recommendations | IAP Comments and Recommendations this Site Visit Report (May 2014) | Level of Concern |
|---|---|--|---|---|--|------------------|
| E5 | MONRE, EIA Decree 2010, and Environmental Protection Law 2012 requires SEAs for key development sectors | The EIA Decree 2010 and the Revised Environmental Protection Law 2012 require Strategic Environmental Assessment (SEA) of key development sectors. SEA has yet to be introduced to the Ministry of Energy and Mines, and in particular to the Hydropower Sector. | There is no Strategic Environmental Study of the hydropower sector in Lao PDR. Such an SEA would assess the impacts of existing and proposed future hydropower projects on NBCAs, protected forests, water resources and other related environmental assets of Lao PDR and permit alternative power development plans to be analyzed. | <p>The IAP recommends that MONRE promotes MEM to undertake a SEA of the hydropower sector in Lao PDR to include trans-boundary effects on downstream resources and ecologically sustainability. ERM was to consult MRC about the status of their plans to undertake a SEA study on the hydropower sector in Lao PDR. IAP believes that this issue has yet to be resolved.</p> <p>Resource conflicts continue to surface (e.g., the proposed Nam Mang 3 dam in the Phou Khao Khouay NPA.</p> <p>ADB Comments: This is an issue for Government, not the Developer.</p> <p>NPP1 Response: Issue around resource utilization, such as NPA and Forest, etc. will be work through with the GoL by NNP1 Watershed Management Planning process. This information can then be feedback into SEA.</p> | <p>The IAP recommends that an integrated land development map and study be prepared for the three affected provinces that would permit MONRE and development agencies to discuss resource use policies and sustainability objectives. This issue has now been simplified by the GoL creating Xaysomboun Province, which overlays the Nam Ngiep watershed boundary.</p> <p>During the 3rd IAP site visit, ESMP, MONRE, and NNP1PC committed resources to organize, manage, and develop an ISP program for the new province during 2014-2015. The output will be an integrated land use plan for the province which will clarify future development issues.</p> | Closed |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> • Low - action recommended within 6 months • Medium - action recommended within 1-2 months • High - immediate action recommended | | | | | | |

Summary of Environmental Issues

| No. | Reference Document | Issue | Status | IAP Previous Comments and Recommendations | IAP Comments and Recommendations this Site Visit Report (May 2014) | Level of Concern |
|---|---|---|--|---|---|------------------|
| E6 | Site visit 7-12 Jan. 2013, and Site Visit 17-24 Nov. 2013 | The Developer is expected to contribute to capacity building of MONRE and assist in establishing the EMU staffed by provincial and district representatives from project affected areas | <p>IAP discussions with provincial and district officials indicate that the role and responsibilities of the EMU are unclear due to (1) new departments and duties in MoNRE; and, (2) the project has impacts in three provinces and numerous districts.</p> <p>Note that no meetings were held with the EMU during the IAP Nov. 2013 site visit.</p> <p>IAP pursued this topic with MONRE during May 2014 site visit. Firstly, agreement to form a new province, Xaysomboun, has simplified establishment of the EMU and improved prospects for a workable organization. Secondly, EMSP, MONRE, has agreed to organize, manage, and train all project affected district and provincial officers of the new province in an ISP program (output is a land use map for planning purposes and building environmental awareness). Thirdly, NNP1 has agreed to provide financial support of US\$50,000 for the year-long ISP training program.</p> | <p>The IAP is satisfied with Annex C, clause 78 (general provisions of responsibilities of EMU). But MONRE now includes new Department of Land, Water, and Forest Resources, in addition to Environment, and with 3 provinces impacted by NNP1, there will be inadequate funds to have district and provincial offices participate in the defined responsibilities. The budgets of Annex C for EMU and MONRE capacity building are inadequate. Managing the EMU remains a key GoL issue for the NNP1 watershed.</p> <p>ADB Response: This is an issue for Government, not the Developer.</p> <p>NNP1 Response: The Minister of MoNRE issued the agreement on implementation and activities of EMU on 15 June 2013 (Original) and revised change from Vientiane, Boulikhamxai, and Xiengkhouang Provinces to one new Xaysomboun Province on April 2014. EMU proposed budget three times higher than in CA Annex C.</p> | <ul style="list-style-type: none"> The EMU should include the same district and provincial officers and MONRE representatives who will be involved and trained in the ISP program. The IAP recommends that an official letter signed by the Governor of Xaysomboun Province be sent to MONRE to request the ISP program for the new province. | High |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> Low - action recommended within 6 months Medium - action recommended within 1-2 months High - immediate action recommended | | | | | | |

Summary of Environmental Issues

| No. | Reference Document | Issue | Status | IAP Previous Comments and Recommendations | IAP Comments and Recommendations this Site Visit Report (May 2014) | Level of Concern |
|---|---|--|---|---|---|------------------|
| E7 | Site Visit 4-11 May 2014, Annex C to the CA | Villagers of Hatxaikham have complained during this IAP site visit that "construction crews of the Dam Access Road Contractor have polluted their water supply by using the river for their toilet needs and disposal of trash". Their children are coming down with diarrhea and dysentery due to the contaminated water". The CA Annex C Social and Environmental Commitments requires NNPIPC to provide safe water supply for all communities affected by Project activities. | Construction camps of the Dam Access Road Contractor have adequate toilet facilities for workers and temporary solid wastes collection and storage facilities. However work areas along the temporary road to the temporary bridge and across the river, which work areas are less than a kilometer from Ban Hatxaikham, do not have such facilities. | No previous comments; this is a new issue of the 4-11 May 2014 site visit. The IAP visited Hatsaykham and interviewed families of the village headman and his deputy. Water samples were collected from the river by traditional methods, from rain water collected from roof drains, and from a surface spring supply available during the wet season. Both households store water for consumption. Children drink from these water sources using available ceramic or metal cups. The water is not boiled. Water is only boiled at night for the family meal, and served for the elderly family members. | The IAP carried out a water sampling activity of all three water sources, stored water, and boiled water samples to test for turbidity, fecal coliform organisms, and total coliforms. Samples were iced, kept in dark bottles, and sent to Earth Systems Labs for analysis. Results will be available for analysis later in the month. It is recommended that a simple rural water supply system be introduced to Hatxaykham villagers to improve the quality of their water supply. Villagers generally display appropriate hygienic habits, but children are exposed to untreated (and possibly contaminated) drinking water. Water quality test results will clarify the level of contamination. | Medium |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> • Low - action recommended within 6 months • Medium - action recommended within 1-2 months • High - immediate action recommended | | | | | | |

Summary of Environmental Issues

| No. | Reference Document | Issue | Status | IAP Previous Comments and Recommendations | IAP Comments and Recommendations this Site Visit Report (May 2014) | Level of Concern |
|--|--|--|---|--|--|------------------|
| E8 | Site Specific ESMMP for T12 Road, Site Visit 4-11 May 2014 | Site- Environmental Social Monitoring & Management Plans are required of all Contractors for project construction works. The site specific ESMMP produced by Obayashi Corporation for the Dam Access Road construction works contain only general guidelines for managing environmental issues and do not contain site-specific details. | <p>The ESMMP for the access road to the dam site produced by Obayashi Corporation does not contain the site-specific plans and details to describe the protective and corrective measures to be used by the Head Contractor to protect against environmental impacts along each section of the access road to the dam site. Instead the ESMMP contains only general guidelines which will be used for managing environmental issues, such as erosion, sediment control, waste management, and worker safety and awareness.</p> <p>Construction is underway and protective measures are to be incorporated into construction plans, such as containment of spoil disposal areas, erosion control measures, implementation of solid waste and septic waste system management systems, etc. However such systems are only partially completed during this period because the Contractor is awaiting the rainy season to determine how the runoff will flow, how severe the flooding will be at various points, and where the erosion will occur so that during the next dry season he can correct and strengthen the site specific mitigation measures which are currently only "temporarily" constructed.</p> | <p>No previous comments; this is a new issue of the 4-11 May 2014 site visit.</p> <p>The IAP visited all construction sites and camps along the access road to the dam site and spoke with the Construction Manager. He is aware of environmental issues but believes because the road is temporary that environmental protection measures can be developed and improved as needed based on erosion, sedimentation and drainage problems as experienced during the rainy season. This attitude of "wait and see" means that erosion protective measures, such as silt fences, embankment protection, grass planting, sedimentation ponds to hold runoff and reduce sediment spills to the river, etc. are not being implemented this dry season, and the Contractor will await results of the wet season to determine the extent and location of what and where protective measures are needed to achieve the environmental management objectives.</p> | <p>The IAP believes that the Contractor is knowledgeable and is aware of what environmental protective measures are needed to offset impacts and minimize environmental effects of construction activities. However, his focus is on completing the access road work as quickly as possible before the onset of the wet season. Sections of the road are only temporary therefore the focus appears to be that the protective works can wait until the road work is completed.</p> <p>The IAP recommends the following actions:</p> <ol style="list-style-type: none"> i. The Contractor should hire an Environmental Manager for the Access Road Contract ii. A team of inspectors is needed to ensure implementation of the ESMMP-CP. The EMO needs additional field staff to monitor and enforce contract commitments. iii. The monthly visits of Earth Systems Lao to audit the Contractor are inadequate to cover daily supervision work. iv. Strict attention to management of construction, vehicle and sanitation wastes are needed all along the access road construction sites, not just at the work camps; and v. Implement guidelines and recommendations shown in the report <u>Access Road Rehabilitation – Environmental Audit and Corrective Action Plan Report, February 2014.</u> | Medium |
| <p>* Level of Concern</p> <ul style="list-style-type: none"> • Low - action recommended within 6 months • Medium - action recommended within 1-2 months • High - immediate action recommended | | | | | | |

Summary of Biodiversity Issues

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|---|---|---|---|--|-------------------|
| B1 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Options for implementing a biodiversity offset | <ul style="list-style-type: none"> ERM offset options review Phou Khao Khouay NPA has high biodiversity value but weak management Ongoing ERM survey ERM study | <ul style="list-style-type: none"> The IAP recommends that the ERM team review a diversity of biodiversity offset options. The IAP recommends additional studies as follows: <ul style="list-style-type: none"> Studies on fish species and populations Data on species of NTFPs The IAP recommends that the Developer invest in strengthening protection and management in national protected areas (preferably multiple sites), specifically in Phou Khao Khouay NPA, by supporting NGO work; and, explore options for a cumulative biodiversity offset fund (with ADB and GOL and other donors). To implement the biodiversity offset, simple institutional mechanisms should be operated through MONRE or the Environment Protection Fund. Mechanisms should reflect lessons learned and criteria from other funds. | High |
| B2 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | <ul style="list-style-type: none"> Critical habitat along the dam access road Activities along the dam access road need to be managed to reduce impacts | <ul style="list-style-type: none"> Concern regarding the status of the Houay Ngoua provincial protected area (PPA) and compliance with ADB safeguards; area is badly degraded An alternative route for the dam access road is prone to flooding Only essential clearing should take place along the access road in the Houay Ngoua PPA | <ul style="list-style-type: none"> Houay Ngoua badly degraded due to EdL clearance for power lines. Areas excised for agriculture. The provincial governor's proclamation of the Houay Ngoua reserve should be reviewed to ascertain exact status; provincial protected area or not. Houay Ngoua reserve should be reviewed to ascertain exact status; provincial protected area or not. | Closed |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> Low - action recommended within 6 months Medium - action recommended within 1-2 months High - immediate action recommended. | | | | | |

Summary of Biodiversity Issues

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|-----|---|---|---|--|-------------------|
| B3 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Activities along the dam access road need to be managed to reduce impacts | <ul style="list-style-type: none"> Degradation and logging along access road due to EdL village electrification program NNP1 supporting Provincial and District Forest Office with checkpoint and funding for patrols. | <p>The IAP recommends the following:</p> <ul style="list-style-type: none"> That NNP1PC should minimize environmental and social impacts by liaising with the district forest office to (i) limit clearing; and, (ii) reforest using native species. Check points and spot checks should be arranged for vehicles and workers to prevent illegal removal of logs, NTFPs, wildlife Monitor effectiveness of Houay Ngua checkpoint. Work with provincial authorities to limit forest clearance along new dam access roads. | High |
| B4 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Additional studies required on fish species and populations | <ul style="list-style-type: none"> Fish surveys have been undertaken NNP1PC is supporting additional fish surveys beyond watershed NNP1PC is reviewing fish captive breeding Fish surveys undertaken – show dam will have no impact on threatened species. | IAP recommends more information be provided for the rationale for fish captive breeding scheme. | Low |
| B5 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Poor knowledge of wildlife populations and distribution in project area | <ul style="list-style-type: none"> Additional surveys are required of wildlife in Nam Ngiep watershed Information on wildlife in watershed (ERM report) largely based on literature surveys Brief primate surveys have been conducted; gibbons at low density. Information available suggests wildlife impoverished in watershed and threatened by future developments | <p>The IAP requires the following:</p> <ul style="list-style-type: none"> More detailed surveys of wildlife in lower watershed as input to watershed management plan; and, Field surveys to provide better information on status and distribution of wildlife prior to any decisions on watershed as candidate area for biodiversity offset. | High |

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|--|---|---|---|--|-------------------|
| * Level of Concern: <ul style="list-style-type: none"> • Low - action recommended within 6 months • Medium - action recommended within 1-2 months • High - immediate action recommended. | | | | | |
| B6 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | <ul style="list-style-type: none"> • Data on NTFPs collected • Quantities of NTFPs to be collected that are controlled annually by the district where "quotas" are issued to the villages | <ul style="list-style-type: none"> • ERM and socio-economic surveys are on-going. | The Developer should work with PAP to test the NTFP quota system among villages based on a "sustainable yield" study in the designated areas of natural forest used to permit villages to continue earning disposable income from collection and sale of NTFPs. | Medium |
| B7 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | <ul style="list-style-type: none"> • Wildlife capture and translocation proposed during construction phase • Options for reallocation of wildlife translocation funds | Wildlife translocation plans on hold | <ul style="list-style-type: none"> • The Developer should look at lessons learned from Nam Theun 2 and adapt plans as needed. • If translocation is not cost effective funds should be reallocated to other activities (e.g., wildlife surveys and monitoring) | Closed |
| B8 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Workers and construction traffic removing forest resources, illegal logs and wildlife | Prohibition of illegal harvesting and trade is to be covered in the Developer's Code of Conduct | The Developer should require a zero tolerance policy on illegal logging, hunting and wildlife trade by Contractor employees | High |
| B9 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Introduction of potentially invasive species as part of reforestation, agriculture schemes | <ul style="list-style-type: none"> • Frogs to be raised by PAP should NOT be exotic species • Plans for aquaculture in reservoir to improve livelihoods | <ul style="list-style-type: none"> • Need careful review to ensure no introduction of exotic species with likely negative impact on native fish fauna. • The Developer should check to make sure that the proposed species to be introduced are NOT potentially invasive | Low |
| B10 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | NTFPs used by PAP for food security and cash income | PAP at all impacted villages are highly dependent on NTFPs | Protect sufficient natural forest within and adjacent to the resettlement sites for villagers to harvest NTFPs or provide alternative sources of income | Low |
| * Level of Concern: <ul style="list-style-type: none"> • Low - action recommended within 6 months • Medium - action recommended within 1-2 months • High - immediate action recommended. | | | | | |

Summary of Biodiversity Issues

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|--|---|---|---|--|-------------------|
| B11 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Awareness of the importance of natural forests to the quality of life of PAP | PAP have a low awareness of the importance of the quality of forest to their lives and livelihood | Raise awareness among PAP of the value of natural forests for protecting water quality and other ecosystem services | Low |
| B12 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | <ul style="list-style-type: none"> Monitoring of biodiversity Capacity of Provincial and District EMUs for Monitoring Community engagement in monitoring | <ul style="list-style-type: none"> Biodiversity values are not monitored by anyone EMUs in 3 project provinces have limited capacity and resources Hmong villagers have good local knowledge | Reservoir will give access to new areas above water line. Recommendations: <ul style="list-style-type: none"> Additional wildlife surveys should be undertaken in the upper watershed forests during construction to better define protection and monitoring needs Hmong villagers should be hired to assist with monitoring biodiversity within the resettlement areas and surrounding forests Strengthen capacity provincial EMUs for monitoring biodiversity/ environmental impacts. | Medium |
| B13 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Realistic baselines for biodiversity monitoring | <ul style="list-style-type: none"> Continued degradation of Houay Ngoua and other watershed forests Out of date faunal information for watershed – need updating based on field surveys | <ul style="list-style-type: none"> Need accurate status of forest conditions at start of construction phase The IAP recommends that NNP1PC obtain satellite imagery and accurately map the remaining forest areas for Houay Ngoua and other watershed forests | High |
| B14 | Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 | Suitability of Watershed as Biodiversity Offset | <ul style="list-style-type: none"> Developer and MONRE propose to manage watershed for biodiversity offset but area has large number of conflicting developments. Current proposal unlikely to lead to credible offset with permanent biodiversity outcomes | <ul style="list-style-type: none"> Delay decision on Biodiversity Offset to await further field data from the watershed and continue to review alternative options Recommend separating commitments to MONRE for investment in watershed from need to establish credible biodiversity offset. | High |
| * Level of Concern: <ul style="list-style-type: none"> Low - action recommended within 6 months Medium - action recommended within 1-2 months High - immediate action recommended. | | | | | |

Summary of Biodiversity Issues

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|---|--------------------------|--|--|--|-------------------|
| B15 | Site visit 4-11 May 2014 | Appropriate and integrated watershed management activities | The watershed now falls mainly within the boundaries of the new province of Xaysomboun which lacks an integrated spatial plan | The IAP recommends that NNP1PC work with MONRE and environmental offices in Xaysomboun Province to develop an integrated spatial plan for province to guide development activities and watershed management investments | High |
| B16 | Site visit 4-11 May 2014 | Construction activities and increased access will lead to further habitat loss in watershed and along ROW for transmission lines | Villagers already clearing forests around dam site to expand agricultural activities | Develop guidelines and mitigation plans to minimise habitat loss due to construction activities and for restoration and rehabilitation of impacted areas. Pay special attention to likely impact of ROWs transmission lines on elephant populations at Ban Na, Phou Khao Khouay National Protected Area (PKK) | High |
| B17 | Site visit 4-11 May 2014 | Working with MONRE to manage watershed management activities | Current budget request from MONRE focuses mainly on vehicles and salary supplements, – need to refocus on actions | Budgets allocated to MONRE should be based on agreed, targeted and monitorable activities for watershed management. | High |
| B18 | Site visit 4-11 May 2014 | Capacity of environmental units at MONRE to manage watershed management activities | MONRE has very limited capacity at all levels (especially at province and district levels). | Developer's EMO to work with MONRE to seek capacity and mentoring opportunities e.g., involvement of provincial officers in Xaysomboun ISP | High |
| B19 | Site visit 4-11 May 2014 | Alternative options for credible, realistic and manageable biodiversity offsets | Watershed area not suitable for biodiversity offset because of conflicting development issues. Continue to review options other than watershed | Follow up with Environmental Protection Fund (EPF) to assess suitability for biodiversity offset window, targeting funds to proposals with monitorable biodiversity outcomes. | High |
| B20 | Site visit 4-11 May 2014 | Capacity of EMO at NNP1 | Social department effectively staffed but environmental office currently limited manpower and skills base. | Recommend recruiting additional staff, especially with appropriate biodiversity planning, management and mitigation skills | High |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> • Low - action recommended within 6 months • Medium - action recommended within 1-2 months • High - immediate action recommended. | | | | | |

| No. | Reference Document | Issue | Status | IAP comments and recommendations | Level of concern* |
|---|---|--|---|----------------------------------|-------------------|
| Formerly B9 | Site visit, 14-19 January 2013 Site visit, 17-24 November 2013 | Movement of students and teachers to the Thong Nam Pha resettlement site | Resettlement of PAP at 2UR is not expected to take place. | | Closed |
| Formerly B10 | Site visit, 14-19 January 2013 Site visit, 17-24 November 2013 | Quality of translation for the environment team | Team translator was excellent and familiar with environmental terms | | Closed |
| <p>* Level of Concern:</p> <ul style="list-style-type: none"> • Low - action recommended within 6 months • Medium - action recommended within 1-2 months • High - immediate action recommended. | | | | | |

Annex 1: Resettlement Issues

Background

The reservoir of the Nam Ngiep 1 hydropower project (NNP1) will inundate the houses and productive lands of five villages and impact an additional three villages as follows:

- Four villages in the Lower Section of the Reservoir (LR) in Xaysomboun Province (Zone 2LR);
- Three villages in the Upper Section of the Reservoir (UR) in Xaysomboun Province (Zone 2UR); and,
- One village in the Construction Area in Bolikhamxai Province (Zone 3).

The number of project affected people (PAP) to be resettled from villages in Zone 2LR and Zone 3 is estimated at 2,953 from 417 households; consisting of 2,735 people from 384 households in Zone 2LR; and, 218 people from 33 households in Zone 3.

The resettlement site for the PAP is an area of approximately 6,000 ha called Houay Soup, located on the right bank of the Nam Ngiep river under the administrative jurisdiction of Ban Hat Gniun, Bolikhan District, Bolikhamxai Province. An estimated 800 ha of the 6,000 ha is available for the resettlement of the PAP. The IAP was informed that the GOL approved EIA for the NNP1 project mentions the Houay Soup resettlement area. Official assignment of the resettlement area by the GOL to NNP1PC has been approved by provincial and district authorities and is under consideration by the central government level.

An as yet unspecified number of PAP in three villages in Thathom District, Xaysomboun Province will be required to undertake “internal relocation,” namely PAP from Ban Pou, Ban Hatsamkhone, and Ban Piengta (Zone 2UR). PAP from these villages originally were scheduled to be resettled to the Thong Nam Pha resettlement site close to the Thathom District market. However, since most villagers’ houses would not be impacted and mostly agricultural production land will be impacted, the PAP are seeking the following: (i) compensation from the Developer’s to relocate impacted houses within the village; (ii) compensation for the purchase of new agriculture land nearby; (iii) access to old agriculture lands that remain above the reservoir inundation level; and, (iv) change and diversification of livelihood, from agriculture to other occupations.

Resettlement is the responsibility of NNP1PC’s Environment and Social Department (ESD), specifically the Social Management Office (SMO). The ESD leadership is interacting with provincial and district resettlement management units (RMUs) established by the GOL, to prepare for and organize PAP resettlement and relocation. The Resettlement Working Group of the Provincial Resettlement Management and Living Condition Restoration Committee (PRMLCRC) and related GOL provincial authorities are actively participating in and facilitating this process.

Current Resettlement Issues and IAP Recommendations

Issues of concern to the IAP at the Houay Soup resettlement area include the following:¹

¹ The letters and numbers in parenthesis after each issue (e.g., R1) refer to the item number on the issues, requirements, and recommendations matrix in Part 2.

1. **Issue:** An estimated 420 ha of the resettlement area has been designated as suitable for lowland rice production. Following several PAP interviews during the November 2013 site visit, the IAP found that the issue most frequently mentioned by PAP was the poor quality soils at the Houay Soup resettlement area; particularly in the area designated for wet season rice production. Residents of Ban Hat Gniun (including the Hatsaykham hamlet) have used the land at the Houay Soup site for many decades without investing in any soil improvements. As a result soils are depleted and are of generally poor quality.

As noted in the November 2013 IAP report, the NNP1PC Pilot Plan (the Developer's demonstration center and pilot farm) located at the Houay Soup resettlement site is well developed and managed. Workers have demonstrated that with the application of organic soil additives (i.e., bio-fertilizers) and crop rotations with legumes, reasonable rice yields are possible, sufficient to meet PAP food security needs. Some PAP, including those who have visited Houay Soup and the Pilot Plan continue to be unconvinced.

The IAP earlier recommended that NNP1PC prepare an IEE for the Houay Soup river to (i) better understand drainage flows of the area during the long wet season; (ii) identify the importance of the Houay Soup river in local fishing practices; and, (iii) determine if the Houay Soup has any potential to be used for irrigation. As a result, NNP1PC has contracted consultants to prepare an initial environmental examination (IEE) for the Houay Soup. The IAP looks forward to reviewing this IEE. **(Issue R1)**

Recommendation: The IAP was informed that NNP1PC will begin improving soils in the areas at Houay Soup that are designated for rice production prior to resettlement. This activity will begin as soon as the GOL officially approves allocation of the area to NNP1PC. The Developer will then proceed with land preparation for resettlement and land development. The IAP recommends that the highest priority be given to improving soils on the areas designated for rice production.

2. **Issue:** PAP to be resettled from Zone 2LR and Zone 3 (Hatsaykham hamlet) are expected to have several hundred head of large livestock that also will need to be resettled. These livestock will require grazing areas and supplies of forage and fodder. They also will require vaccinations. In addition, livestock will be stressed as a result of the resettlement and will require good grazing areas upon arrival. **(Issue R2)**

Recommendation: The IAP is pleased to note that an area of approximately 500 ha has been designated as grazing land for livestock at the Houay Soup resettlement area. The IAP has been assured by the SMO that these pasture areas will be developed prior to PAP and livestock resettlement. The IAP recommends that the pasture improvement program begin as soon as the resettlement site is official approved by the GOL and allocated for resettlement. It is critical that pasture improvement begin during the upcoming 2014 wet season using improved tropical grasses and legumes recommended by the Livestock Research Center of the National Agriculture and Forestry Research Institute (NAFRI).

3. **Issue:** The IAP was informed earlier that the GOL approved EIA for NNP1 mentions that the Houay Soup area is designated as the resettlement area for PAP from NNP1. Although official authorization from provincial and district officials has been granted, NNP1PC was still awaiting final approval from central government agencies in mid-May 2014.

In addition, the Houay Soup resettlement area reportedly has been used by many PAP from Ban Hat Gniun (and perhaps other nearby communities) for many years. These customary users will need to be compensated for their loss of productive land and other assets in the area. **(Issue R3)**

Recommendation: NNP1PC should follow up with central government agencies to obtain official approval to use the Houay Soup area for PAP resettlement, referring to the earlier approval of the EIA by the central government.

Recommendation: The assets of current land users at Houay Soup should be surveyed and compensation made as soon as provincial and district approval has been obtained. PAP from Ban Hatsaykham who use land in the Houay Soup area and who will be resettled at Houay Soup may not qualify for compensation since their agricultural lands are at Houay Soup.

4. **Issue:** The IAP has been concerned that PAP at Hatsaykham hamlet would be impacted negatively by construction of the dam access road and Head Contractor's camp near the hamlet. In fact, the dam access road is located a reasonable distance from the under-developed hamlet and construction of the Head Contractor's camp has yet to have a visible impact on the hamlet. **(Issue R4)**

NNP1PC will resettle the PAP from Hatsaykham hamlet to the Houay Soup resettlement site before resettling PAP from Xaysomboun Province. This early move seeks to minimize risks to the affected community. The Developer is aware of the risks and potential negative social impacts that Hatsaykham PAP could experience if the local situation is not handled correctly. The SMO committed to the IAP that every effort will be made to "*get it right*" with the Hatsaykham community; to demonstrate to the Hmong communities in Zone 2LR that resettlement can proceed in an orderly and professional manner.

Required: The IAP repeats its requirement that NNP1PC prepares a site-specific environmental and social action plan (E&S Action Plan) for resettlement of PAP from Ban Hatsaykham. This E&S Action Plan is needed to promote and provide measures for engagement with affected communities on potentially negative issues and to ensure that relevant environmental information and social entitlements are disclosed and disseminated to them in a timely manner, consistent with IFC Performance Standard 1. The program on "good faith negotiations" at Hatsaykham is a step in the right direction and is an essential component of the E&S Action Plan.

Recommendation: The IAP recommends that NNP1PC closely monitor the impacts of the construction of the dam access road and the Head Contractor's camp on PAP families at Hatsaykham hamlet. The monitoring should be multi-dimensional, with consultations being undertaken several times each week with women, youth, and community leaders to identify issues emerging from community inter-action with construction workers and the impacts of construction on village life.

5. **Issue:** Similar to commercial development around construction sites and contractors' camps at other hydropower projects in Lao PDR, the IAP observed numerous restaurants and bars already opened and being constructed along the dam access road at Ban Hat Gniun. Some of these bars are located in close vicinity to the local primary school. These facilities are known to serve as vectors for the sale and use of illegal drugs and other substances, prostitution, gambling, and human trafficking. Poor social habits and behavior by construction workers, increased levels of vehicle traffic, and poor governance and weak local administration provide openings for vice

and social immorality. Such conditions impact on both the physical and mental health of PAP in host villages.

The IAP requires zero tolerance of depraved social behavior by employees of the Developer, Head Contractor, and all sub-contractors.

The IAP was informed by a NNP1PC that (i) the Head Contractor has been notified of the zero tolerance policy; (ii) ESD is monitoring on a regular basis; and, (iii) an experienced person has been hired to implement measures to minimize the impacts of camp followers according to the revised Social Development Program. **(Issue R5)**

Recommendations: The IAP recommends that EDS introduces social awareness and management activities in potentially impacted communities through public involvement and educational enhancement programs focusing on host village schools and health education and outreach programs at public health centers throughout the project area. A Social Management Action Program (SMAP) should be developed (modelled on that implemented at the Theun-Hinboun hydropower expansion project) and implemented in all villages impacted by the NNP1 project. The IAP recommends that the community health and safety officer of the Developer and the Head Contractor be held responsible for coordinating with Bolikhan District officials to promote strong law enforcement and community protection activities, and particularly of vulnerable groups in the communities located along dam access road and around labor camps.

Issues of concern to the IAP in the 2UR villages in Thathom District, Xaysomboun Province include the following:

1. **Issue:** The IAP interviewed the Thathom District Governor, village cluster (*kum baan*) officials, and several PAP in Zone 2UR, where an estimated 170 households in Ban Pou, Ban Hatsamkhone, and Ban Piengta villages will be impacted by the project. Officials, community leaders, farmers, and women interviewed by the IAP all confirmed that PAP would either undertake internal relocation (defined by the IAP in the previous report as follows: *PAP that remain in their current houses, but that relocate their agricultural production activities to (privately owned but) unused land nearby; within the boundaries of the impacted villages*); or, they would change their livelihood with support from the project. About 20 households are expected to lose all of their land as a result of reservoir inundation; for which they will be allocated new land by NNP1PC or for which they will be compensated and be eligible for project support for choosing a new livelihood. **(Issue R6)**

During the site visit, the IAP was informed that PAP whose houses, but not their agricultural land, will be impacted by the reservoir had moved to other locations in the village. They will seek compensation from the Developer to cover their relocation costs at the appropriate time.

In addition, the agricultural land of some PAP will be separated from the affected villages by branches of the reservoir, as a result of inundation. NNP1PC has agreed to construct farm tracks that will allow access to existing agricultural lands as appropriate.

Recommendations: The Developer should clarify the relocation plans of PAP in the 2UR area household by household through *good faith negotiations*. Agricultural land for internal relocation should be identified with the collaboration of the district RMU, and procured for allocation to PAP choosing to remain in agriculture. The IAP recommends that the Developer prepare an internal relocation plan for each 2UR

village in a participatory manner that (i) identifies the exact number of individuals (families, households) that will be impacted; (ii) clarifies agricultural activities that PAP wish to have promoted; (iii) proposes alternative livelihood development for interested PAP; (iv) clarifies how the reservoir drawdown zones will be used by PAP; and, (v) sets forth a fisheries management plan for reservoir fisheries and use by PAP.

Organizational and institutional issues of concern to the IAP include the following:

1. **Issue:** Although many organizational and institutional issues that troubled the project during the November 2013 IAP mission have been addressed, important issues remain. The IAP considers that the most serious organizational issue is the weak monitoring of community health and safety by designated employees of the Developer, the Head Contractor, and various sub-contractors. During the most recent site visit the IAP noted (i) engagement of under-age workers; (ii) the danger of human trafficking of village children and under-age sex workers; and, (iii) noise and behavior at bars and restaurants along the access road to the NNP1 dam, particularly at Ban Hat Gniun. **(Issue R7)**

Recommendation: The IAP recommends that NNP1PC, the Head Contractor, and sub-contractors intensify the monitoring of community health and safety to prevent damage to the company and its reputation. Special attention should be paid to engagement of under-age workers; the danger of human trafficking; and, activities and behavior at village bars and restaurants by employees of the Developer, Head Contractor, and sub-contractors. The respective companies' Community health and safety personnel should collaborate with district officials and village development committees to monitor the off-hours behavior of workers. Such monitoring is common among the mining companies in Lao PDR and the Developer should visit the mining projects to learn from company representatives and local officials how the off-hours behavior of workers is controlled.

2. **Issue:** The ESD has engaged additional professional staff. In particular, the SMO is now staffed with experienced and knowledgeable professionals who understand the resettlement process. SMO staff are competent and are able to anticipate potential problems, therefore preventing their arising or at least minimizing their impacts, thus helping the Developer to reduce wasteful expenditures. Staff organization charts and terms of reference are now available adequately clarifying environmental and social operations of NNP1PC's challenging resettlement program. Several issues remain, however, including: (i) the weakness of community health and safety personnel; (ii) slow administrative processing of employee contracts, unfairly leaving some employees without contracts for several months; and, (iii) the need for practice sessions to adequately prepare staff when engaging PAP in good faith negotiations. **(Issue R8)**

- **Recommendations:** The IAP recommends that the Developer intensify monitoring of the NNP1PC contractor and all sub-contractors and the impacts of their construction activities on PAP and villages along the access road to the NNP1 dam. The IAP also recommends that all staff be provided with contracts prior to beginning work at NNP1PC; and, as contracts expire, extensions should be provided on a timely basis – without excessive delays.

3. **Issue:** Although good faith negotiations have begun in Hatsaykham hamlet, significant improvement is needed in company presentations to ensure understanding by PAP. The Nam Ngiep 1 case is particularly sensitive in that nearly all of the resettlers are from an ethnic minority group (Hmong). The presentations

observed by the IAP during the most recent field visit to Hatsaykham hamlet demonstrated to the IAP that there is need for significant improvement in NNP1PC's ability to make presentations to PAP that are effective yet easily understandable to poor and mostly illiterate PAP. **(Issue R8)**

- **Recommendation:** The presentations made at the good faith negotiations observed by the IAP were inadequate. Practice sessions should be held prior to making presentations to PAP on important issues like entitlements and the resettlement process. Questions likely to be posed by PAP should be anticipated and answers sharpened so that there is no chance for misunderstanding by mostly illiterate PAP. Presentations should be made only in Lao or Hmong languages. If most of the PAP in the meeting are ethnic Hmong, the Hmong language should be the principal language used for informing PAP about entitlements and the resettlement process. Lao law should not be preached to villagers who usually have only a primary level of education. If SMO wishes to introduce legal training for women and PAP, the IAP wishes to encourage that activity, but to focus groups and not to general village meetings.
4. **Issue:** The Developer is expected to contribute to capacity strengthening of MONRE and to financially assist in establishing environmental management units (EMUs), which will be staffed by provincial and district officials from project affected areas. The role of the EMU is to monitor implementation of the EMP and to report on its adequacy and effectiveness to MONRE and the Developer. Based on IAP discussions with provincial and district officials, the role and responsibilities of the EMU are unclear. The duties of MONRE also have been expanded to include the departments of Land Planning, Forest Resource Management, and Water Resources Management. **(Issue R9)**

Recommendations: The IAP understands that MONRE will receive support from the EMSP directed by Peter Jensen. The focus initially will be on Xaysomboun Province, involving all project affected districts in an integrated land use map building and environment awareness training program. The provincial and district EMUs will be created as a result of support from this program.

Resettlement and Social Photos



Construction laborer working on the dam access road competing with villagers for scarce NTFPs in a Provincial Protected Area



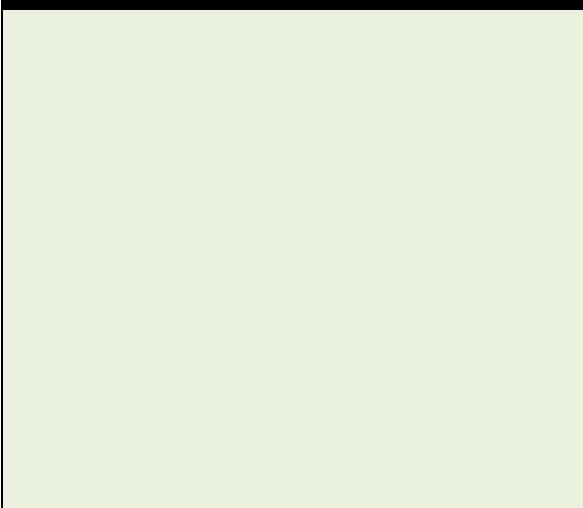
Good faith negotiations / public consultation at Hatsaykham hamlet, Ban Hat Gniun, Bolikhan District, May 2014



Beer bar and drinking restaurant across the street from the primary school at Ban Hat Gniun, Bolikhan District, along the dam access road.



At a new small shop in Ban Hatsaykham, Zone 3, several young project workers convince young village (and outside) girls to drink together. This may lead to sexual assault, sexual abuse, and other crimes.



Hmong woman at Hatsaykham hamlet fetching water from the Nam Ngiep river for household use, as is customary during the dry season.



The water is kept for 2-3 days before being used for cooking and drinking, causing diarrhea, itchy skin, red-eyes, and conflicts in the village. Many households cannot afford clean water from other sources.

Annex 2: Social Issues

Summary of Social Specialists Inputs

The social specialist's third site visit for the Nam Ngiep 1 hydropower project (NNP1 PC) took place on 4-11 May 2014.

The GOL created a new province, Xaysomboun Province, on 16 December 2013, which encompasses the directly affected four villages of the Project in Zone 2LR.

In this context, the social specialist met with the new provincial governor (Dr. Sombath Yialeher) to learn about his policy regarding the NNP1 PC Project and the PAP. The social specialist also met the Hom District Chief (Mr. Khampong Khamseeda), since Hom District is a new district under Xaysomboun Province.

The social specialist also visited the 5 directly affected villages: 4 villages in Zone 2LR, namely: Ban Namyouak, Ban Sopyouak, Ban Soppouan, and Ban Houaypamom in Hom District, Xaysomboun Province; and, one village in Zone 3, at Ban Hatsaykham hamlet of Ban Hat Gniun village, Bolikhan District, Bolikhamxay Province; and, one indirectly affected village in Zone 3, at Ban Thaheua, Bolikhan District. The social specialist visited Ban Hatsaykham hamlet twice, to recheck issues regarding polluted water that related to the construction of a project bridge. In addition, the social specialist attended the provincial and ADB public consultation meeting in Bolikhamxay Province.

The social specialist also attended the Hmong indigenous peoples meeting in Ban Hatsaykham hamlet, Ban Hat Gniun village, Bolikhan District (with ADB staff and Ms. Chansouk Insouvanh – Souky, Mr. Pao Lor and others) during the afternoon of 8 May 2014, at which there were about 30 Hmong, both males and females, who joined the meeting.

During this site visit, the social specialist met with 51 PAP; 47 Hmong villagers and 4 are Lao Loum villagers, in informal meetings from the five directly affected Hmong villages of Zone 2LR and Zone 3. In addition, the social specialist met two Lao Loum villagers in Ban Thaheua, namely: Mr. Boonhiang, the village headman, and Mrs. Dinkham, the chairperson for the Lao Women's Union of Ban Thaheua in Zone 3. At Ban Thaheua the discussions were about social issues, namely: prevention and protection of violence, drugs, human trafficking, sexual assault; and, water supply issues. The village leaders must work on these issues closely with the Bolikhan District authorities and with the Project.

The social specialist spent 2-3 hours meeting with PAP in each village, including discussions with elders, community leaders, and youth.

The detailed schedule for the social specialist follows:

May 4, 2014 - Arrival Vientiane, Lao PDR. Prepared documents for meeting with NNP1 PC

May 5, 2014 – Debriefing Meeting with NNP1 PC in the morning and departed to Xaysomboun Province in the afternoon.

May 6, 2014 – in the morning: a formal meeting with Xaysomboun Governor (Dr. Sombath Yialeher), the Chief of Lao Front for National Construction of Xaysomboun Province, and other higher government officials in the governor's office.

May 6, 2014 – in the afternoon: a formal meeting with the Chief of Hom District (Mr.Khampong Khamseeda), Xaysomboun Province.

May 6, 2014 – in the evening: informal meetings with Hmong elders and leaders (both males and females) of Ban Namyouak and Ban Sopyouak. There were 26 PAP attended the meetings: stayed overnight in Ban Sopyouak.

May 7, 2014 – informal meetings with Hmong elders and leaders (both males and females) of Ban Houaypamom and Ban Soppuan. There were 16 PAP attended the meetings.

May 8, 2014 – in the morning: Formal meeting with Mr. Khamsing Sayphouvong, Deputy Director of Department of Energy and Mines of Bolikhamxay Province and Mr. Khankeo Sonesaksith, Deputy Secretary of district party committee and Deputy District Chief of Bolikhan District, Bolikhamxay Province.

May 8, 2014 – in the afternoon: Informal meeting with Mr. Boonhiang, the Headman of Ban Thaheua and Mrs. Khamdin, Chairperson of Women Group of Ban Thaheua (Zone 3)

May 8, 2014 – in the afternoon: Informal meeting PAP in Ban Hatsaykham, as well as joined the NNP1 PC staff (Ms. Chansouk Insouvanh - Souky, Mr. Pao Lor, and others) meeting with PAP in Ban Hatsaykham hamlet, Zone 3

May 9, 2014 - in the morning: Discussion with PAP of Ban Hatsaykham on the polluted water that is related to the bridge construction of the Project, across the Nam Ngiep river.

May 9, 2014 - in the afternoon: Attended Public Consultation Meeting in Pakxan, Bolikhamxay Province.

May 10, 2014 - Meeting and presentation to NNP1 PC staff and ADB staff in NNP1 PC Head Office in Vientiane

May 11, 2014 – NNP1 PC documents preparation and departure to Bangkok, Thailand.

A summary of the recommendations of the social specialist are included on the social portion of the summary matrix in Part 2.

Additional recommendations of the social specialist include the following:

1. The IAP recommends that more community participation is needed to prevent petty crime: e.g., related to construction of the dam access road; gasoline was stolen twice in Ban Hatsaykham hamlet; otherwise there will be more conflicts among people.
2. The IAP recommends that in addressing village level conflicts representatives of the Lao Front for National Construction should be mobilized.
3. The IAP recommends that the Hmong language be used as much as possible in any meeting with Hmong PAP and in good faith negotiations in Hmong villages. This is a crucial issue for the Hmong PAP who are directly impacted by the project; especially Hmong women and elders who cannot speak, read, or write Lao (or English).

Annex 3: Environmental Issues

- 1. Issue:** The planned development of several hydropower projects in the Nam Ngiep river basin will result in water, land use, biodiversity conservation, and deforestation conflicts. These issues are already apparent in our site visits throughout the river basin. A Strategic Environmental Assessment (SEA) of the Hydropower Sector in Lao PDR is needed to assess the impacts of planned hydropower developments on the National Protected Areas (NPAs), provincial protected and reserved forests, water resources, fisheries, land concessions and land availability, and other related environmental issues (environmental flows, pollution control, and waste management). The Environmental Protection Law (Revised Version), National Assembly, No: 29/NA, Vientiane Capital City, 18 December 2012 mentions that “*SEA shall be implemented during the development of policies, strategies, plans and programs, particularly of energy and mining, agriculture and forestry, industry and commerce, public works and transportation, post-telecommunication and communication, information-culture and tourism sector . . .*” Hydropower is certainly a key development sector for Lao PDR, and the Ministry of Energy and Mines (MEM) and the Ministry of Natural Resources and Environment (MONRE) should be encouraged to seek funds to undertake this SEA for the hydropower section and in particular for the Nam Ngiep river basin (as a SEA of the regional development plan). ADB should consider providing technical and financial assistance to the GOL to facilitate this recommended SEA.

Recommendation: The Nam Ngiep 1 Power Company Ltd. (NNP1PC) should request a meeting with MEM and MONRE officials to discuss (i) status of a SEA for the hydropower sector; and, (ii) need for a SEA or CIA specifically designed to cover all developments of the Nam Ngiep river basin.

- 2. Issue:** NNP1PC is required by the Concession Agreement (CA) to contribute to capacity building of MONRE and to financially assist in establishing an environmental management unit (EMU), which will be manned by provincial and district representatives from project affected areas. The role of the EMU is to monitor on implementation of the environmental management plan (EMP) and to report on its adequacy and effectiveness as well as investigating grievances from project-impacted-persons dealing with environmental issues. Based on discussions held between the IAP and Provincial and District Officers during site visit #1 (January 2013), the role and responsibilities of the EMU were unclear because of jurisdictional boundaries (the EMU spanned three provinces). This has been simplified with the establishment of the new province, Xaisomboun, which basically covers the Nam Ngiep river basin. However there are three hydropower projects undergoing development at the same time, and the institutional overlaps for monitoring, reporting duties, and budget requirements need to be clarified for central (MONRE), provincial (PONRE), and district (DONRE) level administration. The duties of MONRE also have expanded to include the departments of Land Planning, Forest Resource Management, and Water Resources Management, and thus provincial and district staff assigned to these activities believe that they should be represented or involved in EMU monitoring and reporting activities as they have connecting or overlapping environmental issues.

Recommendations: The IAP earlier recommended that ADB assist MONRE in conducting a workshop to review the functions and duties of the EMU for the Nam Ngiep

watershed, to include the “lessons learned” from the Nam Theun 2 and Theun-Hinboun Expansion projects. ADB responded that this was the responsibility of the GoL. The IAP recommends that NNP1PC meet with MONRE and offer to use some of the funds budgeted for capacity building of MONRE to sponsor this workshop. Key issues to be discussed should include (1) how the EMU should manage these environmental concerns at the PONRE and DONRE levels; (2) how the EMU should monitor and report on the hydropower project developments in the Province; and, (3) to review and clarify the assigned duties and the financial needs of the EMU to cover the Nam Ngiep River Basin. The IAP reiterates that the preliminary budget developed for the EMU in the EMP will be inadequate to cover the district and provincial staff assigned to participate in environmental conservation monitoring activities. The EMU budget should be re-evaluated and shared with other hydropower developers in the Nam Ngiep river basin.

3. **Issue:** The quality of the water supply for Ban Hatxaikham hamlet is considered below water quality standards prescribed in the CA (Annex C Social and Environmental Commitments). The IAP met with numerous villagers who believe that *“the river is being contaminated by the workers of the contractor (of the dam access road) who use the river for their toilet and waste disposal needs”*. The villagers stated that *“their children are coming down with more cases of diarrhea and dysentery this year due to the contaminated water supply”*. The IAP sampled water sources at two households in the village, stored water used for cooking and drinking purposes, and boiled water served at the evening meal. Test parameters selected were turbidity, fecal coliform organisms, and total coliform organisms. The IAP recommended that these water samples be sent to Earth Systems Lao for analysis at their environmental laboratory and the results reported back when available. The results will help to provide explanation to the Hatxaikham villagers about the quality and safeness of their water supply for food preparation and drinking purposes. The results will also be of interest to NNP1PC in seeking safe water supply options for the Hatxaikham villagers.

Recommendations: NNP1PC should evaluate rural water supply options for developing a reliable and appropriate water supply system for the Hatxaikham community. The selected option should be presented to community leaders for their view and comments, and if agreed a pilot rural water supply unit should be built and tested for use and operation by the villagers themselves. Comments should be received from the villagers with respect to their perception of water quality, taste and acceptance of the water for water supply, and the same water parameters scientifically tested for the treated water product to show a comparison with traditional water sources and to prove to the villagers that the water from the new rural water supply meets with the water quality standards of the CA and is safe for household water uses. Future surveys of the level of *cases of diarrhea and dysentery* in children in the village should be conducted to build baseline data on this important health issue.

4. **Issue:** The management of wastes from the construction sites and construction camps are not in complete compliance with the guidelines of the ESMMP-CP. IAP visited the work camps and construction sites along the dam access road. The Contractor has built toilets, a solid waste collection, separation and storage facility, kitchen wastes collection, and construction wastes storage facility. But these facilities are not up to ESMMP-CP standards. The waste storage facility shows all types of construction, vehicle repair, solid and hazardous wastes mixed together. There is no concrete or impermeable floor construction, no roof to protect against rains, no drainage to protect the area from flooding, no oil-water separator, etc. Standard environmental protection measures are missing. At construction sites near the river, no waste storage area was located, no temporary toilets were available for the workers, and other safety and environmental

protection facilities were missing. It is realized that much of the road work is temporary, but environmental protective measures are still needed. These are listed in the ESMMP-CP but have yet to be implemented.

Recommendations: NNP1PC needs to continue working with the Head Contractor and insist that he follows the guidelines and implements the recommendations shown in the report Access Road Rehabilitation – Environmental Audit and Corrective Action Plan Report, February 2014.

Additional IAP recommendations are as follows:

1. The Head Contractor should hire an Environmental Manager for the Access Road Contract.
2. A small team of inspectors is needed to ensure implementation of the ESMMP-CP.
3. The EMO needs additional field staff to monitor and enforce contract commitments.
4. The monthly visits of Earth Systems Lao to audit the Contractor are inadequate to cover daily supervision work.
5. Strict attention to management of construction, vehicle and sanitation wastes are needed all along the access road construction sites (not just at the work camps).

Environmental Photos



Confluence of Nam Youak and Nam Ngiep rivers where the area is expected to be inundated by the new NNP1 reservoir. Note the difference in water quality of the two rivers.



Timber extraction is on-going in all the "protected" forest areas, where the land is expected to be inundated by the new reservoir



Typical collection of water supply from the Nam Ngiep river by villagers of Hatxaikham hamlet. River water is stored for water supply purposes during the cool and hot seasons (mid-October to mid-May). Rain water is collected from roof drains during the wet season.



Sampling of water sources to test for pathogenic microorganisms to confirm safeness of water supply in Hatxaikham hamlet for household use.



Annex 4: Biodiversity Issues

3rd IAP visit to NNP1 on 4-11 May 2014

This report is based on visits by the Biodiversity expert and other members of the IAP to the Nam Ngiep 1 dam and resettlement sites in the Nam Ngiep watershed, discussions with the Developer, ADB and ERM teams, and participation in a public consultation in Vientiane.

Since the first IAP visit in January 2013, considerable progress has been made in addressing many of the issues raised (e.g., the need for fisheries surveys). Nevertheless several important issues remain, including lack of information available on wildlife populations and distributions within the watershed area. This impedes the ability to make informed decisions about suitable options for a biodiversity offset (see below). A public workshop was held in February 2014 to discuss a range of biodiversity offset options. Subsequently NNP1PC and MONRE decided that the watershed should be the offset area. The IAP learned of this decision only in May, at the start of the IAP mission. The IAP has serious concerns about both site selection and the decision process. There is also serious concern about the expedited timeframe to 'decide' on the Offset Package by end of May 2014.

Background

ADB safeguards require the project proponents to avoid loss of critical habitats and to mitigate the impacts of development. In addition to mitigation to minimize environmental impacts caused by construction and operational activities, NNP1PC is required to establish a biodiversity offset to compensate for biodiversity losses attributable to the development.

Prior to endorsing the NNP1 project, ADB management requires confirmation on the following issues:

1) a: Sufficient basis to conclude the absence in the Project-affected areas of critical habitat (ADB's Safeguard Policy); and, b: Suitability of identified potential terrestrial and aquatic offset sites; and,

(2) Written commitment of the GOL to implement the biodiversity offset program at the identified potential offset sites.

1. Issue: Critical Habitat Loss along Access Road

The access road to the dam follows the current village access road through the Houay Ngoua provincial reserve, a remnant area of forest. ADB had expressed concern about whether this area was critical habitat. The forest was already degraded but in late 2013 Electricité de Lao (EDL) cleared wide strips of the forest for access for power lines for rural electrification; this was accompanied by logging by a Vietnamese company, with permission from the provincial authorities. By May 2014 the Houay Ngoua area was severely degraded, with all large trees removed and the area to the east of the road re-designated for agricultural clearance by the provincial governor. During the IAP visit in May 2014, villagers were clearing and burning this area for shifting cultivation during the 2014 wet season.

Prior to the EDL actions, the Houay Ngoua forest reserve was already a relatively small area (4,590 ha) of disturbed forest disconnected from other forest blocks. Biodiversity and wildlife values in the reserve were already reduced by habitat loss, fragmentation and hunting. Biological field surveys recorded the presence of some threatened, but widespread, tree species. Much of the area has been hunted out. The most recent faunal survey (2013) lists only 38 species including just one mammal (the bamboo bat). Given NNP1PC's responsibility to minimise the impacts along the access road, it is important to establish the current biodiversity baseline situation, including the area of reserve forest remaining in Houay Ngoua.

NNP1PC is providing financial support to provincial authorities for manned checkpoints on the access road and for regular patrols. NNP1PC should work with provincial authorities to increase protection and monitoring of remaining watershed forests as well as the degraded Houay Ngoua area.

Recommendation

Establish accurate baseline data for the current status of forest reserve (current size) and fauna. Work with PONRE and DAFO to mark and protect new reserve boundaries. Monitor status of fauna based on baseline data from the 2013 field surveys.

Recommendation Continue to upgrade current access road to the dam site but take appropriate action to minimize and mitigate environmental and social impacts, including working with PONRE to restrict new forest clearance in the watershed. Purchase satellite imagery for the whole catchment project areas and Houay Ngoua as a basis for monitoring forest status.

Recommendation: Continue support to provincial authorities for check points and spot checks for vehicles and require contractors to implement with a **zero tolerance** policy for illegal removal of logs, NTFPs, wildlife.

2. Issue: Proposal of the Nam Ngiep watershed as a biodiversity offset

Biodiversity offsets are activities that are specifically designed to compensate for biodiversity loss and can have measurable impacts and gains. Offsets should:

- (i) not conflict with existing communities' uses or access, in a manner which cannot be resolved by compensation by the Developer; and,
- (ii) not conflict with any existing mining concessions or other major development activities likely to have negative impacts on terrestrial and aquatic biodiversity (e.g., logging activities).

Given the extent of ongoing and planned developments in Lao PDR, it will be important to ensure that any proposed offsets are not likely to conflict with other government land use and development decisions (e.g., production forests, hydro dams, etc.).

ERM provided a useful review of a range of potential biodiversity offsets and conducted a public workshop in February 2014 to discuss feasible options and government preferences. Unfortunately after the workshop NNP1PC appears to have agreed with MONRE that any biodiversity offset activities would be restricted to the Nam Ngiep watershed, focused only on protection forests, and that all funding would be channeled through MONRE. ***The IAP has serious concerns about site selection, the decision process, and timelines.***

- (i) ***Lack of biodiversity information.*** There is currently very little information available on biodiversity values and status of wildlife populations in the watershed area. The potential list of wildlife species is based mainly on literature surveys and estimates of likely occurrence based on habitat requirements rather than on field surveys. Discussions with communities suggest that the fauna is already impoverished through hunting. More detailed surveys are not planned until the next dry season
- (ii) ***Conflicts with Development.*** There are multiple conflicting land uses in the lower Nam Ngiep watershed including production forests, mining concessions, and community use for shifting cultivation. The GOL has no appetite to re-designate production forests as protected areas. The NNP1PC-MONRE proposal, prepared by ERM, therefore recommends that the offset area should be restricted to areas already designated as ***protection forests*** on very steep slopes. These areas are not prime habitat for many species of concern and are not equivalent offsets for lost lowland and riverine habitats.
- (iii) ***Capacity.*** MONRE, and its provincial and district offices, has limited capacity to protect and manage the watershed. Most of the watershed area now falls within the boundaries of the new Xaysomboun (XSB) province, which lacks an integrated spatial development plan. The MONRE proposal also presents additional challenges associated with creating new institutions, including establishing new watershed committees and offset advisory committees.
- (iv) ***Credibility.*** A biodiversity offset needs to be credible, realistic, implementable and permanent, and likely to achieve significant biodiversity outcomes. Based on biodiversity information available, community use and conflicting and overlapping developments in the Nam Ngiep watershed, the watershed area itself seems questionable as a biodiversity offset and a final decision seems premature.

Recommendation

The IAP recommends separating discussions regarding NNP1PC interventions into two categories a) watershed management for mitigation; and, b) biodiversity offset. Both require further consideration and review. Since activities are expected to cover an extended period of time (27 years) it is crucial that funds are invested effectively for maximum positive impacts.

Recommendation

Delay decision on biodiversity offset to await further field data from the watershed and continue to review alternative options.

3. Issue: Watershed Management

Watershed management activities would clearly take place within the watershed. Since NNP1PC cannot take responsibility for all development activities, in the whole it would be best to target activities mainly to the lower Nam Ngiep (the project area) as defined in the ERM report but even that area includes production forests and overlapping mining concessions.

Integrated Spatial Plan for XSB. Since the boundaries of the newly established province of Xaysomboun overlap the Nam Ngiep watershed and most of the project area, it would be extremely useful to support the provincial authorities and MONRE to prepare an Integrated Spatial Plan (ISP) to help direct future development planning in the province. The provincial governor would welcome such support. Project watershed management activities (reforestation, habitat protection, sedimentation control) in the lower watershed could then be aligned with the ISP.

Based on the IAP's discussions with the EU-funded project at MONRE and MONRE, this process would take approximately 12 months, involve provincial and district environmental offices and cost approximately \$40,000-50,000.

Recommendation

Work with provincial authorities and MONRE to support an integrated spatial plan for XSB.

4. Issue: Wildlife Surveys within Lower Nam Ngiep catchment area

The company has supported detailed surveys on fish species and populations (Kottelat et al.) which seem to show little or no impact of the project on key fish species as all species occur in tributaries not impacted by the dam or construction activities. A short field survey on primates has also been undertaken (gibbons, leaf monkeys). Other data on animal species present in the catchment is very limited, and in both the 2007 and 2013 EAs is based mainly on literature surveys, with species lists based on possible occurrence in certain habitats though not recorded in the field. Many of the key species of concern are lowland species which (if present) will be further impacted by loss of lower elevation habitats either directly by loss of habitat through inundation of the reservoir or indirectly through the project opening up increased access (roads and reservoirs) for agriculture and hunting. It is also likely that there has been further biodiversity loss since the 2007 review, in part because of activities being undertaken in anticipation of the project. For example logging is currently underway around 2LR (lower reservoir) as part of "clearance for the reservoir" although the company was not informed.

Additional field surveys are needed to ascertain what species are present in the lower watershed, where and in what numbers. This would be a **baseline survey**. Such a survey would also identify what actions are needed for mitigation (e.g., measures for protection, restricted access) and would be a baseline for future monitoring of project impacts. Previous field studies were undertaken by ISTR, Thailand. But there are also good conservation NGOs and universities in Lao PDR that could assist with surveys and monitoring.

Recommendation

Additional field surveys during next dry season to determine species distributions and population size to ascertain necessary habitat and wildlife protection and monitoring measures in the project watershed area.

5. Issue Watershed Management Activities

According to the Concession agreement the Watershed Management Fund has an allocation of \$6.24m over 27years. NNP1PC should work with MONRE to determine appropriate watershed management activities: - what is needed, where, when and how that activity would be delivered and by whom (MONRE, community, NGO, contractor etc.). Any budget and equipment should be linked to agreed activities with clear objectives and verifiable indicators. At both MONRE and provincial and district levels (PONRE, DONRE) there will be a need for capacity building and mentoring, involving EMU staff in planning, implementation and monitoring activities as part of capacity building. (The Concession Agreement currently allocates \$165,000 for capacity building at MONRE).

It will be especially important to strengthen capacity at the **provincial** and **district** level in the new province of XSB. Engaging environmental staff in preparation of an ISP for XSB would be a good start.

Recommendation: Strengthen capacity of provincial EMUs for spatial planning, monitoring biodiversity, and other environmental impacts.

6. Issue: Other Mitigation Activities Associated with Construction

Inevitably there will be further loss of habitat and fragmentation due to construction activities and increased access associated with infrastructure, access roads and transmission lines as well as inundation of reservoirs. There will also be eutrophication from decay of biomass in the reservoir and additional sedimentation which will impact on aquatic habitats, fisheries, and other aquatic species.

It will be important to minimize habitat loss both in the watershed and along rights of way associated with transmissions lines. Particular measures need to be reviewed to protect the elephant population in Ban Na next to the Phou Khao Khouay NPA. NNP1PC should develop effective measures to restrict clearances and hunting in the watershed and along transmission lines and establish clear guidelines for reforestation and restoration efforts (with native species) to restore areas damaged by construction.

Recommendation

Develop guidelines and mitigation plans to minimise loss of habitat due to construction activities and for restoration and rehabilitation of impacted areas.

7. Issue: Biodiversity Offset – Other Options

Establishing a protection forest in the lower Nam Ngiep watershed as a provincial protected area (as suggested in the framework paper) would not adequately meet the offset requirement of "like for like" and would be unlikely to prevent further net loss of biodiversity. Given the limited data and threats to biodiversity in the watershed, it would be premature to move ahead with the proposed biodiversity framework with MONRE at this time. **Accordingly the IAP recommends further review of other options prior to any final decision on a biodiversity offset.**

Lao PDR already has several national protected areas of high biodiversity value, all of which are under-resourced and require strengthened management. As one option, the ERM offset review suggested a cumulative offset fund to support such areas; with the fund able to accept donations from NNP1PC and other development activities. Lao PDR already has an Environmental Protection Fund, under the Prime Minister's Office, which could serve such a function as part of a biodiversity offset. The EPF has been endorsed by other donor

agencies (e.g., the World Bank) which has recently awarded a \$40 million project to strengthen protected areas, combat wildlife trade, and strengthen environmental standards. The EPF will operate on a competitive basis, accepting proposals that meet specific biodiversity criteria. The EPF has the potential to create a new biodiversity offset window with NNP1 as an early contributor.

There seems to be many advantages to the Developer of utilising the EPF:

- Existing funding mechanism under GOL within the Prime Minister's Office
- Independent and transparent review of proposals against agreed biodiversity criteria
- Resources targeted to verifiable biodiversity outcomes
- Independent monitoring
- Engagement with a programme being supervised by World Bank
- Cost effective, accountable and sustainable mechanism

According to the Concession Agreement budget there is already an allocation to the EPF of \$990,000. If this is combined with funds allocated for a Biodiversity Offset (another \$3.7 million) this provides seed funding of \$4.7 million. ERM advises that NNP1PC is considering allocating another \$5 million towards species-specific activities. These species activities would most likely need to be outside the Nam Ngiep watershed area, focusing on protected areas that still harbor viable populations of threatened species. Together these three sources give a potential total of \$9.7 million for a biodiversity offset. This sum could be allocated as a one off payment or through a phased approach but since the funds need to support activities over a long period of time it would be useful to allocate as a lump sum that could be invested and generate interests for additional outcome.

Recommendation

Follow up with the EPF to determine whether this could provide a useful mechanism for a biodiversity offset.

8. Issue: Proposed offset activities for fisheries

Establishing a suitable offset for aquatic biodiversity is challenging since aquatic systems are impacted by activities way beyond their immediate boundaries. Hydropower dams, mining, and logging activities are common on most Lao rivers and no suitable candidate area has been identified for an aquatic offset. Instead a proposal has been made to captive breed certain species of threatened fish. Captive breeding systems are usually established with the premise that eventually individuals will be returned to the wild to appropriate habitats. It would be useful to better understand the rationale behind the proposal, including source areas and likely reintroduction sites. Similarly it would be useful to understand the proposal to promote aquaculture in the reservoir and whether the intent is to reintroduce native fish or to introduce exotics.

Recommendation

Provide more information on rationale for fisheries captive breeding scheme and link (if any) to proposed aquaculture in the reservoir.

All of these comments and concerns were shared with NNP1PC staff and ADB at the wrap up meeting and in subsequent communications.