

# Independent Advisory Panel Report

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25 July 2016

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

Report Number 7 on the Seventh Site Visit, 15-22 May 2016

Prepared by the Independent Advisory Panel for the Asian Development Bank

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**Report Number 7  
of the Independent Advisory Panel  
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Lao PDR  
Seventh Site Visit, 15-22 May 2016**

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## List of acronyms and abbreviations

ADB	Asian Development Bank
AIP	Annual implementation plan
BAC	Biodiversity Offset Advisory Committee
BKX	Bolikhamxay Province
BRP	Biomass removal plan
CA	Concession agreement
DEQP	Department of Environmental Quality Promotion
DFO	District forestry office
DFRM	Department of Forest Resources Management
DG	Director-general
DoLA	Department of Land Administration
DONRE	District office of natural resources and environment
E&S	Environment and social
EGATi	Electric Generating Authority of Thailand International Company
EHS	Environmental health and safety
EIA	Environmental impacts assessment
EMP	Environmental management plan
ESMMP-CP	Environmental and social management and monitoring plan construction period
EMO	Environmental Management Office
EMU	Environmental Management Unit
EPF	Environmental Protection Fund
ERM	Environmental Resources Management (consulting company)
ESD	Environment and Social Division
ESIA	Environmental and social impacts assessment
GOL	Government of Lao PDR
Ha	Hectare
IAP	Independent Advisory Panel
IEE	Initial environmental examination
IFC	International Finance Corporation, World Bank Group
IP	Indigenous people
ISP	Integrated spatial planning / Invasive species program
IWMP	Integrated watershed management plan
LR	Lower reservoir
LTA	Lenders' technical advisor
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
NRM	Natural resources management
NTFPs	Non-timber forest products
PAP	Project affected people
PFA	National protection forest area
PONRE	Provincial office of natural resources and environment
PPA	Provincial protected area
PRMLCRC	Provincial Resettlement Management and Living Condition Restoration Committee
REMDP/REDP	Resettlement and Ethnic Minority Development Plan
RMU	Resettlement Management Unit
ROW	Right-of-way
SEA	Strategic environmental assessment
SMO	Social Management Office
TD	Technical Division
UR	Upper reservoir
WCS	Wildlife Conservation Society
WMO	Watershed Management Office
WMP	Watershed management plan
WWTP	Waste water treatment plant
XSB	Xaysomboun Province

# Report Number 7 of the Independent Advisory Panel on the Nam Ngiep 1 Hydropower Project, Lao PDR

## Seventh Site Visit, 15-22 May 2016

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### Introduction

1. The Independent Advisory Panel (IAP) was pleased to be working with representatives of the Asian Development Bank (ADB) and the Lenders' Technical Advisors (LTA) again during the IAP's site visit in May 2016. The ADB representatives consisted of the following specialists: Ms. Kurumi Fukaya, Ms Joyce Munsayac, Mr Vijay Joshi, and ADB consultants Ms Elizabeth Mann, Mr William Robichaud, and Anik Ajmera. The LTA environmental safeguards specialist, Mr Ettore Romagnoli also accompanied the IAP specialists during the site visit.
2. The IAP noted several **positive** developments during the site visit:
  - NNP1PC relations with GOL units has improved at all levels, province, district, and the RMU.
  - Livelihood demonstrations and development are underway in all zones and projecting an improved image for NNP1PC as well as providing important benefits to PAP.
  - Asset registration and payment of compensation is well underway in many zones and nearly completed in some locations.
  - NNP1PC staff continue to provide good follow-up on community health and safety in an attempt to keep the camp-follower population and social degeneration low.
  - Infrastructure development at Houay Soup is progressing well, but should be accelerated. There is a good level of participation of PAP in the quality control of house construction at Houay Soup.
  - Provincial and district authorities are carefully following the resettlement flow charts that were prepared for the GOL by NNP1PC.
  - The flow of funds and procurement issues have been satisfactorily clarified and are moving efficiently.
  - Progress with the biodiversity offset component is regarded as satisfactory.
  - Progress with developing the integrated watershed management plan (IWMP) has been much slower and there is still a need to recruit a watershed management team, with international and national experts to lead this work.
3. The IAP also notes the following **challenges** that NNP1PC is facing:
  - There are 44 PAP families in Zone 2LR who continue to refuse to participate in the asset survey. NNP1PC has turned the matter over to the provincial authorities to seek resolution to PAP issues.
  - Numerous grievances are outstanding after being ignored by the RMU and NNP1PC technicians. The grievance procedure requires that all grievances be addressed within 15 days of submission by the affected party. NNP1PC is non-compliant with its own grievance procedures on this matter.
  - Households claiming land at Houay Soup are stopping PAP from Hatsaykham from claiming their allocated land because they have not been compensated by NNP1PC for land taken for use at the resettlement site. This issue is causing confusion among Hatsaykham resettlers wishing to use their allocated land.
  - At Zone 2UR, the IAP is disappointed that the detailed demarcation of the full supply level (FSL) mark of the Nam Ngiep 1 reservoir has not been completed. Moreover, the Technical Division is now discussing the need to establish embankments to protect shorelines from waves and potential flooding and to prevent soil erosion into the reservoir. These issues

- are not explained thoroughly to the PAP and are causing confusion. They should be addressed without any further delay.
- It is critical that one fully integrated and agreed watershed management plan (integrating data from the ISP, biodiversity information, fisheries management plan and watershed management activities) is developed to guide future funding from both NNP1PC and the provinces.
  - While some good progress has been made over the last few months, delivery of both the biodiversity offset and watershed management plan are significantly behind schedule.
4. This report consists of two parts: Part 1 presents the activities and actions of the Independent Advisory Panel on the Nam Ngiep 1 Hydropower Project in Lao PDR; and, Part 2 presents a summary of the resettlement, social, environmental, and biodiversity issues related to the construction of the Nam Ngiep 1 Hydropower Project in a matrix format. Four separate annexes present additional comments of individual members of the IAP.
  5. The report was edited by Mr. Anthony M. Zola, the Resettlement Specialist and Chairman of the IAP. The annexes were written by individual members of the Independent Advisory Panel.

## Part 1: Independent Advisory Panel Actions

6. The Independent Advisory Panel (IAP) for the Nam Ngiep 1 hydropower project (NNP1) in Lao PDR undertook a seventh visit to NNP1 on 15-22 May 2016. The IAP members participating in the seventh 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
7. The IAP and Nam Ngiep 1 Power Company (NNP1PC) (the Developer) agreed that the eighth IAP site visit would be on **either 27 November to 4 December or 11-18 December 2016**. NNP1PC agreed in principle that the IAP resettlement and social specialists could undertake a site visit to the project for a few days in August 2016, during the period that the PAP at Hatsaykham would be relocating to the Houay Soup resettlement site.
8. This IAP report to NNP1PC and the ADB covers the following topics: (i) issues of concern to the IAP; and, (ii) actions by NNP1PC that are recommended by the IAP based on the NNP1 Concession / License Agreement, official / legal documents of the Government of Lao PDR (GOL), and international best practices. Actions recommended by the IAP are time-based; meaning that NNP1PC is obligated to or should undertake and/or complete these actions within a specific period of time.
9. The IAP categories of concern are as follows:
  - **High / Very High / Urgent** 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 **before the next visit** of the IAP.

The categories of concern are consistent with those applied at other international standard hydropower projects in Lao PDR.
10. Copies of this IAP report will be submitted to the following individuals:
  - (i) Mr Yoshihiro Yamabayashi, Managing Director, NNP1PC
  - (ii) Ms Kurumi Fukaya, Asian Development Bank, Private Sector Operations

11. The sixth IAP site visit was undertaken over a seven-day period; from Sunday, 15 May, to Sunday, 22 May 2016. The IAP travel schedule was as follows:

- **Saturday, 14 May**
  - Arrival in Vientiane: Dr. Songwit, Mr. Zola. Overnight in Vientiane
- **Sunday, 15 May**
  - Arrival in Vientiane: Dr Frankel, Dr. MacKinnon
  - IAP initiating meeting at Hotel Khamvongsa
  - Overnight in Vientiane
- **Monday, 16 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 during the 5<sup>th</sup> IAP site visit in May 2015; and, (ii) overall progress on NNP1 project implementation and issues of concern.
  - The IAP resettlement and social specialists and ADB representatives traveled to Lone Xang District, Xaysomboun Province: overnight in Lone Xang District.
  - Environmental Specialist travels with EMO Representative, LTA and ADB Environment Consultants to Paksan; short meeting with EMO team to begin review of work progress and changes in organization chart; overnight in Paksan
  - Biodiversity Specialist: Briefings of IAP by SMO and EMO at NNP1PC; follow up meetings re Biodiversity and Watershed Management. Meeting between IAP, EMO Watershed and Biodiversity Team (Viengkeo, and Hendra Winastu) ADB environmental team (V.Joshi, W. Robichaud, Kurumi Fukaya (ADB team leader). Travel to Paksan
- **Tuesday, 17 May**
  - The IAP resettlement and social specialists and ADB representatives met with the district governor and other officials of Hom District and PAP representatives from Zone 2LR, in Ban Palavek village to discuss resettlement issues related to resettlement from Zone 2LR.
  - Travel to and overnight in Paksan.
  - Environment Specialist: Travel with LTA, ADB Environmental Specialist, EMO and TD to construction sites; presentation of general & technical issues by NNP1PC of Main Dam (left bank and right bank), RCC/ CVC/ Aggregate Plant yard, Quarry, Sanitary Landfill (Waste Disposal site), Re-regulation dam and power house area. Overnight in Paksan.
  - Biodiversity Specialist: Meeting with PONRE BKX, ADB, and BAC to discuss preliminary results from rapid biodiversity assessment in Nam Mouane watershed and visit of Biodiversity Advisory Committee to the area (with Mr Konglee (PONRE) Dr Chanthavy (consultant) and Dr Ramesh Boonratana (Zimbo), BAC.
- **Wednesday, 18 May**
  - The IAP resettlement and social specialists and ADB representatives visit the Houay Soup Resettlement Area
  - The IAP resettlement and social specialists met with PAP in Ban Hatsaykham and Ban Thaheua in Zone 3, located near the NNP1 powerhouse and dam; to discuss project impact issues. Travel to Paksan; overnight at Paksan.
  - Environmental Specialist together with LTA and ADB Environmental Specialists: continue site inspections of all contractor work sites and sub-contractor camps, including wastewater treatment plants and solid waste management facilities at all Sub-contractors and Main Contractor camp. Meeting with Obayashi Environmental, Health and Safety Manager. Site visits included bridge to Houay Soup Area, start of construction of Houay Soup resettlement village. Environmental Inspection, Monitoring, and Waste Management review by EMO Team Leader. Overnight at Paksan.
  - Biodiversity Specialist: Field trip to Nam Mouane area with Mr. Konglee (PONRE), Dr Ramesh Boonratana (BAC), NNP1PC staff including Managing Director Mr Yamabayashi. EMO staff and biodiversity team. Visited 3 villages on southern boundary of proposed Nam Mouane site. Overnight in Ban Sopkhone.

- **Thursday, 19 May**
  - The IAP resettlement and social specialists and ADB representatives traveled to Thathom District, Xaysomboun Province, for consultations with district officials and PAP representatives from three villages in Zone 2UR.
  - The IAP resettlement and social specialists and ADB representatives met with the Governor of Bolikhan District.
  - Travel to Paksan; overnight at Paksan.
  - Environment Specialist together with LTA and ADB Environmental Specialists: travel to Biomass Clearance Site, Ban Sopyouak, Hom District for meeting with Mr. Khouthana, LAUNC Director (Biomass Removal Contractor), Mr. Khampaseuth Cheutchingthao, Biomass Team Leader, and Mr. Bounsong, Governor of Hom District. LAUNC presented the overall progress of biomass removal and plan for Blocks 1, 4-6 and 7-9. Discussion of schedule for biomass clearance work, participation and remuneration for village workers, and use of cut timber and waste biomass by villagers. Site visit of biomass removal works in Blocks 4 & 5. Return to Hom and Paksan. Overnight in Paksan.
  - Biodiversity Specialist: Explored habitat along old logging roads and trek inside forest. Drove through northern villages along boundary of proposed site, noting stand of rare pine habitat. Overnight at Ban Vangphieng. Discussions with NNP1PC and PONRE re potential of site.
- **Friday, 20 May**
  - The IAP resettlement and social specialists and ADB representatives met the Chairman of the RMU of Bolikhamxay Province to discuss social impacts from the NNP1 construction project.
  - The IAP resettlement and social specialists and ADB representatives met the Vice Governor of Xaysomboun Province at Lone Xang District.
  - Travel to Vientiane; overnight at Vientiane.
  - Environment Specialist together with LTA and ADB Environmental Specialists review outstanding environmental issues. Meet with EMU of Bolikhamxay Province to discuss monitoring issues, capacity building, and funding. Return to EMO Office to receive monitoring reports. Travel to Vientiane. Overnight at Hotel Khamvongsa.
  - Biodiversity Specialist: Visit camera traps and mineral springs near military camp. Exit along northern route via military camp, Hmong resettlement area and through northern protection forests. Return Paksan via and then to Vientiane. Overnight at Hotel Khamvongsa.
- **Saturday, 21 May**
  - Morning: Internal IAP meeting at the Hotel Khamvongsa.
  - IAP prepared individual debriefing presentations for NNP1PC staff.
  - Afternoon: IAP debriefing for NNP1PC management and staff at Nam Ngiep 1 Hydropower Project office in Vientiane.
  - Afternoon: IAP participated in a NNP1 workshop as resource persons with ADB, BAC, and NNP1PC technical staff.
  - Overnight in Vientiane.
- **Sunday, 22 May**
  - Morning: IAP wrap-up meeting at the Hotel Khamvongsa.
  - Afternoon: Follow-up technical discussions by individual specialists.
  - Evening: Return travel to home bases.

12. 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 recommendations and level of concern; and,
- (ii) Additional comments 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	<p>Site visits: 7-14 December 2014 3-10 May 2015 15-22 May 2016</p> <p>Houay Soup Resettlement Area Initial Environmental Examination (IEE)</p>	<p>Depleted and degraded soil at the Houay Soup resettlement site is the single most important issue for PAP to be resettled</p> <p>Need to redesign land use in the Houay Soup resettlement area</p>	<p>NNP1PC staff is addressing this issue. PAP from Ban Hatsaykham are being paid to add bio-fertilizers and other soil additives to improve their own paddy lands.</p>	<p>Significant progress has been made.</p> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>NNP1PC should reconsider its decision to terminate activities at the Houay Soup demonstration farm (Pilot Plan). This is a highly visible location and even a small level of demonstrations of mixed farming and agroforestry should be continued.</li> </ul>	Low
R2	<p>Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016</p>	<p>Need to upgrade up to 500 ha designated for grazing of large livestock; prior to resettlement of PAP with cattle and buffalo</p>	<p>NNP1PC staff is clearing the land and preparing it for seeding of tropical grass and legume seed to establish improved pasture for PAP. This will be achieved during the 2016 wet season.</p>	<p>Significant progress has been made.</p>	Closed
<p>* Level of Concern:</p> <ul style="list-style-type: none"> <li>Low - action recommended within 6 months</li> <li>Medium - action recommended within 1-2 months</li> <li>High - immediate action recommended.</li> </ul>					

## Summary of Resettlement Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
R3	<p>Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016</p> <p>Concession Agreement, Annex C, Appendix 3, Table 1-1, b</p>	<ul style="list-style-type: none"> <li>• Designation of the Houay Soup area as resettlement site by GOL authorities</li> <li>• Inclusion of adjusted size and land use plan for Houay Soup in the revised IEE</li> <li>• Significantly smaller size of Houay Soup area that is available for PAP resettlement</li> <li>• Designation of 3,715 ha in the PFA for sole use of PAP settling at Houay Soup</li> </ul>	<ul style="list-style-type: none"> <li>• GOL certificate granted to NNP1PC for 1,745 ha at Houay Soup resettlement area outside national protection forest area (PFA); an additional 648 ha also has been degazetted from PFA by MONRE. Total area for resettlement is 2,393 ha</li> <li>• 3,715 ha remains in PFA; will be managed through an integrated Natural Resources Management Plan</li> </ul>	<p>The IAP is pleased that this matter has been resolved. NNP1PC staff is to be congratulated for following up so thoroughly on this issue.</p>	Closed
R4	<p>Site visits: 7-14 December 2014 3-10 May 2015 6-13 December 2015</p> <p>Concession Agreement, Annex C, Appendix 3, Table 1-1, b</p>	<p>A large number of PAP in Zone 2LR have stated repeatedly that they prefer not to resettle at the Houay Soup resettlement area; that instead they will self-resettle</p>	<ul style="list-style-type: none"> <li>• According to the CA, NNP1PC is responsible for two options: (i) resettle PAP at Houay Soup; or, (ii) pay cash to PAP for self-resettlement based on unit compensation</li> <li>• Official cut-off-date for the project area is 11 April 2014</li> <li>• PAP at 2LR have stated that the cut-off-date is date they receive compensation payment for assets</li> <li>• For those refusing to decide, GoL would require them to move to Houay Soup.</li> <li>• 44 families are holding out and not allowing NNP1PC staff to conduct asset registration. The GOL is facilitating arbitration.</li> </ul>	<p>The IAP reminds NNP1PC that resettlement should take place no less than one year before reservoir inundation.</p> <p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>• The IAP recommends that NNP1PC work with Hom District officials and Xaysomboun Provincial authorities to appease the anger of PAP in 2LR, specifically 44 PAP hold-outs</li> <li>• NNP1PC should consult with district and provincial officials and ADB to define a self-resettlement plan template for use with self-resettlers.</li> <li>• Self-resettlers should be offered an opportunity to receive/reject occupational training related to self-resettlement plans.</li> <li>• The IAP recommends that compensation payments be initiated soon after the asset survey, the choice survey, and the self-resettlement livelihood plans are completed.</li> <li>• NNP1PC should prepare a mini-RAP for self-resettlers based on the self-resettlement template in the Zone 3 update; to authorized Mouang Hom district self-resettlement sites that specify roles for NNP1PC and GOL.</li> </ul>	High

\* Level of Concern:

- 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*
R5	<p>Site visits:  7-12 January 2013  17-24 November 2013  4-11 May 2014  7-14 December 2014  3-10 May 2015  6-13 December 2015  15-22 May 2016</p> <p>Concession Agreement, Annex C, Appendix 7</p>	<p>Extraordinary delay in resettlement of PAP from Ban Hatsaykham</p> <p>Need for PAP from Hatsaykham to cultivate crops beginning in March 2016</p> <p>PAP will be occupied with wet season cropping in August 2016, when resettlement is now scheduled</p> <p>PAP are concerned about the size of their new houses in the Houay Soup resettlement area</p>	<ul style="list-style-type: none"> <li>• A social management action program (SMAP) is being effectively implemented at Ban Hat Gniun village and Ban Hatsaykham hamlet to minimize impacts from nearby construction camps.</li> <li>• Ban Hatsaykham will not be moved to the Houay Soup resettlement site until August 2016</li> <li>• Based on the indicative choice survey, 19 of 38 PAP families from Hatsaykham now agree to move to Houay Soup.</li> <li>• GOL has created a task force to talk to PAP as part of the negotiation process for the final choice survey. For those refusing to decide, GoL would require them to move to Houay Soup</li> <li>• GOL and NNP1PC have prepared a flow chart concerning how to deal with PAP who refuse to make a choice about moving to Houay Soup or not, which is being used by GOL authorities.</li> <li>• PAP understand that they are not entitled to move into a large house even though they now live in a large house.</li> </ul>	<ul style="list-style-type: none"> <li>• The IAP has recommended since 2013 that PAP at Ban Hatsaykham be moved early to the Houay Soup resettlement area or be relocated temporarily to another part of Ban Hat Gniun village to minimize impacts from construction activities. This move has not taken place for various reasons. The IAP is very disappointed that a temporary relocation was not undertaken.</li> <li>• The IAP is pleased that 50% of the PAP at Hatsaykham have decided to move to Houay Soup. The remaining will self-resettle.</li> </ul> <p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>• The IAP repeats the recommendation that NNP1PC establish a special task force to manage the Hatsaykham resettlement, including preparing an emergency food and nutrition security program.</li> <li>• The IAP recommends that NNP1PC inform 19 self-resettlement PAP that resettlement at Houay Soup is still an option.</li> <li>• The IAP recommends that NNP1PC document an understanding with Bolikhan District and Bolikhamxay RMU that if self-resettlement leads to poverty/vulnerability, PAP can be resettled at Houay Soup even if they already received compensation; but PAP will receive fewer benefits. NNP1PC should clarify and document its duties.</li> <li>• NNP1PC and the RMUs should review the CA carefully and note that PAP with big houses are entitled to an equivalent house depending on the quality of materials, even if they have small families. This issue needs to be clarified with PAP who are giving this as one reason for not resettling at Houay Soup.</li> </ul>	High
<p>* Level of Concern:</p> <ul style="list-style-type: none"> <li>• Low - action recommended within 6 months</li> <li>• Medium - action recommended within 1-2 months</li> <li>• High - immediate action recommended.</li> </ul>					

## Summary of Resettlement Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
R7	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	<ul style="list-style-type: none"> <li>Demarcation of full supply level of the Nam Ngiep 1 reservoir in villages in Zone 2UR</li> <li>Livelihood restoration of PAP in three villages in Zone 2UR</li> <li>Policy level clarification is needed related to islands in the NNP1 reservoir and use of drawdown zones</li> <li>Development of replacement agricultural lands for PAP</li> <li>Expropriation of additional land around the NNP1 reservoir to construct embankments</li> </ul>	<ul style="list-style-type: none"> <li>A suitably detailed demarcation of the full supply level of the reservoir has not yet been completed and is causing serious concern to PAP and district officials</li> <li>NNP1PC &amp; RMU need to clarify to PAP about expropriation of additional land around the NNP1 reservoir to construct erosion control embankments</li> <li>Issues related to use of islands and drawdown zones remain unresolved and is causing serious concern to PAP and district authorities</li> <li>Livelihood development team at 2UR is being strengthened</li> </ul>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>The IAP recommends that the detailed demarcation of the full supply level of the NNP1 reservoir by NNP1PC engineers should be completed immediately. As pointed out six months ago, the current demarcation is insufficient to finalize the asset survey and is causing confusion among PAP and district authorities.</li> <li>NNP1PC Technical Division should immediately clarify the need for expropriating additional land around the NNP1 reservoir to construct erosion control embankments.</li> <li>NNP1PC managers and Thathom district officials and the Xaysomboun RMU should decide about the need and urgency of developing agricultural replacement land for PAP at 2UR.</li> </ul>	High
R8	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	<ul style="list-style-type: none"> <li>Organizational and institutional issues related to both NNP1PC and the GOL</li> <li>Effectiveness of the Xaysomboun RMU</li> <li>Hom District officials have not been well informed by Xaysomboun RMU about resettlement issues and procedures</li> </ul>	<ul style="list-style-type: none"> <li>Field activities of the Xaysomboun RMU have improved</li> <li>Hom District officials report insufficient support for transport to work in Zone 2LR</li> </ul>	<ul style="list-style-type: none"> <li>Performance of the Xaysomboun RMU has improved from the perspective of district officials.</li> <li>Any delay in pre-resettlement activities in Zone 2LR will damage the image of NNP1PC and discredit management and staff, and cause confusion among PAP</li> </ul> <p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>The IAP recommends that NNP1PC review the assignment of vehicles to the Xaysomboun RMU and reassign one vehicle to be based permanently at Mouang Hom district to support pre-resettlement activities for which district officials and NNP1PC staff are responsible.</li> </ul>	Medium
<p>* Level of Concern:</p> <ul style="list-style-type: none"> <li>Low - action recommended within 6 months</li> <li>Medium - action recommended within 1-2 months</li> <li>High - immediate action recommended.</li> </ul>					

## Summary of Resettlement Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
R9	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	<ul style="list-style-type: none"> <li>The NNP1PC internal management and organization to implement resettlement are weak</li> <li>Procurement procedures to facilitate important and time-sensitive field operations are complex and slow; may effect resettlement activities</li> <li>Flow of funds are being delayed by ESD managers, not by the Finance and Accounting Department</li> </ul>	<ul style="list-style-type: none"> <li>These issues seem to have been addressed satisfactorily by administration and finance department staff.</li> </ul>		Closed
R10	Site visits: 15-22 May 2016  CA, Annex C, Appendix 7	Outstanding grievances from PAP at Ban Hatsaykham	<ul style="list-style-type: none"> <li>Payment of compensation is outstanding.</li> <li>Grievances of PAP for additional compensation are outstanding.</li> <li>Hatsaykham households are complaining about compensation for land in Houay Soup; they are only being compensated for land based on available labor in the family and not based on all land used in Houay Soup.</li> </ul>	<ul style="list-style-type: none"> <li>The IAP understands that NNP1PC is obligated by its grievance procedures to respond to and resolve grievances within 15 days of submission by PAP, or to submit grievances to the next level in the consideration process. Ban Hatsaykham PAP informed the IAP that numerous grievances remain outstanding and unresolved for several months nor have grievances been submitted to the next level for consideration.</li> <li>The IAP understands that the CA requires that NNP1PC provide compensation in full for all affected land at replacement cost if PAPs self-resettle. Land being used during the cut-off date should be compensated in full regardless of number of labor in the family.</li> </ul> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>The IAP recommends that NNP1PC take immediate action to resolve grievances or to submit them to the next level of consideration.</li> <li>The IAP recommends that NNP1PC resolve the land compensation issue immediately, wherein previous compensation payments may need to be reviewed; and, additional payments made to PAP in zones 3 and 5 who have land in this category.</li> </ul>	High

\* Level of Concern:

- 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 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	<ul style="list-style-type: none"> <li>Livelihood Programs</li> <li>Agricultural products and markets</li> </ul>	<ul style="list-style-type: none"> <li>Livelihood programs support important activities for the PAP. In Zone 5, Ban Thaheua, programs have significantly improved the quality of life of the PAP. Their lives are much better than in the past. They earn more money from the programs and better manage and adjust themselves into the modern economy.</li> <li>In Zone 2UR, PAP of Ban Pou have requested the Project to support the village as follows: village water supply tanks; village meeting room; vegetable and mushroom growing; fish, chicken, pig, and duck raising; better school classrooms; and, a community market. The PAP require organic and mixed agricultural farming. According to PAP of Ban Pou, the most important issues are village water supply tanks and village meeting room.</li> </ul>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>The IAP recommends that the livelihood programs be supported more strongly, specifically: modern rice seeds and planting techniques, fish, duck, pig, and chicken raisings, mushroom, rattan, and vegetable growing; all are important sources of food and generate income for the PAP. The PAP of Zone 3 are satisfied and appreciated the programs. PAP of Zone 2UR are also requesting the Project support programs for them, as well. These PAP in the 2 zones might exchange information with one another.</li> <li>The livelihood programs are about building good image and reputation for the Project. The Project should support the livelihood programs for the PAP in every zone as many as possible.</li> </ul>	Very high
S2	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	Hmong graves removal and compensation	So far, only 36 elder graves require to be moved in Zone 2LR: 26 graves in Ban Namyuoak, 5 graves in Ban Sopyuoak, and 5 graves in Ban Sopphuane. The remaining more than 400 graves will require the IP (Hmong) spiritual ceremonies to be performed. The compensation payment for the graves has been delayed and this has caused delays in moving the graves. The PAP cannot do anything further.	<p><b>Recommendations</b></p> <p>The IAP recommends that in Zone 2LR the graves compensation be paid as soon as possible. The Deputy Governor of Xasomboune Province (Mr. Laopao Xiong) has promised the IAP that the graves compensation shall be paid the next day after meeting with IAP.</p>	Very high
<p>* Level of Concern:</p> <ul style="list-style-type: none"> <li>Low - action recommended within 6 months</li> <li>Medium - action recommended within 1-2 months</li> <li>High/Very high - immediate action recommended</li> </ul>					

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No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
S3	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	<ul style="list-style-type: none"> <li>Resettle to Resettlement Site (Houay Soup) and self-resettlement</li> </ul>	So far, there are 19 PAP households (23 families) at Ban Hatsaykham, Zone 3 who decided to resettle to Houay Soup resettlement site. The other 19 households chose self-resettlement. In the meeting with the headman and committees of Ban Namyouak, Zone 2LR, the PAP are waiting for compensation payments prior to making decisions whether to resettle into Houay Soup or not.	<b>Recommendations</b> The IAP recommends that compensation be paid for the PAP of the 4 villages of Zone 2LR as soon as possible. There will be several households (or many households) in Zone 2LR who are waiting and considering to resettle to Houay Soup. The IAP still insists the Project should continue to improve the soil and infrastructure at Houay Soup as planned. This will convince more PAP of the Zone 2LR to move to Houay Soup.	Very high
S4	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	Food security is still the most important issue for the IP Hmong in the sites. And rice is the most important staple food for the Hmong people.	The PAP of Ban Namyouak, Zone 2LR who choose self-resettlement have requested the Project to provide rice for them for one year after resettlement. According to the PAP, this is to ensure that they can survive in the first year after self-resettlement.	<b>Recommendation</b> The IAP recommends that NNP1PC comply with the Concession Agreement.	High
S5	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	PAP of Zone 3 stated that some construction workers do not comply with safety rules at the site, such as: driving fast (in the morning around 07.00-08.00 hours) and do not use safety equipment: hard hats, reflective safety shirts, etc.	These factors have caused accidents in Zone 3, such as, cows being hit by cars; and, have created problems between the Project and PAP.	<b>Recommendation</b> The IAP recommends that the Project supervise the construction contractors and sub-contractors to comply with safety rules. It is required to enforce Lao Law and it is required that the names and nationalities of all workers from all companies be reported to the police and other local administration officials.	High
* Level of Concern: <ul style="list-style-type: none"> <li>Low - action recommended within 6 months</li> <li>Medium - action recommended within 1-2 months</li> <li>High - immediate action recommended.</li> </ul>					

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No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
S6	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	Drug abuse, prostitution, crimes, etc. are occurring at an increasing rate in Zone 3.	According to the PAP: the problems are under control.	<b>Recommendation</b> The IAP recommends that Lao Law be enforced and complied.	High
S7	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	In Zone 2LR, 6 of 9 new items of assets have been accepted by GOL and the Project. Three items are under consideration by the GOL. During this Site Visit, PAP of Zone 3 in Ban Hatsaykham requested another 3 new items for compensation: rubber seedlings, pepper trees, and pineapples. Furthermore, 4-5 PAP of Ban Hatsaykham have submitted grievance letters for the GOL and the Project.	According to the PAP in both zones: they have requested these assets be paid since they have invested and looked after these assets for a long time. Delaying payment of compensation has caused the loss of the assets, such as the rubber seedlings and the pineapples.	The IAP recommends that the GOL, the Project, and PAP representatives set up a committee to seriously discuss these issues and find a solution together. There should be compliance to Lao Laws and the Concession Agreement.	High
<p>* Level of Concern:</p> <ul style="list-style-type: none"> <li>• Low - action recommended within 6 months</li> <li>• Medium - action recommended within 1-2 months</li> <li>• High - immediate action recommended.</li> </ul>					



## Summary of Social Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
S8	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	<ul style="list-style-type: none"> <li>In Zone 3 currently there are 19 PAP households (23 families) in Ban Hatsaykham who decided to resettle in Houay Soup.</li> <li>In Zone 2LR, the majority of the PAP in the 4 villages have chosen self-resettlement, whereas several households are waiting for the compensation payment prior to making a decision to move to Houay Soup or not.</li> <li>Some Hat Gniun villagers who used to own land in Houay Soup do not allow the PAP of Ban Hatsaykham to use their land.</li> </ul>	<ul style="list-style-type: none"> <li>The GOL (the Hom District Governor and the Deputy Governor of Xaysomboun Province) insist that the PAP will choose to self-resettle either within the province or in Houay Soup. According to the headman and village committees of Ban Namyuoak, the PAP are waiting for compensation payments before making a decision to move to Houay Soup. It is expected that there will be more PAP who decide to move to Houay Soup.</li> <li>Houay Soup currently belongs to the Project.</li> </ul>	<p>Some of the PAP of Zone 2LR have visited Houay Soup often, even during the IAP 7<sup>th</sup> Site Visit. This means the PAP are interested in resettling in Houay Soup.</p> <p>During this Site Visit, the IAP observed the soil in Houay Soup is better than the PAP reported in the past. The PAP who came to clear their land in Houay Soup said that they are satisfied with the quality of soil.</p> <p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>The IAP recommends it is important to accelerate development of Houay Soup, infrastructure and socio-economic components.</li> <li>The IAP recommends that Lao Laws and the Concession Agreement must be obeyed.</li> </ul>	Very high
S9	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	<ul style="list-style-type: none"> <li>Currently 44 households in Ban Namyuoak of Zone 2LR refuse to have their assets registered with the Project. They require: (i) a higher unit compensation rate; (ii) a better resettlement site than Houay Soup; and, (iii) cash payment – no payment into a bank account.</li> <li>In Zone 2LR, PAP from 4 villages have requested 9 new items of assets to be considered for compensation from the Project. Ban Soppuane of Zone 2LR has requested cultivated land above 320 meters be considered for compensation because cultivated land cannot be used anymore.</li> </ul>	<p>During the 7<sup>th</sup> Site Visit, representatives of the 44 PAP households were invited to attend meetings in Hom District; they did not join. The IAP learned the 44 hhs are holding out for their demands. This issue has created tensions and problems between the 44 hhs and others who agreed to join the Project. The Ban Namyuoak headman and village committees request the GOL to separate the 44 hhs since they cause delays in compensation payments and in implementing plans.</p> <p>During the IAP 7<sup>th</sup> Site Visit, the Vice President of the Lao Front for National Construction (Mr. Tong Yer Thao), a Hmong-Lao High Official was going to visit Zone 2LR to discuss the problems with the 44 hh.</p>	<p><b>Recommendation</b></p> <ul style="list-style-type: none"> <li>The IAP recommends NNP1PC work with RMU, Vice Governor and Governor of Xaysomboun Province. Whenever NNP1PC staff visit sites, they should inform the Governor of Hom District and related district officials. Project staff should visit village leaders, IP elders, head of women's and youth groups, etc. This is a strong recommendation from Vice President of Lao Front for National Construction.</li> <li>The IAP is waiting for results of discussions between the Vice President of the Lao Front for National Construction and 44 hhs of Ban Namyuoak. The IAP recommends that tension between PAP and GOL, PAP and Project, and PAP and PAP be avoided.</li> <li>The IAP recommends that GOL (district and provincial levels), the Project, and PAP representatives set up a committee to discuss and find solutions to unit rates issues. The issues could spread to other villages and create more problems.</li> </ul>	Very high
<p>* Level of Concern:</p> <ul style="list-style-type: none"> <li>Low - action recommended within 6 months</li> <li>Medium - action recommended within 1-2 months</li> <li>High - immediate action recommended</li> </ul>					

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No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
S10	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	Cut-off-date	The last cut-off date was August 15, 2015 and PAP have been informed.		Closed
S11	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	Hmong staff	The situation has improved significantly.		Closed
S12	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016	Asset registration	<ul style="list-style-type: none"> <li>• Demarcation in 2UR remains unclear.</li> <li>• 44 households in 2LR refuse asset registration.</li> <li>• See R4 and R7 (above)</li> </ul>	Although the situation has improved somewhat, significant issues remain. <b>Recommendation:</b> The IAP recommends that NNP1PC address the outstanding asset compensation issues in a timely manner.	High
S13	Site visits: 6-14 Dec. 2015 15-22 May 2016	Community participation	<ul style="list-style-type: none"> <li>• PAP participation with Project and GOL has improved. Activities have moved forward: assets survey and registration, IP graves registration, livelihood programs, crimes have been reduced.</li> <li>• PRLRC follows a participatory process to establish unit rates consistent with ADB requirements</li> <li>• NNP1PC has engaged a well-respected Hmong leader to help engage PAP to participate in activities, especially asset registration.</li> </ul>	Continue to encourage PAP to participate at all levels of activities with the Project and the GOL.	Medium
<p>* Level of Concern:</p> <ul style="list-style-type: none"> <li>• Low - action recommended within 6 months</li> <li>• Medium - action recommended within 1-2 months</li> <li>• High - immediate action recommended.</li> </ul>					

## Summary of Environmental Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of Concern
E1	<p>ESIA of NNP1</p> <p>Site visits:            7-12 January 2013            17-24 November 2013            4-11 May 2014            7-14 December 2014            3-10 May 2015            6-13 December 2015            15-22 May 2016</p> <p>Policy on Sustainable Hydropower Development, No. 2/ GoL, 12 January 2015</p>	<p>There are four hydropower projects under construction that will affect water quality, water use and water availability along the Nam Ngiep river. An organizational arrangement is needed to manage the watershed resources and enable communications and cooperation between the hydropower companies.</p>	<ul style="list-style-type: none"> <li>The Watershed Management Plan started in May 2015 and is on-going. The focus of the action plan is to develop a WMP and undertake necessary surveys and establish the WMO. Overlapping concessions, cumulative and trans-boundary impacts from hydropower, mining, and other development projects within the watershed necessitate consideration of an integrated management and monitoring plan for the Nam Ngiep watershed.</li> <li>NNP1 Watershed Team has been meeting with MONRE, provincial and district officers, to discuss management issues of the watershed. At a planning workshop in March 2016, NNP1, WMC-WMO agreed to a draft outline and version of the WMP. Baseline profiling is progressing from the ISP (land zoning map) and includes all key stakeholders. A draft WMP is expected in Q3 together with a Provincial Regulation. This should lead to a Final WMP in Q4 2016.</li> </ul>	<p>The IAP is encouraged by progress being made in land use zoning within the watershed (product of Integrated Spatial Planning).</p> <p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>It is recommended that NNP1PC continues its efforts to write-up the Watershed Management Plan and Regulations, with inputs from the four hydropower projects being developed along the Nam Ngiep River.</li> <li>NNP1PC should then host the first annual meeting to discuss sharing water flow and water quality data and other issues of interest to the four Project Proponents and concerned Provincial and District government agencies.</li> </ul>	Low
<p>* Level of Concern:</p> <ul style="list-style-type: none"> <li>Low - action recommended within 6 months</li> <li>Medium - action recommended within 1-2 months</li> <li>High - immediate action recommended.</li> </ul>					

## Summary of Environmental Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of Concern
E2	<p>Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016</p> <p>CA Nam Ngiep 1 Hydropower Project, Annex C, Clauses 13, 16, 33, 34, 76, 77, 78, 82, and 83.</p>	<p>NNP1PC 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>	<ul style="list-style-type: none"> <li>• IAP discussions with the EMU of Bolikhamxay indicate that NNP1 is the priority project for GOL and EMU wants to continue to join in the monthly monitoring site visits to contractors' camps and construction work sites.</li> <li>• Funds have been received at DONRE from NNP1PC to permit payment of daily allowances to the EMU for joint site visits, but funds are inadequate to permit purchasing water quality monitoring equipment. Requests were made from the EMU to MONRE for additional funds.</li> <li>• The EMU will utilize the NNP1 monthly monitoring data as its database for reporting to DONRE and for writing their compliance monitoring reports. The EMU confirms that it is receiving NNP1 Monthly monitoring reports (both English and Lao versions).</li> <li>• Although the IAP were unable to visit the EMU of Xaysomboun Province, it is assumed that they also are receiving monthly monitoring reports.</li> <li>• The status of funding to the EMU of Xaysomboun is unknown. Their monitoring inputs should include the biomass removal program and biomass reuse by impacted communities.</li> </ul>	<ul style="list-style-type: none"> <li>• The IAP is satisfied with the efforts that the EMO is making to include training for the EMU in compliance monitoring and reporting on a monthly basis. This same type of training (capacity building) is needed for the EMU of Xaysomboun Province.</li> </ul> <p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>• Monitoring reports of the EMU (both provinces) should be sent to both NNP1PC and MONRE and include their assessment of the adequacy and effectiveness of implemented mitigation measures and monitoring program being made by the company . The EMU lacks any monitoring equipment, but they can be made aware of what parameters are relevant and how the EMO Compliance Monitoring team samples the environment to measure and analyze the protective measures being implemented by both the company and its contractors.</li> <li>• The training program in compliance monitoring for the Xaysomboun EMU should include the Biomass Removal Plan. The EMO should use joint site inspections of the removal work as part of its capacity building efforts in the AIP 2016.</li> <li>• It is important for the Bolikhamxay EMU to see the improvements being made to the wastewater treatment plants at the various construction camps and to verify that the improved treatment systems are producing an effluent that meets the Lao effluent standards. The EMU should be briefed on the waste treatment technologies being implemented at the various camp sites (management of both black and grey wastewaters, how the systems work and how they should be maintained). More frequent monitoring of the effluents from the WWTPs is needed (once per week) until the EMO is satisfied</li> <li>• Likewise, the EMU should be included in discussions with communities on management of solid wastes and witness the project landfill and black wastewater disposal areas being implemented for the contractors and their construction camps.</li> <li>• The IAP commends NNP1PC for its efforts to include separation, recycle and reuse of all waste materials, with the goal to create new job opportunities for community members (raising pigs with waste food, making compost for soil improvement, and selling various kinds of wastes to recycle industries). Separation and recycle will save considerable landfill capacity and result in cost</li> </ul>	Medium

			<ul style="list-style-type: none"> <li>Capacity building of the EMU of Xaysomboun is still an outstanding obligation of the EMO.</li> </ul>	<p>savings for the company as well as creating new jobs, income and new product opportunities for the resettlement communities.</p> <ul style="list-style-type: none"> <li>Similar planning and training should be included for the EMU of Xaysomboun as resettlement work proceeds in the province.</li> <li>The AIP 2016 should clarify and detail the training programs to be introduced to the EMUs of both provinces. The training should include all environmental issues that need to be improved in 2016 by the Contractor. Training includes joining in monthly joint inspections made by the EMO together with the Contractor and involvement in discussions of the proposed changes by the Contractors to correct outstanding environmental issues and non-compliances. The two EMUs can thus witness the compliance and monitoring approach used by EMO to ensure that the Contractor and all Sub-contractors meet with the conditions of Annex C of the CA and the ADB SPS.</li> <li>The IAP again recommends that NNP1PC convene a workshop combining the EMUs of both provinces and MONRE to review duties of the EMU for Nam Ngiep watershed. MONRE should be invited as workshop organizer to review "lessons learned" from Nam Theun 2 and the Theun-Hinboun projects, and include the expanded mandate of MONRE to oversee integrated environmental conservation interests of water, forest, and biodiversity protection at the regional level. Site visits to witness mitigation measures and analyze findings would be beneficial for capacity building efforts of the project.</li> </ul>	
<p>* Level of Concern:</p> <ul style="list-style-type: none"> <li>Low - action recommended within 6 months</li> <li>Medium - action recommended within 1-2 months</li> <li>High - immediate action recommended.</li> </ul>					

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E3	<p>Site visits: 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016</p> <p>CA Annex C, Standards: Clauses 18, 33, 34, and 35,</p>	<p>The management of the Environment is not in compliance with (1) the CA Obligation 2.2 Obligation to Implement Environmental Measures which states that the Company (NNP1PC) must ensure that the HCCEMMP is prepared by the Head Construction Contractor in accordance with the Concession Agreement . . . , and ensure that the Head Construction Contractor implements the approved HCCEMMP; and, (2) the ADB Safeguard Requirements 1: Environment, Section 2. Environmental Planning and Management, para. 15, which states that when a third party's involvement (meaning a contractor, or an operator of an associated facility) will influence implementation of the EMP, the borrower/client (meaning NNP1PC) has control or influence over the actions and behavior of the third party, and will collaborate with the third party to achieve the outcome consistent with the requirements for the borrower/client.</p>	<ul style="list-style-type: none"> <li>The Main Contractor (CWC) has three staff designated to manage and oversee the environmental, health and safety (EHS) obligations of the CWC and its Sub-contractors (Mr. Santi Sayakoummane, Environmental Specialist; Mr Taguchi Tomohiro, EHS Manager; and Mr Lester Palarca, Safety Engineer) in accordance with the CA and the ADB Safeguards. The IAP is satisfied with the new arrangement as long as supervision of environment affected activities of the CWC and its Sub-contractors is carried out by CWC in accordance with best practices and commitments of the ESMMP-CP.</li> <li>CWC is still dependent upon NNP1 to provide all technical inputs, environmental monitoring, and reporting, plus meeting with the Sub-contractors to implement acceptable solutions to environmental issues. CWC is thus not operating in accordance with ADB Safeguards or IFI Performance Standards.</li> <li>The effluents from the CWC and Sub-contractors' wastewater treatment plants (WWTPs) are not meeting the Lao effluent standards. The GOL thus has the rights to impose penalties on the Company for breach of its obligations regarding environmental safety.</li> <li>Likewise, the system to manage the disposal of solid wastes is not yet finalized. Questions remain about how to manage construction and hazardous wastes from the various work areas, fees to be charged to contractors for disposal at the project landfill, plans for separation of wastes at the project landfill, and long term storage of some hazardous wastes that cannot be recycled in Laos.</li> </ul>	<p>The IAP believes that the CWC is non-compliant with ADB's Environmental Safeguards and IFC Performance Standards. CWC's non-compliance is the borrower/client's (NNP1PC) non-compliance as far as ADB and other lenders are concerned.</p> <p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>NNP1 must continue to pressure the CWC to carry out its environmental management obligations both for the CWC and its sub-contractors in accordance with best practices. This means that the Technical Division (TD) must work closely with and support the EMO requests for improved CWC environmental actions to manage both their obligations and those of their sub-contractors.</li> <li>The IAP recommends that the Environmental Engineering Consultant be invited back to resolve construction &amp; operation problems with the wastewater treatment plants (WWTP) of the sub-contractors and the CWC Camp. Only the WWTP of the Owner's Camp is properly operating. The revised wastewater treatment plants are not properly constructed and need to be modified to ensure operation efficiency and ability to produce an effluent that meets the Lao effluent standards.</li> <li>The EMO should have a set of drawings of the new WWTPs and should inspect that the construction is in accordance with the drawings of the Consultant. If not, they should issue a non-compliance for construction of the wastewater treatment plants. The designs are based on referenced international standards and thus CWC and its sub-contractors are obligated to build the</li> </ul>	High

				<p>treatment systems and install equipment as specified in the detailed design drawings.</p> <ul style="list-style-type: none"> <li>• The EMO needs to increase the frequency of its sampling to check on the adequacy of the WWTPs. The samples need to be composite samples (representative of what is being discharged). A single grab sample of the effluent is <i>not</i> a reliable sample to judge what is being discharged from the WWTPs.</li> <li>• The EMO should continue sampling the effluents from the WWTPs on a monthly basis. To ensure improvement at ground level, LTA and ADB will visit the sites in September 2016 to check the progress of recommendation made during the IAP mission. This should address the root cause of water quality violations.</li> </ul>	
<p><b>* Level of Concern:</b></p> <ul style="list-style-type: none"> <li>• Low - action recommended within 6 months</li> <li>• Medium - action recommended within 1-2 months</li> <li>• High - immediate action recommended</li> <li>• Very High – Highest priority for action</li> </ul>					

## Summary of Environmental Issues

No.	Reference Document	Issue	Status	IAP Comments and Recommendations	Level of Concern
E4	<p>Site visits: 7-14 Dec. 2014, 3-10 May 2015, 6-13 Dec 2015 15-22 May 2016</p> <p>CA, Annex C, Clause 57</p>	<ul style="list-style-type: none"> <li>• Management of wastes from construction sites and camps of sub-contractors is not yet compliant with guidelines of the ESMMP-CP the requirements of Annex C to the CA.</li> <li>• NNP1 has not prepared and approved a SSES MMP for the Landfill Management Plan and submitted it to MONRE prior to commencing construction work covered by the SSES MMP (see Clause 68 of Annex C to the CA).</li> <li>• NNP1PC has obligations to minimize and recycle waste.</li> </ul>	<p>Several violations of the standards are evident:</p> <ol style="list-style-type: none"> <li>1) Solid wastes are still being dumped into the temporary pits of the NNP1PC landfill without separation of recyclable wastes for reuse or sale to recycle firms;</li> <li>2) The temporary pits are unlined and do not have a leachate collection system. The pits should be covered and protected from rainwater seeping or draining into the pits; and,</li> <li>3) Septic tanks waste from sub-contractor septic tanks are being collected and disposed of by an outside contractor in the spoils disposal area #6. NNP1PC has approved the disposal method and site and instructed the contractor on lime treatment requirements. The EMO needs to check the disposal process and verify that the contractor is following the required standard.</li> </ol>	<ul style="list-style-type: none"> <li>• The Main Contractor, Obayashi, understands that it is his responsibility to ensure that all sub-contractors meet waste treatment and waste management standards agreed upon in the CA and EMP for all types of construction and worker wastes (air, liquid, solids and hazardous wastes).</li> <li>• The TD has provided technical assistance for CWC and its sub-contractors by hiring a licensed environmental engineer to provide designs for the wastewater treatment plants and the sanitary landfill needed for the NNP1 project.</li> <li>• The IAP is satisfied with the approved design of the project landfill and the leachate system. Construction just started a few days prior to this IAP Site visit.</li> <li>• The IAP commends the EMO on its efforts to separate and recycle wastes from contractors as well as communities and to support and encourage villagers to collect and separate wastes from service areas for recycle. Utilization of project wastes for recycle and reuse will pay for itself in future livelihood developments, save on investment &amp; operation costs at the sanitary landfill, and create a healthier and cleaner environment for the resettlement communities.</li> </ul> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>• The main focus of the solid wastes collection and treatment system for the construction and operation phases of the project should be on maximizing separation and recycle of waste materials; not disposal of solid wastes into the landfill. Some 90-95% of the wastes disposed in the landfill can be recycled.</li> <li>• It is far more economic for NNP1PC to invest in a recycle process (separation, compaction and recycling technologies for reusing solid wastes) than in expanding the sanitary landfill to meet projected solid wastes generation volumes throughout the CA.</li> <li>• The AIP 2016 should focus on a “green technology” approach to management of solid wastes from the contractors and from all project impacted communities.</li> <li>• The EMO needs to ensure that CWC and all sub-contractors strictly follow the Guidelines for hazardous materials and hazardous wastes separation, identification, and storage. The IAP and ADB does not perceive any negative impact of the present arrangement provided it is conducted with strict compliance</li> </ul>	High



				<p>with the regulations and good practices. The IAP recommends that NNP1PC include provisions of EMO / TD clearance and approval before such wastes are disposed through authorized recyclers.</p> <ul style="list-style-type: none"> <li>• NNP1PC needs to calculate a disposal fee with concurrence of CWC and all subcontractors to cover the cost of operation of the sanitary landfill for the NNP1 project. The fee should cover the costs of workers who will check on incoming wastes, carry out additional separation for recycle and safety reasons, and operate the project landfill.</li> <li>• Options for recycle of food wastes, raising pigs, making plastic pellets for recycle and sale to extruders, and other “green” technologies should be introduced and encouraged as livelihood options to interested villagers. All recycle options will reduce the need for expanding the project landfill in the future and result in capital savings for NNP1PC.</li> <li>• NNP1PC will operate the landfill throughout the CA using the collected fees to pay for operation. Communities using these facilities in the future need to be instructed on the Guidelines for solid wastes collection and disposal. Disposal fees would vary over time to reflect the net costs of collection, separation, recycle and residual disposal costs.</li> </ul>	
<p><b>* Level of Concern:</b></p> <ul style="list-style-type: none"> <li>• Low - action recommended within 6 months</li> <li>• Medium - action recommended within 1-2 months</li> <li>• High - immediate action recommended</li> <li>• Very High – Highest priority for action</li> </ul>					

No.	Reference Document	Issue	Status	IAP Comments and Recommendations	Level of Concern
E5	Site visit: 3-10 May 2015 6-13 Dec 2015 15-22 May 2016	<ul style="list-style-type: none"> <li>Cooperation and support from TD to EMO is necessary to implement corrective actions by CWC and sub-contractors on outstanding environmental issues in timely manner.</li> <li>Compliance Monitoring frequency and parameters to be monitored needs to be re-evaluated in a new Annual Implementation Plan (AIP) for 2016.</li> <li>The new Environmental Lab should be completed as soon as possible and equipment procured to permit more ambient (in the field) monitoring by the Compliance Monitoring team.</li> </ul>	<ul style="list-style-type: none"> <li>Visits to construction camps and work sites by the IAP and LTA Environmental Specialists showed improved awareness and attention to environmental issues by CWC and its sub-contractors.</li> <li>Inspection monitoring is taking place regularly between EMO, CWC, and sub-contractors, with scheduled meeting times so that contractors can respond to non-compliances with agreed upon corrective actions and within an acceptable time frame for implementation.</li> <li>The CWC's Environmental Manager is now inspecting work sites and camps of subcontractors together with EMO Compliance team members to ensure environmental performance standards</li> </ul>	Review of EMO Monitoring and Inspection Team activities is showing improved support and cooperation from TD to implement corrective actions by CWC and sub-contractors on outstanding environmental issues. This needs to be extended to the newly redesigned wastewater treatment systems. TD needs to insist the CWC and its sub-contractors follow the design drawings and specifications of the environmental engineering consultant and build the required treatment systems to meet the standards specified in the consultant's reports. <b>Recommendations</b> <ul style="list-style-type: none"> <li>The IAP strongly endorses the involvement of NNP1PC environment managers in field inspections to ensure full cooperation of senior EHS manager support from the CWC and its sub-contractors.</li> <li>Outstanding environmental issues should be monitored frequently using relevant parameters to verify adequacy of mitigation measures and to document results achieved.</li> <li>The overall environmental monitoring program needs to be revised and updated in a new AIP 2016. The monitoring program should be flexible and modified to clarify the extent of an adverse environmental impact or to prove acceptability of an implemented mitigation measure.</li> </ul>	Low
E6	Site visit: 6-13 Dec 2015 15-22 May 2016  Biomass Removal Plan (BRP) for Nam Ngiep Power Company, Final, July 2015 (Prepared by Earth Systems)  Official approvals of the BRP by ADB and MONRE, Sept. 2015	<ul style="list-style-type: none"> <li>The Biomass Removal Plan for the reservoir has been approved by all parties and the selected contractor, LAUNC, has set up camp in Ban Sopyouak, Hom District, to start biomass clearance blocks and develop an effective work force and management team.</li> <li>The EMO needs to monitor the clearance work, and the AIP 2016 should address this new activity and clarify all environmental and safety requirements.</li> </ul>	<ul style="list-style-type: none"> <li>NNP1 has obtained a site specific ESMMP from the BRP Contractor for each of the 18 priority biomass removal areas. The SSESMP contain updated biomass removal area maps and plans for utilization of NTFPs and waste biomass by villagers. Local government agencies have been informed about the plan and expressed interests to be involved in monitoring its implementation.</li> <li>A government approved UXO clearance team is being employed to first clear designated areas of any residual explosives prior to any biomass removal. Villagers are allowed to plant rice on cleared biomass areas before inundation.</li> </ul>	The IAP is satisfied with the updated biomass removal area maps and the management of the Biomass Removal Plan by the selected LAUNC Contractor. Involvement of local villagers, training, provision of safety equipment, and an attractive daily wage has enticed local villages to participate as laborers for the contractor. Villagers are collecting waste timber for beneficial use (mostly as future firewood), but there is no company plan to convert waste biomass to biochar and use it at resettlement village sites where such biochar can be used to enhance soil fertility or to develop other villager livelihood options, such as saving and cutting timber for construction of chairs and tables for schools, development of village nurseries, or collecting and saving valuable seedlings for future agroforestry development, etc. <b>Recommendations:</b> <ul style="list-style-type: none"> <li>The IAP advises that NNP1 should organize a special meeting among key SMO and EMO staff to discuss potential uses of the waste reservoir biomass that would benefit impacted villages and consider pilot projects for livelihood options. The</li> </ul>	Low

				<p>results of the meeting should be incorporated into the biomass removal implementation plan by LAUNC Contractor and overseen by a designated team from within EMO/SMO. Each resettlement village (or interested villagers themselves) could make a storage area for safeguarding useful removed biomass for future self or community use.</p> <ul style="list-style-type: none"> <li>• The EMO/SMO Auditing team needs to be familiar with and oversee the Environmental and Social Safeguards of the BRP as described in the Code of Practice for Biomass Removal (pp. 49-56 of the BRP for NNP1, July 2015). The IAP recommends that the EMO review the Code of Practice with the BRP Contractor to ensure that there is no use of hazardous materials within the reservoir area, no maintenance of vehicles, zero tolerance for hunting or poaching of any kind, etc. and that he understands what he must do to implement the Code of Practice. This Compliance Monitoring work will require a new team of dedicated EMO staff to work within the reservoir area and the AIP 2016 needs to address this new activity in considerable detail.</li> </ul>	
<p><b>* Level of Concern:</b></p> <ul style="list-style-type: none"> <li>• Low - action recommended within 6 months</li> <li>• Medium - action recommended within 1-2 months</li> <li>• High - immediate action recommended</li> <li>• Very High – Highest priority for action</li> </ul>					

## 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 7-14 December 2014 3-10 May 2015 6-13 Dec 2015 15-22 May 2016	Options for implementing a biodiversity offset (long-term issue)	Watershed biodiversity surveys completed –no suitable offset site in watershed. Three other sites proposed by provinces also not suitable	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Verify suitability of Nam Mouane in BKX and/or another suitable site outside project provinces. The implementation of this recommendation is on-going.</li> </ul>	Very High
B2	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 3-10 May 2015 6-13 Dec 2015 15-22 May 2016	Activities along the dam access road need to be managed to reduce impacts (ongoing issue)	Degradation, logging and forest clearance for agriculture along access roads. EPF grant allocated (Dec 2015). Ongoing for life of project	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Work with provincial authorities to limit forest clearance along new dam access road (still an issue).</li> <li>Company to monitor effectiveness of PONRE implementation of EPF grant.</li> </ul>	High
B3					Closed
B4					Closed
B5	Site visits: 7-12 January 2013 17-24 November 2013 6-13 Dec 2015	Workers and construction traffic removing forest resources, illegal logs and wildlife	Prohibition of illegal harvesting and trade is covered in the Developer's Code of Conduct (ongoing issue)	<b>Recommendations</b> The Developer should enforce a zero tolerance policy on illegal logging, hunting and wildlife trade by the employees of the Developer, Contractor, and all sub-contractors. Ongoing need. – EMO to report on any infractions	High
B6	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 3-10 May 2015	Introduction of potentially invasive species as part of reforestation, agriculture schemes	Plans for aquaculture in reservoir to improve livelihoods (ongoing)	<b>Recommendations</b> The Developer should check to make sure that the proposed species to be introduced are NOT potentially invasive Need careful review to ensure no introduction of exotic species with likely negative impact on native fish fauna.	Low

**\* Level of Concern:**

- Low - action recommended within 6 months
- Medium - action recommended within 1-2 months
- Urgent/Very High/High - immediate action recommended

## Summary of Biodiversity Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
B7	Site visits: 7-12 January 2013 17-24 November 2013 7-14 December 2014 15-22 May 2016	NTFPs used by PAP for food security and cash income	<ul style="list-style-type: none"> <li>PAP at all impacted villages are highly dependent on NTFPs</li> <li>NRM report for Houay Soup recommends zoning of forest according to land capacity and advocates another consultancy to assess NTFPs at Houay Soup</li> </ul>	<p><b>Recommendations</b></p> <p>Protect sufficient natural forest within and adjacent to the resettlement sites for villagers to harvest NTFPs or provide alternative sources of income</p>	Closed
B8	Site visits: 7-12 January 2013 17-24 November 2013  3-10 May 2015	<ul style="list-style-type: none"> <li>Monitoring of biodiversity</li> <li>Capacity of provincial and district EMUs for monitoring</li> <li>Community engagement in monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Biodiversity values are not monitored by anyone</li> <li>EMUs in project provinces have limited capacity and resources</li> <li>Hmong villagers have good local knowledge</li> <li>Long term issues</li> </ul>	<p>Reservoir will give access to new areas above water line</p> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>Additional wildlife surveys should be undertaken in the upper watershed during construction to define protection and monitoring needs</li> <li>Hmong villagers should be hired to assist with monitoring biodiversity within resettlement areas and nearby forests</li> <li>Strengthen capacity of provincial EMUs to monitor impacts on biodiversity and environment. (still valid for BIORAP)</li> </ul>	<p>Medium</p> <p>High</p>
B9					Closed
B10	Site visits: 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 Dec 2015	<ul style="list-style-type: none"> <li>Appropriate and integrated watershed management activities</li> <li>Initiate development of ISP for XSB</li> </ul>	<ul style="list-style-type: none"> <li>The watershed now falls mainly within the boundaries of XSB Province which lacks an integrated spatial plan</li> <li>ISP due June 2016</li> </ul>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>Work with MONRE and environmental offices in XSB to develop ISP</li> <li>NNP1PC work with XSB to prioritize and complete planning for districts within watershed as critical input to watershed management plan</li> </ul>	Very high
<p>* <b>Level of Concern:</b></p> <ul style="list-style-type: none"> <li>Low - action recommended within 6 months</li> <li>Medium - action recommended within 1-2 months</li> <li>Urgent/Very High/High - immediate action recommended</li> </ul>					

## Summary of Biodiversity Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
B11	Site visits: 4-11 May 2014 7-14 December 2014 6-13 Dec 2015	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	<b>Recommendations</b> Develop guidelines and mitigation plans to minimise habitat loss due to construction activities and for restoration and rehabilitation of impacted areas. NNP1PC to monitor habitat infractions in watershed	High
B12	Site visit 4-11 May 2014 3-10 May 2015 6-13 Dec 2015 15-22 May 2016	Working with MONRE to manage watershed management activities	<ul style="list-style-type: none"> <li>• Current budget request from MONRE focuses mainly on vehicles and salary supplements, – need to refocus on actions.</li> <li>• Watershed Management Plan is not completed</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>• Little progress with WMP (Dec 2015) Provinces implementing early actions with NNP1PC funding.</li> <li>• No further activities should be supported before approval of the WMP.</li> <li>• Urgent that Watershed Management Plan is completed with 1<sup>st</sup> draft due July 2016.</li> </ul>	Urgent
B13	Site visit 4-11 May 2014	Capacity of environmental units at MONRE to manage watershed management activities	<ul style="list-style-type: none"> <li>• MONRE has very limited capacity at all levels (especially at province and district levels).</li> <li>• Training on village mapping and watershed boundary demarcation delivered.</li> </ul>	<b>Recommendations</b> Developer's EMO to work with MONRE to seek capacity and mentoring opportunities Ongoing	Medium
B14					Closed
B15	Site Visit 7-14 Dec 2014 3-10 May 2015 6-13 Dec 2015 15-22 Dec 2016	Watershed Management Plan should include Houay Soup forests and be integrated with ISP for XSB	Dec 2015 DoLA has agreed PAPs should have sole use of Houay Soup forests	<b>Recommendations</b> <ul style="list-style-type: none"> <li>• Activities in protection forest in Houay Ngua and Houay Soup to be implemented in accordance with WMP objectives. Forest activities at Houay Soup to be funded under Resettlement Plan</li> <li>• Initiate community participatory planning for forest use and zoning with PAPs at resettlement site</li> </ul>	Very High
B16	Site Visit 7-14 Dec 2014 3-10 May 2015 6-13 Dec 2015	Collaboration with NNP2 on watershed management	Developments at NNP2 impact on watershed, including water quality and aquatic biodiversity Limited recent contact with NNP2	<b>Recommendations</b> Continue contact with NNP2 to facilitate collaboration and complementarity of watershed management	High
<p><b>* Level of Concern:</b></p> <ul style="list-style-type: none"> <li>• Low - action recommended within 6 months</li> <li>• Medium - action recommended within 1-2 months</li> <li>• Urgent/Very High/High - immediate action recommended</li> </ul>					

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
B17					Closed
B18	Site visit 3-10 May 2015 6-13 Dec 2015 15-22 May 2016	Watershed Management Plan	Watershed Management Planning team is not yet mobilized	<b>Recommendations</b> <ul style="list-style-type: none"> <li>• NNP1PC should focus on WMP as a priority using EMO leadership until consultants on board.</li> <li>• Urgent that Watershed Management Planning team is mobilized immediately and managed as one integrated team.</li> </ul>	Urgent
B19					Closed
B20					Closed
B21	Site visit 6-13 Dec 2-15 15-22 May 2016	Watershed Management Plan	<ul style="list-style-type: none"> <li>• Separate sub-plans being prepared by consultants</li> <li>• International and national consultants not yet recruited.</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>• Recruit watershed management team leader for quality control and national consultant (liaison).</li> <li>• Prepare one integrated watershed management plan.</li> </ul>	Urgent
B22	Site visit 3-10 May 2015 6-13 Dec 2015 15-22 May 2016	Budgets for Watershed Management and biodiversity offset	<ul style="list-style-type: none"> <li>• Modest budgets allocated but decisions and allocations already being made before adequate plans in place</li> <li>• Ongoing concern</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>• Funding to be allocated according to clear objectives and outcomes.</li> <li>• Review opportunities for supplemental funding from NNP1PC, ADB and other potential sources</li> </ul>	Very High
B23	Site Visit 3-10 May 2015 6-13 Dec 2015 15-22 May 2016	biodiversity offset Management Plan	Revised deadline for offset management plan now extended to April 2017	<b>Recommendations</b> Final choice of site should be made after completion of the survey of Nam Mouane by a biodiversity expert, which should be no later than end-July 2016, so that a decision can be made and management planning can start as soon as possible.	Very High
B24	Site visit 6-13 Dec 2015	Conservation of remaining populations of rare and endangered species in watershed	Important species populations identified at Phou Samsao and Phou Katta and surroundings	<b>Recommendations</b> <ul style="list-style-type: none"> <li>• Issue remains incomplete</li> <li>• Identify opportunities for species conservation activities in XSB from the Environment Protection Fund (EPF); consider designation of core conservation zones as a priority of the WMP</li> </ul>	High
<p><b>* Level of Concern:</b></p> <ul style="list-style-type: none"> <li>• Low - action recommended within 6 months</li> <li>• Medium - action recommended within 1-2 months</li> <li>• Urgent/Very High/High - immediate action recommended</li> </ul>					

## Summary of Biodiversity Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
B25	Site visit 6-13 Dec 2015	Survey Nam Mouane as potential Offset site	<ul style="list-style-type: none"> <li>BKX proposed 77,000ha at Nam Mouane site; need to assess biodiversity values and access for technical assistance</li> <li>Surveys to be initiated by March 2015 for draft report June and final decision Sept 2015</li> </ul>	Completed	Closed
B26	Site visits: 6-13 Dec 2015 15-22 May 2016	Survey at 2 <sup>nd</sup> back-up site for potential offset	<ul style="list-style-type: none"> <li>Proposed sites Khoun Xe Nong Ma, Xe Sap have high biodiversity potential but outside project area</li> <li>Brief survey by BAC and NNP1PC to KXNM in Khammouane Province</li> </ul>	<b>Recommendations</b> Given apparent conservation value of Nam Mouane and strong provincial support concentrate solely on Nam Mouane as offset site unless evidence arises of conflicting development plans.	High
B27	Site visits: 6-13 Dec 2015 15-22 May 2016	Biomass clearance	Site plans under prep and clearance progressing well.	<b>Recommendations</b> Review detailed site plans to ensure no new access into watershed forests. Ongoing.	Medium
B28					Closed
B29					Closed
B30	Site visit: 15-22 May 2016	Data on Nam Mouane as a biodiversity off-set site	Initial results from Biodiversity field surveys indicate Nam Mouane is promising as offset site – now need to begin collating additional information on habitat coverage etc.	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Collect further data for Nam Mouane including satellite imagery, any information re conflicting development plans.</li> <li>Collect good baseline data on boundaries, forest types, extent of shifting agriculture and opportunities to include more ever wet forest within boundaries of proposed site. This information will feed into the offset management plan (BOMP) and monitoring plans.</li> </ul>	High
<b>* Level of Concern:</b> <ul style="list-style-type: none"> <li>Low - action recommended within 6 months</li> <li>Medium - action recommended within 1-2 months</li> <li>Urgent/Very High/High - immediate action recommended</li> </ul>					



## Summary of Biodiversity Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
B31	Site visit: 15-22 May 2016	biodiversity offset Option paper and final decision on site	biodiversity offset site has been under discussion for 3 years. Option paper due end July 2016 needs to confirm site to meet ADB deadlines.	<b>Recommendations</b> Based on current evidence (forest cover, biodiversity and conservation values, political support) IAP recommends Nam Mouane as offset site unless there are conflicting development plans for the area.	Very High
B32	Site visit: 15-22 May 2016	NNP1PC and PONRE to discuss protection status and institutional mechanisms for Nam Mouane	biodiversity offset site currently has no legal status in Laos. Need to clarify how area will be protected and managed.	<b>Recommendations</b> Recommend outlining the steps for area to achieve NPA status. Institutional arrangements and lessons learned from other hydropower development projects in Lao PDR should be outlined in BOMP.	High
B33	Site visit 14-21May 2016	Additional biodiversity surveys in watershed	Additional surveys commissioned in Dec 2015 but not yet underway	<b>Recommendations</b> <ul style="list-style-type: none"> <li>Ideally complete additional surveys to feed data into IWMP. High priority should be the selection of species to focus on. At a minimum integrate results of initial surveys in IWMP to sensor protection of key species through land use plans, forest protection and species action plans.</li> <li>Fisheries management plan also needs to be integrated in IWMP</li> </ul>	High
B34	Site visit14-21May 2016	3 <sup>rd</sup> expert to Biodiversity Advisory Committee	3 <sup>rd</sup> biodiversity expert not yet recruited	<b>Recommendations</b> BAC should have a minimum of 3 biodiversity experts to provide advice to NNP1PC As agreed during the May mission, recruit Dr. Will Duckworth by end of June 2016, or as soon as he is available	High
<p><b>* Level of Concern:</b></p> <ul style="list-style-type: none"> <li>Low - action recommended within 6 months</li> <li>Medium - action recommended within 1-2 months</li> <li>High - immediate action recommended.</li> </ul>					

# Annex 1: Resettlement Issues

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## 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 and one hamlet 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 hamlet in the Construction Area in Bolikhamxay 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 2,393 ha called Houay Soup (Zone 5), defined in the Concession Agreement; and, some 3,715 ha remains in an adjacent protection forest area that will be managed through an integrated Natural Resources Management Plan. The Houay Soup resettlement area is located on the right bank of the Nam Ngiep river under the administrative jurisdiction of Ban Hat Gniun, Bolikhan District, Bolikhamxay Province.

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). Most villagers’ houses will not be impacted. Mostly agricultural production land will be impacted. The PAP in Zone 2UR are seeking the following: (i) compensation from the Developer to relocate impacted houses within the village; (ii) access to old agriculture lands that will remain above the reservoir inundation level; and, (iii) change and diversification of livelihood, from agriculture to other occupations. Discussions on resettlement, relocation, and compensation entitlements continue between PAP and NNP1PC. The assets survey in Zone 2UR has been completed. A definitive review of PAP assets will take place once the Technical Division has completed a long-overdue detailed demarcation of the full supply level of the reservoir; and, final determination of the need for expropriation of additional project lands to build embankments against reservoir waves and floods and to prevent soil erosion into the reservoir.

Resettlement is the responsibility of NNP1PC’s Environment and Social Division (ESD), specifically the Social Management Office (SMO). The ESD director is interacting with the Provincial Resettlement Management and Living Condition Restoration Committee (PRLRC) (*Resettlement Committee*), as well as resettlement management units (RMUs) established by the GOL in Xaysomboun and Bolikhamxay provinces, to prepare for, organize, and facilitate PAP resettlement and relocation in a manner that meets ADB safeguards and other international standards.

## Supplementary Comments on Selected Resettlement Issues<sup>1</sup>

### Supplementary comments related to Zones 3 and 5

1. **Issue:** Originally, the size of the Houay Soup resettlement area (Zone 5) was estimated at 6,108 ha, of which an estimated 420 ha was to be designated as suitable for lowland rice production. The GOL has now officially allocated only 1,745 ha of the Houay Soup area – with an additional 648 ha promised – for resettlement by PAP from Zones 2LR and 3. The remaining 3,715 ha is a national protection forest area (PFA). According to Decree 333/PMO, villagers will have access to the PFA to collect non-timber forest products (NTFPs) as well as for passive agriculture, forest development, and natural agriculture. In this context, PAP who choose to resettle at Houay Soup will be able to use PFA forestry resources within the framework of an integrated Natural Resources Management Plan being prepared by NNP1PC.
2. The IAP has not been shown any final land use plan for the Houay Soup resettlement area. The IAP was informed that the plan was completed in May 2015, but it was not presented to the IAP either then or during the most recent site visits in December 2015 and May 2016. The IAP expects that the ADB and the LTA will review and approve the revised land use plan for the resettlement area. The IAP expects that NNP1PC's revised plan will reflect the viability of land-based livelihoods at Houay Soup, including sufficient grazing areas and taking into consideration environmental infrastructure (e.g., solid waste disposal, proper drainage, etc.). **(Issue R3)**

#### Recommendations:

- The IAP recommends that the land use plan for Houay Soup be finalized and approved by both the RMU and PRLRC.
  - The IAP recommends that the Pilot Plan / Houay Soup demonstration farm be rehabilitated and used to demonstrate agroforestry and mixed farming, including high-yield rice varieties, diversified crops linked to local markets, penned livestock, and cut-and-carry fodder gardens to supplement the feeding of large livestock.
3. **Issue:** The IAP understands that about one-half of the PAP in Hatsaykham have chosen to be resettled at Houay Soup. The other half have chosen to self-resettle. Some PAP are prevented from resettling in their first choice location, Ban Hat Gniun. Moving close-by would allow them to continue to look after rubber trees and other upland and garden crops that will not be inundated by the NNP1 reservoir. Under the CA, the RMU has the right to designate areas to which self-resettlers **cannot** relocate. The RMU has prohibited self-resettlement to Hat Gniun, Thaheua, and Somseun villages. The RMU's reasoning is that if PAP choose to resettle in these villages, they should resettle at Houay Soup which is close-by and which is being developed by NNP1PC specifically as a resettlement community.
  4. The Hatsaykham resettlers reported to the IAP that even with compensation, they have insufficient funds to purchase land in a new location, sufficiently close to their old village, so that they could continue to care for tree crops and gardens and upland crops that would not be inundated. Most self-resettlers indicated that they would remain in Bolikhan District. However, most claimed that following self-resettlement they would be more poor than they are currently. The NNP1 hydropower project should not cause poverty among any PAP, but NNP1PC should find ways to facilitate the livelihood of self-resettlers as well as resettlers. NNP1PC needs to have a written understanding with Bolikhan District officials and the Bolikhamxay RMU that clarifies NNP1PC's

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<sup>1</sup> 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.

responsibilities related to self-resettlement leading to increased poverty or vulnerability among self-resettlers. One option is that self-resettlers who are unable to establish livelihoods elsewhere can be resettled at Houay Soup even if they already received compensation, but with fewer benefits than resettlers. Additional related issues include the following:

- Compensation received by Hatsaykham self-resettlers for land they used in Houay Soup may be inadequate because they may have been compensated based on the number of laborers in the family. This issue should therefore be revisited and resolved.
  - If Hatsaykham PAP have remaining unaffected land, NNP1PC should check if this land is located within the 3,715 ha of national protection forest which will be managed through the Integrated Natural Resources Management Plan; wherein such lands also should be compensated because the project is preventing PAP from using that land.
  - NNP1PC is bound to ensure that no PAPs, including self-resettlers with the project influence zone, become poorer and that their net income improves 10 years post-COD (reference: CA, Annex C, para. 87).
5. The IAP interviewed some of the nine families at Hatsaykham who are not registered in the village or had moved into the village after the cut-off-date. These families are not included in either the Houay Soup resettlement program or in the self-resettlement program. Since these families are located in the project area, they are entitled to use the grievance procedure that has been established to handle complaints from all impacted parties. **(Issue R5)**

**Recommendations:**

- The IAP recommends that in consultation with the RMU and district officials, NNP1PC should clarify and record its duties and responsibilities to the self-resettlers who may be authorized by the GOL to self-resettle at Houay Soup at a later date.
- The IAP recommends that in consultation with the RMU and district officials, NNP1PC personnel should confer work with the nine families who are not registered in the village, or who moved into the village after the cut-off-date, to prepare and submit grievances for consideration by the concerned authorities.

**Supplementary comments on 2UR villages in Thathom District, Xaysomboun Province**

1. **Issue:** An estimated 170 households in Ban Pou, Ban Hatsamkhone, and Ban Piengta villages located in Zone 2UR will be impacted by the project. PAP have decided to either (i) undertake internal self-relocation; or, (ii) change their livelihood with support from NNP1PC SMO livelihood development staff. About 20 households are expected to lose all of their land as a result of reservoir impoundment. The IAP understands that Thathom District has identified two areas suitable as agriculture replacement land for impacted PAP. NNP1PC will need to work with the concerned PAP to determine whether they will relocate their agriculture activities or change livelihood. **(Issue R7)**
2. The principal issues brought to the attention of the IAP during consultations with selected PAP leaders from Zone 2UR during the site visit in December 2015 include the following:
  - **Demarcation of full supply level of Nam Ngiep reservoir:** A recent updating of the demarcation of the full supply level of the Nam Ngiep reservoir still is inadequate to finalize asset surveys of PAP in the three villages. A more accurate demarcation is needed to ensure that PAP know the exact location of the high water level of the reservoir; and, to know the full impacts to land, property, and

livelihood. In addition, the NNP1PC technical department now is considering the construction of embankments to protect the communities from waves and potential flooding above the full supply level and to reduce erosion into the reservoir.

- **Sustainable alternative livelihood development:** Once again PAP representatives are requesting that NNP1PC livelihood staff intensify and accelerate their individual household consultations on new livelihood options. Many PAP already were well aware of the impacts.

**Recommendations:**

- The IAP recommends that an **accurate and detailed demarcation** of the full supply level of the Nam Ngiep 1 reservoir by NNP1PC engineers should be completed as soon as possible. The current general demarcation is insufficient to finalize the asset survey.
- The IAP recommends that NNP1PC engineers finalize the design and placement of any embankments to be constructed in the area so that project lands can be identified and asset surveys can be completed.
- The IAP recommends that the livelihood development team at 2UR be strengthened and provide closer follow up and consultations with individual PAP families in these impacted communities.
- NNP1PC should work with the RMU and district officials to determine the need to develop agricultural replacement land for PAP at 2UR.

**Supplementary comments on organizational and institutional issues**

1. **Issues:** The IAP is pleased to note that significant progress has been made in completing the assets surveys and paying compensation. The IAP remains concerned about the following organizational issues related to resettlement activities (**Issue R8**):
  - Continuous delays in resettlement of the PAPs from Hatsaykham hamlet.
  - Continued weak support of the RMU to Mouang Hom district officials who are responsible and interested in working with PAP in Zone 2LR.

**Recommendations:**

- The IAP recommends that NNP1PC review the assignment of vehicles to the Xaysomboun RMU and reassign one vehicle to be based permanently at Mouang Hom district to support pre-resettlement activities for which district officials and NNP1PC staff are responsible.



# Resettlement and Social Photos



House construction at the Houay Soup resettlement area. Note the ornaments that indicate that PAP have already conducted ceremonies that show ownership.



The residential area of the Houay Soup resettlement site with grass being planted for erosion control of sloped areas.



The NNP1PC supported livelihood program at Ban Thaheua includes promotion of small livestock, cage culture of fish, upland crops, and wet season vegetable gardens.



PAP coming to work in their allocated land in the Houay Soup resettlement area.



Hmong spiritual ceremonies were performed before building houses in Houay Soup resettlement area.



The IAP Indigenous Peoples Specialist discussing social and resettlement issues with the Ban Hatsaykham hamlet headman

# Annex 2: Social Issues & Indigenous Peoples' Issues

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## Summary of Social Specialists Inputs

1. This is a progress report of the 7<sup>th</sup> site visit to the Nam Ngiep 1 Power Company (NNP1PC). The site visit took place on 15-22 May 2016. Because of the security issues in Xaysomboun Province and as the IAP Expert on Indigenous People (IP), I could not visit four directly affected villages in Zone 2LR (Ban Namyouak, Ban Sopyouak, Ban Soppouane, and Ban Houaypamom) in Hom District, Xaysomboun Province. However, the Hom District Governor organized a meeting for the village headmen and village committees of these villages to meet the IAP in Hom District Office. I met the Headman and village committees of Ban Namyouak to discuss the 44 households who have refused to have their assets registered with the Project and other issues.
  2. In Zone 2UR, the IAP also could not visit the three indirectly affected villages, namely: Ban Pou, Ban Phiengta, and Ban Hatsamkhone in Thathom District, Xaysomboun Province for security reasons. However, the Thathom District Governor organized a meeting at the Thathom District Office for the PAPs and the IAP to meet one another. And in Zone 2UR, the IAP social specialist was assigned to meet the Ban Pou village leaders and committees.
  3. In Zone 3, the IAP visited a directly affected village, Ban Hatsaykham and an indirectly affected villages, Ban Thahuea in Bolikhan District, Bolikhamxay Province; and, visited the Huoay Soup Resettlement Site.
  4. During this 7<sup>th</sup> site visit the IAP met approximately 30 directly and indirectly impacted PAPs in formal and informal meetings. All relevant issues were discussed and an attempt made to find the best solutions working together with the GOL, IAP, ADB, LTA, the NNP1PC staff, village headmen, village committees, and village elders.
- 2. The IAP had 6 formal meetings with higher levels of the GOL, as follows:**
- **On May 17, 2016:** formal meeting with the Governor of the Hom District (Mr. Boonsoung Biayathawbiasoun) and Head of RMU of Xaysomboun Province (Mr. Phonexay) together with the village headmen and village committees of the 4 villages in Zone 2LR (Ban Namyouak, Ban Sopyouak, Ban Soppouane, and Ban Houaypamom)
  - **On May 19, 2016:** formal meeting with the Deputy Secretary Political Leader of Thathom District (Mr. Jitthon), the Head of RMU of Xaysomboun Province (Mr. Phonexay) and staff together with 6 village elders of Ban Pou, Zone 2UR
  - **On May 19, 2016:** formal meeting with the Governor of Bolikhan District, Bolikhamxay Province
  - **On May 20, 2016:** formal meeting with Head of RMU of Bolikhamxay Province (Mr. Khamsing).
  - **On May 20, 2016:** formal meeting with Vice Governor of Xaysomboun Province (Mr. Laopao Xiong) in Vang Chao Guesthouse, Longxan District, Xaysomboun Province.
  - **On May 21, 2016:** a small group meeting with the Social Team of the NNP1PC Staff at the Mercure Hotel, Vientiane.

3. **This 7th Site Visit:** The IAP had formal meetings and informal meetings. The IAP discussed, interviewed and observed issues in many cultural and social aspects. The IAP social specialist schedule was as follows:

- **14 May, 2016**
  - Arrival Vientiane, Lao PDR and had worked on reviewing the related NNP1PC documents.
- **15 May, 2016**
  - Working on reviewing the related NNP1PC documents and had a pre-meeting with the IAP members for debriefing meeting and sites visit.
- **16 May, 2016**
  - A formal Debriefing meeting with NNP1PC Director and staff at NNP1PC Head Office in Vientiane Capital.
- **17 May, 2016**
  - A formal meeting with the Governor of the Hom District, the Head of RMU of Xaysomboun Province together the headman and with 6 village elders of Ban Namyouak, Zone 2LR in Hom District Office.
- **18 May, 2016**
  - Site Visit to Houay Soup Resettlement Site (HSRS)
  - Meeting with the Headman and 9 elders of Ban Hatsaykham, Zone 3
  - Meeting with the Headman and 20 elders of Ban Thaheua, Zone 3
- **19 May, 2016**
  - A formal meeting with the Deputy Secretary Political Leader of Thathom District (Mr. Jitthon), the Head of RMU of Xaysomboun Province (Mr. Phonexay) and staff with 5 village elders and the headman of Ban Pou, Zone 2UR in Thathom District Office.
  - A formal meeting with the Governor of the Bolikhan District, Bolikhamxay Province.
- **20 May, 2016**
  - A formal meeting with the Head of RMU of Bolikhamxay Province (Mr. Khamsing) in his office.
  - A formal meeting with Deputy Governor of Xaysomboun Province (Mr. Laopao Xiong) at Wang Chao Guesthouse, Longxan District, Xaysomboun Province.
- **21 May, 2016**
  - A formal meeting with NNP1 PC Director and staff for presentation of facts finding and discussions at NNP1PC Head Office in Vientiane Capital.
- **22 May, 2016**
  - Working on NNP1PC documents and returning to Bangkok, Thailand.

**4. The Summary of IP and Social Issues:**

It was unfortunate that the IAP could not visit the PAP in their villages in Zone 2LR and Zone 2UR because of security issues in Xaysomboun Province. However, the IAP was able to meet the PAP in the district offices instead: Zone 2LR in Hom District, and Zone 2UR in Thathom District. The PAP main issues and problems are: compensation, IP (Hmong) graves moving, resettlement and self-resettlement, resettlement site, compensation, new items of assets, compensation unit rate, livelihood programs, food security, community participation, drug abuse, crimes, and cooperation.

**5. Requirements and my Recommendations:** I have provided above.



**6. The Next Site Visit (the 8<sup>th</sup>) during December 11-18, 2016:**

- I would like to meet the Governor of Xaysomboun Province, Head of RMU of Xaysomboun Province and Governor of Hom District.
- I would like to meet the Governor of Thathum District, Xaysomboun Province
- I would like to meet the Governor of the Bolikhamxay Province, the Head of RMU of Bolikhamxay Province, and the Governor of Bolikhan District.
- I would like to meet PAP in 10 villages (4 villages in Zone 2LR: Ban Namyouak, Ban Soupyouak, Ban Sopphuane, and Ban Houaypamom); 1 village in Zone 3 (Ban Hatsaykham); 2 villages in Zone 5 (Ban Hat Ngiun, and Ban Thahuea); 3 villages in Zone 2UR (Ban Pou, Ban Phiengta, and Ban Hatsamkhone).
- I would like to visit Huoay Soup Resettlement Site.
- I would like to meet the Vice President of the Lao Front for National Construction (Mr. Tong Yer Thao).

# Annex 3: Environmental Issues

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**Organizational, institutional and mitigation environmental issues of concern to the IAP include the following:**

- 1. Issue: The Developer is expected to contribute to capacity building of MONRE and to financially assist in establishing an Environmental Management Unit (EMU):** The EMO is inviting the EMU of Bolikhamxay to join in its compliance monitoring activities, enabling the EMU to monitor implementation of the EMP and to report on the adequacy and effectiveness of mitigation measures being implemented to minimize environmental impacts. The EMU produced its first monitoring report in November 2015 and the report is posted on the MONRE website, which is accessible by PONRE and DONRE but not by the general public (restricted access).<sup>2</sup> The EMU participated in the March 2016 environmental monitoring program, but no joint program of compliance monitoring activities was held in either April or May.

The IAP met with the EMU representatives of Bolikhamxay Province (Mr. Saysavanh Nantha, Head of Environmental Section DONRE, and Mr. Amphayvanh, Technical Staff EMU (Mr. Thayvanh Saythummy, Head EMU, was away in Vientiane for a meeting)<sup>3</sup>. The EMU stated that they are receiving NNP1 Monthly Monitoring Reports from the EMO in both English and Lao. Joint compliance monitoring with involvement of the EMU at Bolikhamxay has been on-going and is an effective training tool.

A similar program needs to be planned and started with the EMU from Xaysomboun Province. It is not known whether the strategy plan or action plan for the newly established EMU has been received from MONRE. A copy of the recently completed Annual Implementation Plan for the ESMMP-CP 2016 needs to be shared with the EMU at Xaysomboun so they will be aware of planned EMO/SMO activities to be started in their province.

## **Recommendations:**

- The IAP recommends that the Company, as part of its capacity building efforts, convenes a workshop combining the EMUs of both provinces and MONRE to review the duties of the EMU for the Nam Ngiep watershed. MONRE should be invited as Workshop organizer to review “lessons learned” from Nam Theun 2 and the Theun-Hinboun hydropower projects, and include the expanded mandate of MONRE to oversee *integrated environmental conservation interests* of water, forest, and biodiversity protection at the regional (PONRE) and district (DONRE) levels. The

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<sup>2</sup> The EMU monitoring report noted the following environmental non-compliances: (1) wastewaters at camps were not being adequately treated to meet Lao effluent standards; (2) dust levels at the crushing plant exceeded safeguards for workers; (3) management of hazardous chemicals and wastes at several work areas needed improvements; (4) river water quality in the Nam Ngiep showed higher than normal suspended solids levels and the EMU believes the increased sediment loads are caused by project activities; and (5) the EMU requested that the solid wastes from Tha Dua and Hat Ngium villages be collected and disposed of at the project sanitary landfill as villagers were disposing wastes into the river. These monitoring results were obtained visually and by discussion with villagers, as the EMU has no monitoring equipment of its own. The report illustrates that the EMU monitoring can be useful to both the company and local authorities. The budget allocation received by the Boulikhamxay EMU was insufficient to buy any environmental monitoring equipment. The EMU has thus requested additional funds from MONRE for purchasing field monitoring equipment to test key parameters in situ, such as dissolved oxygen, pH, and turbidity. Samples for testing other parameters of importance could be collected in standard sterile jars and sent to the MONRE or NNP1PC environmental lab.

<sup>3</sup> The EMU consists of 4 persons from PONRE plus 3 in the “field” (DONRE assigned persons) in Boulikhamxay Province. As noted in Annex C Social and Environmental Commitments of the CA, the EMU is required to monitor all environmental aspects of project development and operation except resettlement. Monitoring of the environmental situation is to ensure that the company complies with the Lao regulations and the CA.

workshop would be an appropriate time to discuss how best to make use of NNP1 funds to be contributed as per CA commitments (versus recent EMU and MONRE budget requests), how to monitor impacts on water and forest resources from other hydropower project developments, and how best to make use of future monitoring reports.

- The meeting should also review the new AIP 2016 of the ESMMP-CP as a basis for understanding the future compliance monitoring program in the provinces. These activities would also be of interest to the Nam Ngiep River Basin Committee comprising representatives of private and public sector development projects in the Nam Ngiep river basin. At the proposed meeting, the IAP recommends that NNP1 includes *compliance monitoring training* of the EMUs by illustrating actual “environmental issues” found at the contractor camps or construction sites of NNP1, how the Inspection and Compliance Monitoring Report is developed, discussed and approved with the Contractor and a date agreed upon for corrective actions to close the environmental issue so that a “non-compliance” is not issued by the Company. The EMO then returns to the site of the environmental issue together with the EHS Managers of the Head Contractor to inspect the environmental issue on the date committed by the Contractor to complete the correction. The EMO should invite the EMU to join with them during the inspection and compliance monitoring mission.
- It is recommended that the Biomass Removal Plan, July 2015, be included in the capacity building program as the EMU can play an important role in compliance monitoring of the Biomass Removal Plan and the Code of Conduct of the work force and contractor. The EMU monitoring reports will be useful to the EMO in its overseeing of the contract implementation. In the event that the EMU finds non-compliances to safeguards, they can then inform NNP1 for their response and follow up what actions the Company will take to correct the non-compliance.

In summary, such assistance to the training of the EMUs will benefit both PONREs and DONREs and serve to build confidence in the communities of their benefits from the project and the establishment of a workable grievance mechanism to solve environmental problems.

- 2. Issue: Solid waste management during the construction phase, in both project areas and impacted communities:** The EMU expressed their concern about solid waste collection and management in impacted communities and the need for more focus on “green technologies” to cope with solid wastes from new shops, restaurants, bars, and service centers. They are supportive of the EMO’s efforts to allow villagers to collect, use, and sell solid wastes from the service areas and would like to see that extended to include similar wastes from the construction camps. Currently contractors are required to separate their own wastes prior to sending solid wastes to the project landfill. No hazardous wastes are to be included in the construction wastes sent to the project landfill. Contractors collect, separate, label, and store hazardous materials at their workplace or camp, and the EMO keeps records (updated monthly) of what is being stored (and sold).

As previously noted the EMU requested that permission be given to Thaheua and Hat Gniun (Zone 5) and Hatsaykham (Zone 3) to use the project landfill after preliminary separation of potential recycling materials by the villagers themselves to the Community Recyclable Waste Bank Programme which they hope will develop in all resettlement villages.

The IAP is enthusiastic about the Waste Bank program and encourages NNP1PC to expand the concept throughout the project. It is important that the EMO continues to keep a detailed inventory of construction and camp wastes generated and being sold (including hazardous wastes). These data will be important for decision making on the future waste management system for the project.

**Recommendations:**

- The EMO should continue to involve the EMU in working with the Heads of each village and to set up village committees to reach agreement on how best to manage a collection, separation, and recycle system. Ethnic factors apparently dictate which food wastes are being collected, such that the Company needs to demonstrate a broader usage of food wastes for animal feeding and compost making to better utilize the available organic wastes. The IAP is supportive of the Company's efforts to focus on "green technology" for recycle and reuse of solid wastes and believes that this approach will create job opportunities, livelihood development, and future income generating activities for participating villagers. The EMO should find and provide technical assistance for developing a management plan for the whole project area.
- It is recommended that a cost-benefit analysis be carried out for alternative recycle technologies based on the types and quantities of solids wastes being produced, now and in the future operating phase. Payments for recycle materials will change over time and a sensitivity analysis will help the Company together with the Village Committees to decide which options appear most suitable for selected villages.
- Maximizing the "green technology" approach will decrease future costs of building and operating a landfill and transport costs for trucking wastes to a landfill disposal site. Collection fees from villagers should be part of the solid wastes service plan thus encouraging more waste recycling as an incentive to lower costs and improve waste management and recycling by the village Committees. The analysis should include improved living conditions in the villages (cleaner environment, less rodents, fewer mosquitoes, etc.) This is a worthy environmental project for these project impacted communities and the lessons learned by both the EMU and the EMO can be carried over into all the resettlement villages of NNP1 in the future.

- 3. Issue: Health Care and Safeguards:** Considering the large work force of the Company, CWC and sub-contractors, it appears essential to implement at site a proper health clinic with qualified medical staff and assistants, including a standby ambulance service. This is especially important given the limited medical facilities available at Paksan, the distance and time needed to reach Paksan (or Vientiane in the case of a severe injury). The situation for NNP1 dictates that a well-equipped and adequately staffed health clinic should be in operation at the Owner's Main Camp site.

**Recommendations:**

- The IAP again recommends that NNP1 should have an independent medical review of the health clinic established at the Owner's Main Camp to ensure that the facility is adequately equipped and staffed for the large work force now employed by the project. The review should cover an evaluation of the clinic's capabilities to treat injuries, manage more serious cases until a standby ambulance can transport patients to a hospital with appropriate medical facilities, and temporarily serve for backup health care of project impacted villagers until the Houay Soup health clinic is established.
- According to IFC Environment, Health, and Safety Guidelines (2007), the Company should ensure that first aid attendants are available for the facility as well as medical equipment suitable for the personnel, type of operation, and the degree of treatment likely to be required prior to transportation to an established regional hospital.

- 4. Issue: NNP1PC Management of Environmental Issues:** The IAP site visit allowed for numerous observations of cooperation and technical support from Management and the Technical Division to the EMO. The IAP is aware of improved communications and support among the Departments, and the AIP for 2016 provides further evidence of planned cooperation and support among company departments.

**Recommendations:**

- NNP1PC should continue to support improved cooperation between the Technical Division and the EMO, especially technical assistance for environmental infrastructure and monitoring of issues of common concern (overseeing the Contractor and Sub-contractors' environmental protection systems, implementation of the Biomass Removal Plan, the Annual Implementation Plan of 2016 of the ESMMP-CP, and Code of Conduct).
- The Technical Division should again bring in a Wastewater Consultant to review the construction of the pollution control systems built by the Contractor and Sub-contractors. Errors in construction of these works should be corrected and the contractor made to rebuild the system as per the advice of the Environmental Engineering Consultant.
- The Environmental Laboratory should be fast-tracked and field monitoring equipment purchased for improved monitoring and verification of the effectiveness of corrective mitigation measures throughout the project. Current monitoring of effluent samples (frequency and parameters monitored) are insufficient to provide feedback on the adequacy or efficiency of the installed treatment system. The monitoring program needs to be problem oriented, reactive and adapted to the changing characteristics of the construction program. The AIP 2016 should address these issues in detail.
- Follow up of non-compliances with the contractors shows improvements, but the EMO and TD need to remind Contractors that implementation of environmental mitigation measures is an integral part of the construction program and its measurement of progress. Contractors are already subject to fines by MONRE according to the CA, Annex C, Environmental and Social Obligations, Appendix 4 Penalties (pg.114): *"Failure to comply with conditions in the ECC, Permits or Emission Limit Values (per single violation/ instance 8,000,000 to 80,000,000 Lao KIP"*. Aggravating factors considered include a history of non-compliance and potential to cause serious damage to the environment or human health.

5. **Issue: The EMO needs to build and operate its own Environmental laboratory:** The IAP is pleased to see that the contract for construction of the Environmental Laboratory has been signed but is disappointed that the lab will not be functioning until the end of the 3<sup>rd</sup> Quarter 2016. The staff of EMO are competent, well trained and able to carry out environmental monitoring work and perform many analyses in the field (ambient sampling and analysis with portable test kits). on their own, including key water, wastewater, and other waste parameters (air quality, noise, vibration, and even future Greenhouse Gas monitoring requirements). There are currently four staff trained and well qualified. Analytical testing of parameters by the EMO staff would then reduce the need for samples to be sent to UAE, Bangkok, for analysis, and the Lab could better support the EMO Compliance Monitoring work of construction sites and ambient environmental conditions.

**Recommendations:**

- 1) The IAP recommends that NNP1 FAST-TRACKS the construction of the EMO Environmental Laboratory and places orders for field monitoring equipment now as numerous water quality parameters can be monitored at site or in temporary facilities at the EMO Offices, Paksan. It is not necessary to wait for completion of the lab building to get In-house analyses started.
- 2) In-house monitoring will benefit the company in supervising the contractors to ensure that they are meeting their contract requirements and that improvements to the existing wastewater treatment plants are working effectively.
- 3) The new AIP 2016 of the ESMMP-CP should include measurement of Greenhouse Gases at the Environmental Laboratory, as the Biomass Removal Plan has already begun implementation (April 2016) and this parameter is a primary criterion of the BRP. Unfortunately, the AIP of 2016 overlooked this commitment to monitor GHGs.

6. **Summary:**

The IAP met with key EMO staff of the three divisions: (i) watershed biodiversity team; (ii) compliance and environment team (environmental monitoring and compliance staff overseeing contractors); and, (iii) database and control staff; and, reviewed environmental issues of wastewater treatment plants for all construction camps, the sanitary landfill, biomass removal plan, water quality monitoring, auditing of contractor camps and work sites, solid and hazardous wastes management at the construction sites and in the villages, recycle opportunities for all types of solid wastes, etc. The IAP believes that the EMO is competent and the technical staff members are adequately experienced and capable of carrying out all their responsibilities in a professional manner that meets international "best practices". However, monitoring tasks for the biomass removal plan and the wastewater treatment plants at all work camps requires that the Compliance Monitoring team must redesign its monitoring program (type of sample, parameters to be measured, location and frequency of sampling and analysis) and present a new plan with designated staff for each activity.

The IAP recommends that NNP1PC develops a Closure Plan for work sites that includes a checklist for handling all residual wastes, cleanup, and restoration or revegetation of the work site to control erosion and sediment loss. And lastly, many new construction activities are underway, thus it would appear beneficial to the Company to have the LTA and IAP carry out site inspections during alternative quarters or that the LTA should be visiting quarterly and overlap with the IAP twice per year so that comments and the reports can be made available to the IAP for review.



# Environmental Photos



Above: Location of sanitary landfill for the NNP1 project to be built and operated by a private contractor supervised by the Owner. Pictures show one “temporary pit” partially filled with construction and camp wastes. These wastes were not separated for recovering recyclable materials. The temporary pits will be emptied and re-constructed in a properly designed sanitary landfill. The new pits will be lined with an impervious layer of compacted clay and a HDPE liner. A leachate collection system will be installed and connected to a series of leachate evaporation ponds. Construction of the 1<sup>st</sup> stage of the Solid waste landfill has just started as shown in the picture on the right. NNP1 landfill site should also include a temporary storage facility for storage of recyclable materials and hazardous wastes separated by or delivered to workers at the project landfill. NNP1 will manage the site for both construction and operation phases.



Photo shows improved construction of wastewater pond walls or berms. The ponds have also been replanted with aquatic plants meeting wetlands treatment specifications. However, the effluent still does not meet the Lao Effluent Standards for BOD, COD, and fecal coliforms.



Photo shows properly designed and constructed wastewater treatment system. Shape and size of wetlands for the Owner’s Camp is appropriate; the aquatic plants are typical for wetlands treatment. There is no chlorine contact tank or monitoring tank to check the quality of the treated effluent, but the treatment plant effluent does meet the Lao discharge standards.





Combined wastewater “aeration” tank at Main Contractor’s Camp. This tank is not adequate to be considered as an aeration tank; there is no separation of solids after the aeration process; effluent from this tank is released to the environment without meeting Lao Effluent Standards.

Picture shows discharge area where effluent from the Main Contractor’s camp is discharged to the environment. Flooded field contains contaminated wastewater – coliforms in effluent exceed 160,000 MPN/100 ml. A chlorine contact tank needs to be installed as a final step in the treatment process.



Start of biomass removal in the reservoir area, Block 4, Ban SopYyouak, Hom District. A total of 1,912 ha, divided into 18 blocks, will be cleared of biomass (cut, burn and remove). Local villagers interested to serve as labor register with Village Chief, a contract is signed between villagers and Contractor, villagers are trained and provided with safety equipment, and supervised by contractor’s staff. Cut biomass can be kept and used by villagers for firewood, building huts and re-burn. Villagers can request to use cleared areas for short-term crop plantations.



# Annex 4: Biodiversity Issues

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## **Seventh IAP visit to NNP1 on 15-22 May 2016**

This report is based on visits by the Biodiversity Specialist and other IAP members to the Nam Ngiep1 hydropower project, discussions with the Project Developer, the NNP1PC Managing Director, NNP1PC EMO biodiversity and watershed teams, ADB environment team, Lenders Technical Advisory (LTA) team, and the provincial office of natural resources and the environment (PONRE) of Bolikhamxay Province (BKX). The Biodiversity Specialist had the opportunity for a 3-day visit to the proposed biodiversity offset site in the Nam Mouane watershed with a team consisting of PONRE staff (led by Mr Konglee, Deputy Director, BKX), NNP1PC staff (Managing Director Yoshiro Yamabayashi, EMO, and Biodiversity team) and Dr. Ramesh Boonratana from the NNP1 Biodiversity Advisory Committee (BAC). She is grateful to NNP1PC and PONRE for arranging this visit with local government and military support.

This report covers: Progress with identifying a site for a biodiversity offset, the conservation potential of the Nam Mouane protection forest area, the watershed management plan, biodiversity funding and the BAC.

## **Summary**

Since the last IAP visit in December 2015 there has been continued good progress on key biodiversity issues with biodiversity surveys and further review of a potential biodiversity offset site in the Nam Mouane catchment area, Bolikhamxay on the border with Vietnam. Surveys, including camera traps, were undertaken to verify biological values and accessibility of the site. Selecting an offset site, and developing an appropriate management plan, is critical to meet ADB conditions. Progress with the biodiversity offset component is regarded as satisfactory.

Progress with developing the integrated watershed management plan (IWMP) has been much slower and there is still a need to recruit a watershed management team, with international and national experts to lead this work. Work on the integrated spatial plan (ISP) in various districts within Xaysomboun Province (XSB) is progressing well with an expectation that the ISP will be completed by end of June 2016; this will be a critical input to the IWMP. Although a contract has been issued for a further biodiversity surveys and a biodiversity plan for the watershed no further surveys have been conducted since December 2015, since the survey teams have concentrated all their efforts on the potential offset site in Nam Mouane. NNP1PC has pre-funded some key watershed activities identified by the provincial PONREs; these activities will also feed into the IWMP but it is critical that one fully integrated and agreed watershed management plan (integrating data from the ISP, biodiversity information, fisheries management plan and watershed management activities) is developed to guide future funding from both NNP1PC and the provinces.

While some good progress has been made over the last few months, delivery of both the biodiversity offset and watershed management plan are behind schedule. ADB has already revised dates for agreement on a biodiversity offset site and watershed management plan and does not want to change these deadlines again. Time lines to meet ADB deadlines are now extremely tight and NNP1PC needs to recruit necessary expertise urgently and to use fully expertise available within the BAC and the Developer to deliver these components. NNP1PC also needs to give full consideration on how to mobilize and leverage additional resources needed to ensure effective management at the biodiversity offset site and within the watershed, including provision of additional technical expertise as needed.

**Issue: Selection of biodiversity offset:** ADB safeguards require the project proponents to avoid loss of critical habitats and to mitigate the impacts of the development both pre- and post-construction of the dam. *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.*

As stated in earlier reports the footprint of the project is MUCH greater than the area of habitat cleared and flooded (7600 hectares of habitat lost according to the ERM report). Activities associated with the dam – including new roads and reservoir – will give access to additional areas of habitat within the watershed for logging, agricultural expansion and hunting, with likely negative impacts on threatened species populations.

The project needs to identify a credible high biodiversity value offset, additional to watershed mitigation activities. A realistic biodiversity offset needs to be of high biodiversity value, ecologically viable, manageable, and cost effective with potential for a sustained biodiversity outcome. The site needs to be safe from other potential development and exploitation plans and have strong commitment from the Government of Lao PDR (GoL), PONRE, and communities. It is also important that the site is of sufficiently high biodiversity value to be likely to leverage other financial and technical support, including necessary NGO technicians to assist government agencies in planning, management, and monitoring.

It was agreed in December, based on information from additional biodiversity surveys, that neither the NNP1 watershed nor three other sites proposed by the two project provinces outside the watershed (Phou Sod and Phou He in XSB, and Phou Sithone extension in BKX) were suitable for the biodiversity offset. Instead BKX proposed a new potential site in Nam Mouane, 77,900 ha of forests on the Vietnam border, adjacent to the Pu Mat reserve in Vietnam. This area appears to have high potential as an offset site. Accordingly a local team was recruited to undertake preliminary field surveys in the area, including camera trapping, to a) verify the biodiversity value of the area and b) assess accessibility for provision of technical assistance for protection and management of the area.

### **Surveys of Nam Mouane as Proposed Offset Site**

A first survey was conducted in March/April 2016, during the dry season with a follow up session of field work with 96 camera traps in May 2016. Preliminary results from that survey (Chanthavy et al., 2016) were presented to the mission, along with findings from a parallel field trip organized and undertaken by the BAC in April 2016 (Boonratana et al., 2016). The IAP mission also had the opportunity to visit the proposed site in May 2016. Nam Mouane seems a very promising site for a biodiversity offset, given the extent of remaining forest, current information on wildlife and hunting levels, relatively low human impact and swidden activity compared to many other areas in Lao PDR as well as strong local and provincial government political support for the area as a biodiversity offset. The area is likely to be viable long-term as part of a much larger block of forest, with large tracts inaccessible because of the terrain. The area lies adjacent to the Pu Mat reserve in Vietnam which is recognized as an important biodiversity area with populations of Annamite endemics. Subject to confirmation that there are no conflicting developments or exploitation planned for the area, the Nam Mouane area should be considered the first priority site for a biodiversity offset site.

Choosing a realistic biodiversity offset site is now critical and needs to be resolved as soon as possible. ADB has requested that the originally planned second component of the evaluation survey commence as soon as possible, a ground reconnaissance using international expertise, to confirm the area's biological values and to provide additional information on some key faunal groups, especially birds and other species of conservation concern, and best boundaries for the area. It will be critical that this survey is undertaken immediately so that results can feed into the biodiversity offset option paper scheduled for delivery at the end of July.

Earlier proposals to initiate biodiversity assessments at other potentially suitable sites outside BKX, e.g., Khoun Xe Nong Ma, Xe Sap, should be put on hold pending a final decision on Nam Mouane. The final report for a suitable site should make appropriate recommendations on additional baseline surveys, institutional arrangements, technical assistance and budget needs to feed into a biodiversity offset management plan.

### **Recommendations**

- Finalise and share the Chanthavy team biodiversity survey reports from Nam Mouane by end of June 2016.
- Initiate the ground reconnaissance biodiversity survey in Nam Mouane in June 2016 with international expertise and a focus on providing additional information on threatened faunal species and areas of key habitat, and recommending any boundary revisions, if appropriate. This additional information should help inform the biodiversity offset option paper due end of July 2016.
- Nam Mouane should be accepted as the priority biodiversity offset site, subject to confirmation of no conflicting development plans.
- If ADB is still interested in supporting biodiversity assessments of a second and additional high biodiversity site outside the province, this should be treated as a separate initiative and not delay a decision on Nam Mouane.
- Since ADB does not wish to further amend timelines for conditions in the FA, a decision on Nam Mouane should be made by end July 2016 so that the Developer and province can move ahead with designation of the area. This would require early input of information derived from the supplemental survey.

**Issue: Conservation Values of Nam Mouane:** The proposed Nam Mouane site in BKX covers 77,900 ha of forest on the Lao/Vietnam border. The site is part of a large contiguous block of forest link to other protection forests and protected areas within Laos and Vietnam. It lies directly adjacent to the Pu Mat reserve in Vietnam and could become part of an important transboundary area. Pu Mat is regarded as one of the most important biodiversity areas in Vietnam, has a core area of 89,517 ha plus buffer areas of 87,000 ha, with more than 2,460 plant species recorded as well as several Indochina endemic mammals, including populations of northern white-cheeked gibbons, red-shanked douc langurs, saola, large-antlered muntjac and the Annamite striped rabbit. It can be expected that several of these species could also occur in Nam Mouane.

The proposed Nam Mouane area (77,900 ha) is part of a much larger block of connected forest, buffered by protection forests. The area covers an altitudinal range of forest habitats from 300-1800 m.a.s.l including wet evergreen, mixed deciduous, and coniferous forests. Parts of the area has been selectively logged but logging has now ceased; substantial areas especially in lowland areas are under swidden agriculture close to the villages along the boundary roads.

Preliminary biological surveys suggest that the area includes at least 22 (IUCN) Red List (threatened) species including several Indochina and Annamite endemics such as the northern white-cheeked gibbon, red Douc langur, Phayre's langur, among others. The IAP mission during limited field visits had sightings of key species such as macaques, black giant squirrel, and great hornbills, and found signs of sambar, muntjac, and grey peacock pheasant. These signs and presence of leeches and animal signs near the mineral springs suggest limited hunting in the area. The area proposed would provide a valuable addition to the Lao protected area system and enhance ecological representation within the system. NNP1PC should secure the latest satellite imagery of the area to assess forest types and swidden coverage. If possible the supplementary survey should also look at the possibility to extend the proposed boundaries to include more ever-wet forest, especially in the Nam Pan protection forests southeast of the proposed area.

Several factors increase the conservation potential of the area. Political support is key to the success of any protected areas; currently there seems to be very strong political support for the area as an offset site from both PONRE and the Vice-Governor of BKX. Human settlement in the area is limited reported with about nine villages in and adjacent to the area and six of these villages (approximately 50 households each) lie along the boundary roads – see map below. The footprint of these villages through swidden agriculture is quite extensive and should be mapped as a baseline against which further vegetation cover could be monitored. Field visits during 2016 have been supported by strong engagement and support from key stakeholders, military, villagers and police. As a security area, the proposed site has comparatively limited threats and limited and difficult access for hunting. Nevertheless, there is some evidence of fishing camps and hunting of wildlife. The area is probably one of the best forest areas available in BKX for an offset site.

### **Recommendations**

- Clarify with provincial and national agencies that there are no conflicting development plans for the site e.g. dams, logging, mineral exploitation.
- Secure latest remote sensing imagery for the Nam Mouane area to map forest and swidden coverage to determine extent of different forest type cover and to use as a baseline for future monitoring. Engagement of highly qualified habitat analyst with understanding of habitat types of conservation significance will be required, within a tight timeframe.
- Biodiversity baseline should include mapping of vegetation types, defined boundaries, trails and access routes, salt licks, etc., to define ley areas for protection and management.
- Once the site is officially recognized as the offset, work with communities to map their areas of use for agriculture, collection of non-timber forest products, e.g., rattan, and other activities. This information should be used to zone the area as part of management planning.

**Issue: Offset Options Paper:** The offset option paper will be prepared by ADB by end of July 2016. The IAP recommends that the paper should give a brief summary of assessment efforts to date in watershed, other sites proposed by XSB and BKX and reasons for their rejection, e.g., small size, conflict with other development plans. Based on information to date the IAP recommends that **Nam Mouane should be considered as the top priority site** and that additional surveys (supplemental and baseline) should be conducted to better identify core areas, refinement of boundaries, threats (real and potential) and access points and ways to address these.

ADB has advocated considering supplementary offset sites outside the province as a fallback if Nam Mouane was not suitable. Given the positive feedback from Nam Mouane, any further consideration should focus only on a second site as additional to Nam Mouane, i.e., Nam Mouane plus a second site in another province. Accordingly, NNP1PC sent a team with the BAC to review Khoun Xe Nong Ma (KXNM) in Khammouane Province, an existing protected area proposed by ADB's biodiversity consultant Dr. Robichaud.

KXNM is already designated as a national protected area of 680 sq.km. (68,000 ha). The area is more accessible and probably more difficult to manage than Nam Mouane, with a road transecting the middle of the reserve to the Lao-Vietnam border. There are 18 settlements within and adjacent to the reserve and substantial areas under shifting cultivation so that most forest areas visible from the road are fragmented and degraded with good forest visible only on karst outcrops. While there may be good habitat remaining along the Vietnam border the area appears more difficult to protect and manage than Nam Mouane with large areas of associated shifting cultivation sites, high degree of edge effects (both along much of its boundaries and from within the PPA), comparatively easier accessibility and some evidence

of illegal logging and other ongoing and potential impacts and threats (especially from influential individuals). Many of these challenges are common to other protected areas in Laos and would require strong conservation action. Fortunately, KXNM will already receive support and funding through the KfW Integrated Conservation of Biodiversity and Forest (ICBF) project. Given the limited financial resources available for a biodiversity offset the IAP recommends that NNP1PC focus solely on Nam Mouane, which appears to have less threats and be more manageable, rather than spread resources across two sites.

A key issue for Nam Mouane will be designation and institutional arrangements. No legislation for biodiversity offset areas exists under Lao law so consideration needs to be given to how best to protect the area, and who will have management jurisdiction; ultimately it would be desirable to have the area declared a national protected area (NPA). NNP1PC the province should partner with other PA management expertise in Lao PDR and work together to develop appropriate management measures and next steps for adequate protection, including the process to designate the area eventually as a NPA. Such measures need to ensure that there are adequate resources (human and financial) to ensure effective management and conservation. Development of the management structures would benefit from lessons-learned from similar projects, such as Nam Theun 2.

A third option for an offset, originally proposed through the IAP, would be to direct all offset funds through the EPF, with strong criteria for appropriate proposals to support conservation efforts in high biodiversity areas and especially protected areas. Both the company and the province prefer direct support to a dedicated offset site within the project provinces. However, ADB clarified that the funds committed through the CA should be utilized towards biodiversity offset activities, perhaps through supporting additional TA support to Nam Mouane.

### **Recommendations**

- NNP1PC and PONRE need to discuss with national agencies the appropriate protection status for the Nam Mouane site, whether this is eventually to become an NPA or require new legislation to be developed for an offset site.
- NNP1PC, since it has no in-house expertise in PA management, needs to reach out to others in Lao PDR with experience and lessons-learned in these matters.
- Further discussion and thought needs to be given to finding supplementary funding for the biodiversity offset, including fund flows to support government activities and necessary technical assistance.

**Issue: Watershed Management Plan:** To date progress with the watershed management plan is disappointing. An outline of the issues and potential solutions has been developed through workshop consensus between government stakeholders and NNP1PC, but there is still much work to do to prepare an IWMP integrating baseline information, and identifying the main watershed management issues and practical management measures with appropriate budgets.

Unfortunately, neither the international nor national consultants for the watershed management plan have been recruited; these positions should be filled as soon as possible but in the meantime ADB is recommending that Peter Jensen should take a lead with the watershed team to ensure that work continues to prepare a draft IWMP by the end of July 2016. Once in place the international consultant could then help to review this draft to ensure quality control while the national consultant would be responsible for liaison with the government.

The IWMP needs to reconcile the aims of different stakeholders including the Company (protection of the watershed to protect water quality in the reservoir), the provinces and the communities. The final draft is due by end of September 2016 and should prioritise activities

and funding from both the provinces and the Company. The approved plan is due by the end of October 2016 to meet ADB deadlines. The IWMP should prioritise activities and funding from both the provinces and the Company. No further funds for additional early watershed management activities should be released until the IWMP is in place.

To date planning for watershed activities has been done through a series of unconnected contracts for sub-plans, e.g., biodiversity and fisheries. It is essential that these different plans are combined into one integrated watershed management plan. There are several important inputs to the watershed management planning process.

**Integrated Spatial Planning:** The ISP for XSB province, including the watershed, is being prepared through collaboration between XSB and the Department of Environmental Quality Promotion (DEQP) of the Ministry of Natural Resources and Environment (MONRE) with resources from NNP1PC. The ISP work has been completed within several watershed districts and the final plan is expected by end of June.

**Watershed management capacity and village planning:** WRPO and other GoL staff received training in village land use planning and watershed boundary demarcation. The provinces have already begun some village planning in four villages in XSB and three in BKX with initial early watershed management funds released by the Company. The NNP1 sub-watershed boundary demarcation is underway, involving discussions with relevant district agencies, village meetings to discuss the objectives and process, boundary survey and marking with village representatives, and formalisation of the boundary line through survey documentation.

**Biodiversity in the watershed:** Although the 2015 Biodiversity Assessment survey dismissed the watershed as potential offset site, surveys there did identify some priority areas of biodiversity value for certain rare and endangered species, including populations of the endemic Lao newt, Owston's civet and the northern white-cheeked gibbon. Identified priority areas for species conservation within the watershed include Phou Samsao and Phou Katta and surroundings. Appropriate management measures for these species, should be integrated into the management plan, including land use plans, forest protection and species action plans. Further biodiversity surveys were planned in the watershed in 2016 but have not yet started as the survey teams have been concentrating on Nam Mouane; any additional information on key areas for conservation of species populations should be integrated into the IWMP.

**Houay Soup:** A detailed Natural Resource Management Plan, including the protection forest, has been prepared by consultants but any detailed activities and zoning of the Houay Soup area needs to be done through participatory planning with PAPs at the resettlement site. Any agreed activities within the protection forests should be consistent with retaining forest cover, sustainable utilization and overall watershed objectives.

The WMP should develop practical management actions with appropriate implementation budgets to guide use of both project and provincial funds. The Watershed Management Fund, agreed in the Concession Agreement has an allocation of US\$6.24 million over 27 years, with \$800 thousand already committed to supply offices, vehicles, equipment and operational expenses to the provinces. The remaining sum is probably insufficient to cover all desired watershed management activities and NNP1PC-supported priorities should focus on essential mitigation activities targeted to the lower Nam Ngiep watershed (the project area), e.g., forest restoration, habitat protection and sedimentation control.

Any further decisions on NNP1PC-provided budgets and equipment should be linked to the final approved watershed management plan with activities prioritized against PONRE capacities, clear objectives and verifiable indicators to be monitored by NNP1PC. It will also

be important to determine where additional funds for watershed management and livelihoods can be identified from non-project sources, including provincial budgets.

### **Recommendations**

- Urgently recruit the international watershed management team leader and national consultant. In the meantime, NNP1PC should prioritize preparation of the draft management plan under the leadership of Peter Jensen and the EMO (by 31 July 2016). A final draft should be prepared by end of September 2016, with final approval by end of October 2016, to meet ADB deadlines.
- Preparation should focus on analysis of existing baseline information (ISP, village planning, initial biodiversity surveys, and fisheries management plan) to analyse data and integrate into one comprehensive management action plan, with agreed prioritized activities, roles and responsibilities including monitoring, and appropriate budgets.
- Initiate as soon as possible further biodiversity surveys within the watershed as additional input to the IWMP to ensure identification and protection of remaining biodiversity values within the watershed through spatial planning and forest protection. Focus should be on defining core protected zones, and if possible, should be re-engage for the surveys the same consultants who did the last round of Vaseline surveys. If these cannot be completed prior to submission of the IWMP baselines surveys should be conducted as an early activity under implementation of the IWMP.
- Identify opportunities for funding of appropriate activities for conservation of remaining populations of rare and endangered species within the watershed from the Watershed Management Fund and/or the Environment Protection Fund for XSB.

### **Issue: Budgets available for biodiversity offset**

According to budget tables in the Concession Agreement there is US\$3.7 million potentially available for biodiversity activities; this is a very modest amount to establish and manage a realistic biodiversity offset over the lifetime of the project. Experience in Lao PDR suggests that successful conservation efforts require partnerships between government agencies and conservation NGOs, including both national and international technical assistance. NNP1PC needs to think seriously about how additional resources can be mobilized or leveraged to support the designated offset site.

The CA allocates a designated payment to the EPF of \$990,000; \$180,000 has already been released to EPF for disbursement against projects in 2015. The remaining contribution of \$880,000 from NNP1PC to EPF should be earmarked to support technical assistance and projects in the biodiversity offset site and/or biodiversity priority sites within the XSB watershed.

Even a total of US\$4.5 million (including the remaining EPF funds) will be insufficient to provide the necessary support through government and technical assistance to a credible offset site over 27 years. ADB has proposed some creative solutions for supplementary funding from both NNP1PC and ADB towards activities in the biodiversity offset area for the first ten years to provide approximately US\$700 thousand per year for operations and another US\$300 thousand for technical assistance per year.

The IAP has always maintained that the offset component was under-resourced in the CA so welcomes any attempt to raise additional funds. Early preparation of a detailed site management plan, including a monitoring plan, will provide more detail on priority activities and funding needs. The additional funding should be regarded as essential to ensure the sustainability of a credible biodiversity offset and a measure of the environmental commitment of NNP1PC. Given expected revenues from the project and the very small additional increase in overall budget, the IAP recommends that NNP1PC commit to an additional financial commitment to the biodiversity offset but also consider more long-term financial arrangements

in line with international good practice to sustain protection and management of the offset area over the full 27 years of the CA.

### ***Recommendations***

- Review conservation needs and priority actions as proposed in final accepted offset report and consider how and when NNP1PC will allocate additional resources as a sign of goodwill and good practice both in the short term (10 years) and for the full term of the CA.
- On advice of ADB, follow up with the EPF to limit NNP1PC contributions to the EPF for conservation projects in the biodiversity offset area and biodiversity priority areas within the NNP1 watershed.
- Discuss with World Bank and other donors the potential for additional funding for associated conservation initiatives to reduce pressures in Nam Mouane; e.g., the World Bank supported Lao Environment and Social Project (LENS) project.
- Work with conservation NGOS (national and international) to leverage other financial (and technical) support.

**Issue: Biodiversity Advisory Committee:** NNP1PC established a three-person Biodiversity Advisory Committee (BAC) in July 2015, comprising international and national experts with good understanding and knowledge of biodiversity and conservation in Lao PDR: Dr Ramesh Boonaratana, Dr Pheng Phengsintham, and Dr Rob Timmins. The BAC is currently functioning with two members against the provision of three. ADB proposed inclusion of Dr. Will Duckworth and IAP endorses it. Supplementary and detailed field surveys of the proposed biodiversity offset site at Nam Mouane will be undertaken beginning in July 2016. TORs for this survey will be issued by mid-June. Since its inception the BAC has been working well with the NNP1PC biodiversity team, providing advice and conducting preliminary surveys in Nam Mouane (Boonratana 2016) and at KXNM (May 2016). Nevertheless, the IAP considers it important that another member is appointed to the BAC to ensure a minimum of three members. During the mission it was agreed that Dr Will Duckworth would be invited to join the BAC because of his biodiversity qualifications and expertise and knowledge of Laos. It was also agreed that all relevant documents, including preliminary survey results, will be shared by the EMO Biodiversity team with the ADB, BAC and IAP.

### ***Recommendations***

- As agreed during the May mission, recruit Dr Will Duckworth as a third member of the BAC as soon as possible.
- Share all relevant biodiversity reports and information between NNP1PC, BAC, ADB and IAP so that decisions can be made speedily and efficiently on biodiversity issues, including final choice of the biodiversity site.



