

**Report Number 8  
of the Independent Advisory Panel  
on the Nam Ngiep 1 Hydropower Project  
Lao PDR  
Eighth Site Visit, 11-18 December 2016**

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**Revised: 20 February 2017**

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## List of acronyms and abbreviations

ADB	Asian Development Bank	NAFRI	National Agriculture and Forestry Research Institute
AIP	Annual implementation plan	NBCA	National biodiversity conservation area / conservation forest
BAC	Biodiversity Offset Advisory Committee	NC-NX	Nam Chouane-Nam Xang biodiversity offset area (formerly referred to as Nam Mouane)
BKX	Bolikhamxay Province	NNP1	Nam Ngiep 1 hydropower project
BOMP	Biodiversity Offset Management Plan	NNP2	Nam Ngiep 2 hydropower project
BRP	Biomass removal plan	NNP1PC	Nam Ngiep 1 Power Company
CA	Concession agreement	NPA	National protected area
COD	Commercial operating date	NRM	Natural resources management
DCC	District coordinating committee	NTFPs	Non-timber forest products
DEQP	Department of Environmental Quality Promotion	PAP	Project affected people
DFO	District forestry office	PFA	National protection forest area
DFRM	Department of Forest Resources Management	PMO/PO	Prime Minister's Office
DG	Director-general	PONRE	Provincial office of natural resources and environment
DoLA	Department of Land Administration	PPA	Provincial protected area
DONRE	District office of natural resources and environment	PRMLCRC	Provincial Resettlement Management and Living Condition Restoration Committee
E&S	Environment and social	REMDP/REDP	Resettlement and Ethnic Minority Development Plan
EGATi	Electric Generating Authority of Thailand International Company	RMU	Resettlement Management Unit
EHS	Environmental health and safety	ROW	Right-of-way
EIA	Environmental impacts assessment	SEA	Strategic environmental assessment
EMP	Environmental management plan	SMO	Social Management Office
ESMMP-CP	Environmental and social management and monitoring plan-construction period	SPS	Safeguard Policy Statement
EMO	Environmental Management Office	TD	Technical Division
EMU	Environmental Management Unit	UR	Upper reservoir
EPF	Environmental Protection Fund	US\$	United States dollar
ERM	Environmental Resources Management (consulting company)	WCS	Wildlife Conservation Society
ESD	Environment and Social Division	WMO	Watershed Management Office
ESIA	Environmental and social impacts assessment	WMP	Watershed management plan
FCZ	Fish conservation zone	WWTP	Waste water treatment plant
GOL	Government of Lao PDR	XSB	Xaysomboun Province
ha	Hectare		
hh	household		
HSRA	Houay Soup Resettlement Area		
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		
IUCN	International Union for the Conservation of Nature		
IWMP	Integrated watershed management plan		
LR	Lower reservoir		
LTA	Lenders' technical advisor		
MAF	Ministry of Agriculture and Forestry		
m.a.s.l.	meters above sea level		
MEM	Ministry of Energy and Mines		
MONRE	Ministry of Natural Resources and Environment		
MRC	Mekong River Commission		

# Report Number 8 of the Independent Advisory Panel on the Nam Ngiep 1 Hydropower Project Lao PDR

## Eighth Site Visit, 11-18 December 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) and other monitoring, supervisory, and advisory bodies again during the IAP's site visit in December 2016. The ADB representatives consisted of the following specialists: Mr. Samarendra Singh, Ms. Joyce Munsayac, Mr. Vijay Joshi, Mr. Vergel Medina, and ADB consultants [Ms. Elizabeth Mann](#), [Mr. William Robichaud](#), [Mr. Rob Timmins](#), and [Mr. Anik Ajmera](#). The LTA specialists Mr. Giuseppe Stevanella, Mr. Ettore Romagnoli, and Mr. Raoul Cola also accompanied the IAP during the site visit.
2. The IAP noted several **positive** developments during the site visit:
  - Livelihood demonstrations and development activities are expanding in all zones and projecting a positive image for NNP1PC as well as impacting positively on the PAP.
  - NNP1PC staff continue to provide good follow-up on health, education, and community health and safety throughout the project area.
  - NNP1PC has gained important experience by successfully completing resettlement of the first group of PAP from Hatsaykham to the Houay Soup Resettlement Area (HSRA).
  - The IAP commends NNP1PC on constructing a "best practices" sanitary landfill, leachate collection, and treatment system.
  - The IAP is enthusiastic about the Waste Bank program and encourages NNP1PC to restore funding and expand the concept throughout the project area.
  - The IAP is aware of improved communications and support among NNP1PC departments as evidenced by the completed sanitary landfill facilities and the on-going construction improvements at the sub-contractor wastewater treatment plants.
  - A three-day workshop conducted during the site visit was useful in identifying what biodiversity can be protected in the designated primary Biodiversity Offset site, Nam Chouane-Nam Xang (NC-NX) (previously referred to as the Nam Mouane catchment area), and where activities to protect key species need to focus in the NNP1 sub-catchment. Additional biodiversity surveys have been completed there to assess biodiversity values.
  - There has been continued good progress on key biodiversity issues and with developing the watershed management plan (WMP).
3. The IAP also notes the following **challenges** that NNP1PC is facing:
  - There remain 21 PAP families in Zone 2LR refusing to participate in the asset survey. Officials from the national and provincial government continue to negotiate with PAP to resolve outstanding issues.
  - Hundreds of grievances remain outstanding after being neglected by the RMU and NNP1PC technicians, even after the IAP commented on this matter in May 2016. Unless NNP1PC and the GOL concentrate more resources on resolving PAP grievances and paying compensation, NNP1PC will be non-compliant with the CA.
  - Most critically, previous occupants of land in the HSRA who have not been compensated for land incorporated into the HSRA, have objected to further development until compensation has been paid and long outstanding grievances are resolved.
  - At Zone 2UR, some PAP continue to be confused whether the flood level of the NNP1 reservoir will be at 320 or 321 m.a.s.l.

- There is inadequate monitoring of ongoing biomass removal by the EMO and Biomass Removal Contractor. The compensation issue for villagers who are losing land in the future reservoir has not been resolved and is causing unnecessary and potentially expensive delays for NNP1PC linked to delayed biomass removal activity.
  - Follow up of non-compliances with the contractors on all issues of environmental pollution needs stricter non-compliance and penalty enactments by both the EMO and TD.
  - Environmental monitoring tasks need to be redesigned to meet current issues and it is recommended to revise the 2017 AIP to cover these intensive monitoring tasks and assign staff accordingly.
  - While some good progress has been made over the last few months, delivery of both the biodiversity offset and watershed management plans are behind schedule.
  - The prolonged discussions on biodiversity values is academically interesting but is meaningless in achieving a successful biodiversity offset without effective action on the ground.
  - To meet its safeguards requirements ADB needs to prepare a Biodiversity Offset Options paper to consider whether the primary offset site is sufficient to meet ADB safeguard needs. This paper is being prepared very late in the process and needs to take account of all the agreements and commitments already made with government.
  - Both the Watershed Management Fund and Biodiversity Offset Fund are under-resourced: funding is insufficient to provide the support necessary over 27 years (the project lifetime).
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 an eighth visit to NNP1 on 11-18 December 2016. The IAP members participating in the eighth visit included the following:
  - Mr. Anthony M. Zola, Resettlement Specialist, [Chairman](#)
  - Dr. Songwit Chuamsakul, Indigenous Peoples (IP) Specialist
  - Dr. Richard Frankel, Environment Specialist
  - Dr. Kathy MacKinnon, Biodiversity Specialist
7. The IAP and Nam Ngiep 1 Power Company (NNP1PC) (the Developer; [the Project](#)) agreed that the eighth IAP site visit would be on **4-10 June 2017**. This period will be immediately following the expected resettlement of PAP from 2LR in late May 2017.
8. This IAP report to NNP1PC and the ADB covers the following topics: (i) issues of concern to the IAP; and, (ii) IAP recommendations for actions to NNP1PC based on the Concession Agreement, official / legal documents of the Government of Lao PDR (GOL), [ADB Safeguard policies](#), the Equator Principles, and international best practices. Actions recommended by the IAP are time-based; meaning that NNP1PC is either legally obligated to or should undertake and/or complete these actions within a specific period.

9. The IAP categories of concern are as follows:
- **High / Very High / Urgent** category of concern: Developer should act **immediately**;
  - **Medium** category of concern: Developer should act within **1-2 months**; and,
  - **Low** category of concern: action should be taken **before the next IAP visit**.

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:
- Mr. Yoshihiro Yamabayashi, Managing Director, NNP1PC
  - Mr. Samarendra Singh, Asian Development Bank, Private Sector Operations
11. The eighth IAP site visit was undertaken over a seven-day period; from Sunday, 11 December, to Saturday, 17 December 2016. The IAP travel schedule was as follows:
- **Saturday, 10 December**
    - Arrival in Vientiane: Dr. Songwit, Dr. Frankel. Overnight in Vientiane
  - **Sunday, 11 December**
    - Arrival in Vientiane: Mr. Zola, Dr. MacKinnon
    - IAP initiating meeting at Hotel Khamvongsa
    - Overnight in Vientiane
  - **Monday, 12 December**
    - Briefing by NNP1PC managers and staff at the Nam Ngiep 1 Hydropower Project office in Vientiane on (i) measures taken related to actions recommended by the IAP during the seventh IAP site visit in May 2016; and, (ii) overall progress on NNP1 project implementation and issues of concern.
    - The IAP resettlement and IP specialists and ADB and LTA 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; overnight in Paksan
    - Biodiversity Specialist: Briefing at NNP1C on Progress with Biodiversity Offset and Watershed Management Plan
  - **Tuesday, 13 December**
    - The IAP resettlement and IP specialists and ADB and LTA representatives met with the district vice governor and other officials of the Hom District Coordinating Committee (DCC) and PAP representatives from Zone 2LR; to discuss 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, Extension of Quarry, Sanitary Landfill (Waste Disposal site), Re-regulation dam and power house area. Overnight at Owner's Base camp.
    - Biodiversity Specialist: Biodiversity Offset Workshop internal meeting with NNP1C, ADB, IAP, international experts, Vientiane
  - **Wednesday, 14 December**
    - The IAP IP specialist and an ADB representative met with PAP in Ban Thaheua in Zone 5; to review the progress of livelihood development projects supported by NNP1PC.
    - Simultaneously, the IAP resettlement specialist and ADB representatives met with the chairman of the Bolikhan District Grievance Committee and NNP1PC grievance officers at Ban Thaheua; to discuss constraints to the timely review and resolution of the excessive number of outstanding PAP grievances.
    - The IAP resettlement and IP specialists and ADB representatives met with PAP representatives from Ban Hat Gniun in Zone 5; to discuss outstanding compensation and grievance issues; and, the need for access to land in HSRA by PAP from Ban Hat Gniun.
    - The IAP resettlement and IP specialists and ADB and LTA representatives visited the Houay Soup Resettlement Area and had brief meetings with resettled PAP. 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 Houay Soup solid waste landfill area. Environmental Inspection, Monitoring, and Waste Management review by EMO Team Leader. Overnight at Owner's Base camp.
- Biodiversity Specialist: Biodiversity Offset Workshop internal meeting with NNP1C, ADB, IAP, international experts, Vientiane
- **Thursday, 15 December**
  - The IAP resettlement and IP specialists and ADB and LTA representatives traveled to Thathom District, Xaysomboun Province, for consultations with district officials and PAP representatives from three impacted villages in Zone 2UR; and, to visit the NNP1PC field office and PAP livelihood development projects.
  - Travel to Paksan; overnight at Paksan.
  - Environmental Specialist together with EMO representative, Compliance & Team Leader Khamphone re-visited Song Da 5 Camp 1, met with OB Environmental Manager Santi, and reviewed proposed chlorine feed system using dry powder calcium hypochlorite. Discussed problematic chlorine control system and outstanding issues to achieve a chlorine residual in the wastewater effluent of < 1 mg/L. Visited Solid Waste Recycle Bank at Had Gniun school where waste recycle program is run, and discussed program with village representative. Visited new environmental lab under construction and witnessed training program by UAE, Thailand, of EMO Lab staff, and reps from both EMUs. Returned to Owner's Base Camp, departed for Paksan, and travelled back to Vientiane. Overnight at Khampiane Hotel.
  - Biodiversity Specialist: Biodiversity Offset Workshop with Government
- **Friday, 16 December**
  - The IAP resettlement and IP specialists and ADB and LTA representatives met the District Governor of Bolikhan District, Bolikhamxay Province to discuss outstanding PAP compensation and grievance issues; and, challenges related to resettlement of PAP from Zone 2LR.
  - The IAP resettlement and IP specialists and ADB and LTA representatives met the Chairman of the RMU of Xaysomboun Province to discuss outstanding PAP compensation and grievance issues; and, the self-resettlement of PAP from Zone 2LR.
  - The IAP resettlement and IP specialists and ADB and LTA representatives met the Chairman of the RMU of Bolikhamxay Province to discuss outstanding PAP compensation and grievance issues; and, challenges related to resettlement of PAP from Zone 2LR.
  - The IAP resettlement and IP specialists and ADB and LTA representatives met with the Manager of the NNP1PC Social Management Office (SMO) and his managers and team leaders to review the findings of the meetings with PAP and GOL officials during the site visit.
  - Travel to Vientiane; overnight at Vientiane.
  - Environment Specialist together with LTA and ADB Environmental Specialists met at NNP1PC to review outstanding environmental issues, including monitoring, capacity building, and funding of villagers to permit biomass removal, and continuation of Waste Recycle Bank. Requested several monitoring reports. Returned to the Khamvongsa Hotel mid-afternoon and began to draft the debriefing presentation for the Environmental Section.
  - Biodiversity Specialist: Meeting with DG- DFRM, Wrap up meetings re Biodiversity Offset
- **Saturday, 17 December**
  - 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.

- Evening: IAP wrap up meeting and discussion of the IAP report no. 8.
- Overnight in Vientiane.
- **Sunday, 18 December**
  - Morning: IAP discussion of resettlement, environmental, and biodiversity issues with a representative of the Biodiversity Advisory Committee (BAC) at the Hotel Khamvongsa.
  - Afternoon and evening: Return travel to home bases.

12. The remainder of this report consists of the following:

- (i) Part 2: a summary of resettlement, indigenous peoples', environmental, and biodiversity issues, including the IAP's level of concern and recommendations; and,
- (ii) Additional comments of the IAP in the form of individual technical annexes as follows:
  - Annex 1: Resettlement issues
  - Annex 2: Indigenous Peoples' 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 11-18 December 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>PAP from Ban Hatsaykham have moved into the HSRA and are planning to cultivate their allocated lands during the 2017 wet season.</p> <p>NNP1PC has begun to revive the demonstration farm (Pilot Plan).</p>	<p>Significant progress continues to be made.</p> <p>IAP will monitor on a routine basis.</p>	Closed
R4	<p>Site visits: 7-14 December 2014 3-10 May 2015 6-13 December 2015 11-18 December 2016</p> <p>Concession Agreement, Annex C, Appendix 3, Table 1-1, b</p>	<p>Many 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> <p>Payment of compensation to PAP in 2LR is significantly delayed.</p>	<ul style="list-style-type: none"> <li>Based on CA, NNP1PC is responsible for: (i) resettling PAP at Houay Soup; or, (ii) paying cash to PAP for self-resettlement based on unit compensation rates</li> <li>Official cut-off-date for the project area is 11 April 2014</li> <li>59 PAP households agree to move to HSRA</li> <li>287 PAP households will self-resettle</li> <li>21 families refuse to register their assets. The GOL is negotiating.</li> <li>For PAP refusing to decide, GoL will require resettlement at HSRA</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 should continue to work with GOL officials to resolve all resettlement issues in zone 2LR.</li> <li>NNP1PC should increase staff assigned to prepare self-resettlement plans in consultation with PAP at all impacted locations.</li> <li>The IAP recommends that NNP1PC work with RMU to accelerate consideration of self-resettlement plans and payment of compensation.</li> <li>Self-resettlers should be offered an opportunity to receive/reject occupational training related to self-resettlement plans.</li> <li>NNP1PC should advise GOL officials about the availability of Community Development Funds to support development at self-resettlement sites following COD.</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 Resettlement Issues

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 11-18 December 2016</p> <p>Concession Agreement, Annex C, Appendix 7</p> <p>Concession Agreement, Annex C, p. C-125, Section 23</p> <p>Law on Resolution of Economic Disputes, No. 44/PO, 25 May 2005, Chapter 3</p>	<p>Need to monitor the quality of resettlement infrastructure at HSRA, specifically housing and water supply</p> <p>Significantly delayed payment of compensation to PAP self-resettlers from Hatsaykham</p> <p>Significantly delayed consideration and approval of self-resettlement plans</p> <p>Significantly delayed resolution of grievances submitted by PAP self-resettlers from Hatsaykham</p>	<ul style="list-style-type: none"> <li>• 21 PAP households from Ban Hatsaykham have moved to HSRA</li> <li>• 22 PAP households have chosen self-resettlement</li> <li>• 16 PAP households remained at Hatsaykham in December 2016</li> <li>• Some PAP from Hatsaykham displayed anger with NNP1PC and the RMU about (i) delayed compensation payments; (ii) delayed resolution of grievances; and, (iii) lack of an effective arbitration process based on Lao legal procedures.</li> <li>• The SMO is deficient in meeting “all of the Company’s social obligations” and maintaining “the SMO with such numbers of management and professional staffs that are suitably qualified and skilled as will enable the Company to meet the objectives set for it in” the CA (Section 23); and, failing to meet the Company’s responsibilities including providing “prompt and fair compensation for all PAPs in accordance with policy and entitlements”.</li> </ul>	<ul style="list-style-type: none"> <li>• The IAP is pleased that the resettlement of Hatsaykham PAP has been executed well by SMO</li> <li>• The IAP was surprised that self-resettlers from Hatsaykham have not been treated with the same level of attention as resettlers, particularly regarding (i) timely payment of compensation; and, (ii) resolution of outstanding grievances.</li> <li>• Delays and lack of adequate attention to compensation and grievance issues are creating unnecessary social tension.</li> </ul> <p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>• The IAP recommends that E&amp;S management immediately focus on resolving outstanding compensation and grievance issues. Not doing so will cause additional social tension and lead to non-compliance with the CA.</li> <li>• The IAP recommends that the quality of resettlement infrastructure at HSRA, specifically housing and water supply should be inspected by NNP1PC before the sub-contractors’ warranties expire.</li> <li>• The IAP recommends that NNP1PC inform 16 self-resettlement PAP that resettlement at HSRA remains an option.</li> <li>• The IAP recommends again 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> </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>• 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 11-18 December 2016	<ul style="list-style-type: none"> <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>Role of NNP1PC in developing replacement agricultural lands for PAP</li> </ul>	<ul style="list-style-type: none"> <li>Detailed demarcation of the full supply level of the reservoir has been completed</li> <li>Livelihood development team at 2UR has been strengthened and livelihood restoration program is progressing</li> <li>During the Final Choice survey, 99.5% of all PAPs in 2UR expressed preference for cash compensation over replacement land. NNP1PC considers the case on replacement land closed after cash compensation payments have been completed.</li> </ul>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>NNP1PC Technical Division should consult with district officials and inform PAP about policies related to claiming and developing islands and drawdown zones in the NNP1 reservoir.</li> </ul>	Low
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 11-18 December 2016	<ul style="list-style-type: none"> <li>Effectiveness of the Xaysomboun RMU</li> <li>Effectiveness of the Hom District Coordinating Committee (DCC)</li> <li>Increased tension between PAP in 2LR and NNP1PC, Xaysomboun RMU, and Hom DCC</li> </ul>	<ul style="list-style-type: none"> <li>Although field activities of the Xaysomboun RMU have improved, 21 PAP households remain unwilling to register assets</li> <li>Consideration of PAP self-resettlement plans is slow</li> <li>Authorization of compensation payments is delayed because of slow processing of self-resettlement plans by RMU</li> <li>Hom DCC is knowledgeable and significantly more effective, with good support from NNP1PC</li> <li>The SMO manager is currently spending 60-80% of his time based in Zone 2LR</li> </ul>	<ul style="list-style-type: none"> <li>Serious tension remains between PAP in 2LR and NNP1PC, Xaysomboun RMU, and Hom DCC</li> <li>Failure to resolve these issues and decrease tension urgently may delay resettlement, impoundment, and COD.</li> </ul> <p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>The IAP recommends that E&amp;S management immediately focus on resolving outstanding compensation and grievance issues. Not doing so will cause additional social tension and lead to non-compliance with the CA; and, may delay COD</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*
R10	<p>Site visits: 15-22 May 2016 11-18 December 2016</p> <p>CA, Annex C, Appendix 7</p> <p>CA, Annex C, p. C-125, Section 23</p> <p>CA, Annex C, Appendix 4, Non-compliance, p. 114</p> <p>CA, Annex C, Appendix 5, Section 4, (vii), p. 116-117; (ix), p. 117</p> <p>CA, Annex C, Appendix 8, p. C-149, para. 1</p> <p>Law on Resolution of Economic Disputes, No. 44/PO, 25 May 2005, Chapter 3</p>	<p>Outstanding grievances from PAP at Ban Hatsaykham (Zone 3)</p> <p>Outstanding grievances from Ban Hat Gniun (Zone 5)</p> <p>Significantly delayed compensation payments and slow resolution of PAP grievances are causing intense tension in Zone 5 and near the HSRA</p> <p>Cutbacks in RMU budgets</p>	<ul style="list-style-type: none"> <li>• Payment of compensation to PAP self-resettlers from Hatsaykham is significantly delayed</li> <li>• Resolution of grievances submitted by PAP self-resettlers from Hatsaykham is significantly delayed</li> <li>• Payment of compensation to Ban Hat Gniun PAP impacted at the HSRA is significantly delayed</li> <li>• Resolution of grievances submitted by PAP from Ban Hat Gniun is significantly delayed</li> <li>• Cutbacks in RMU budgets in XSB and BKX may result in a lower level of willingness of RMUs to process self-resettlement plans; and district grievance committees to consider grievances efficiently</li> </ul>	<ul style="list-style-type: none"> <li>• The IAP understands that NNP1PC is obligated by the CA to arbitrate / negotiate with PAP before formal grievances are filed. NNP1PC may already be in violation of the Law on Resolution of Economic Disputes (2005).</li> <li>• The BKX RMU reports that NNP1PC personnel have not undertaken arbitration at the village level in more than six months; nor have NNP1PC staff followed the GOL's procedure under the arbitration decree.</li> <li>• Only after NNP1PC provides evidence that arbitration has failed should grievances be filed and the formal grievance process be used.</li> </ul> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>• The IAP recommends that NNP1PC-SMO take immediate action to pay overdue compensation and to resolve long outstanding grievances.</li> <li>• The IAP recommends that NNP1PC resolve the land compensation issues immediately, wherein previous compensation payments may need to be reviewed; and, additional payments made to PAP in zones 3 and 5 who have land that has been impacted.</li> <li>• The IAP recommends that NNP1PC management should provide guidance to EMO and SMO management regarding budgets for the RMU, DCC, and the District Grievance committees. Cutting RMU budgets during this critical time, prior to resettlement, impoundment, and COD, may not be warranted.</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 Indigenous Peoples' Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
S1	<p>Site visits:</p> <p>7-12 January 2013</p> <p>17-24 November 2013</p> <p>4-11 May 2014</p> <p>7-14 December 2014</p> <p>3-10 May 2015</p> <p>6-13 December 2015</p> <p>15-22 May 2016</p> <p>11-18 December 2016</p>	<ul style="list-style-type: none"> <li>Livelihood Programs</li> <li>Agricultural products and markets</li> </ul>	<ul style="list-style-type: none"> <li>The livelihood program supports important activities for PAP. In Zone 5, Ban Thaheua, programs have significantly improved the quality of life of PAP. Their lives are much better than in the past. They earn more money from programs and better manage and adjust to the modern economy.</li> <li>In Zone 2UR, PAP of Ban Pou requested Project support for the village as follows: village water supply tanks; village meeting hall; 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> <li>As per REDP-U2UR, during 2017, the 2UR programme is scheduled to scale-up the pilot programmes (65 pilot farmers involved during 2016) to involvement of 161 households.</li> </ul>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>The IAP recommends that the livelihood programs be supported strongly, specifically: improved rice seed and modern planting techniques, fish, duck, pig, and chicken raising, 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 appreciate the programs. PAP of Zone 2UR also request Project support. The PAP in the 2 zones might exchange information with one another.</li> <li>The livelihood programs are not only about building good image and reputation for the Project, but also a compliance requirement under ADB's policies and CA commitments. The Project will support livelihood activities for PAP in every zone to achieve policy objectives and CA targets.</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/Very high - immediate action recommended</li> </ul>					

## Summary of Social Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
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 11-18 December 2016	Hmong graves removal and compensation	<ul style="list-style-type: none"> <li>• There remain 9 IP Hmong graves in Ban Namyouak of Zone 2LR where 21 PAP households (24 families) refuse to register their assets with the Project.</li> <li>• 22 IP Hmong graves in Ban Pou, Zone 2UR have requested compensation from the Project and RMU.</li> <li>• According to the elder of Ban Pou, these 22 graves are situated at 321 and 322 m.a.s.l. (full supply level is 320 m.a.s.l.). PAP are worried about potential flooding. The uncertainty of the water level causes PAP to worry about this issue. If they are suddenly flooded, then the PAP cannot remove these graves by themselves immediately.</li> </ul>	<p><b>Recommendations</b></p> <p>The IAP recommends that the Project and RMU take the issue into consideration seriously. For the requested 22 Hmong graves in Ban Pou of Zone 2UR, the IAP recommends that NNP1PC undertake a resurvey/rechecking of the flood water level quickly and make a final decision together with the RMU, Project, and PAP. For 9 Hmong graves in Ban Namyouak of Zone 2LR, NNP1PC should wait until PAP agree to register their assets with the Project. In the Hmong belief, a soul of a dead will inhabit his grave forever. Destruction of the grave means his soul will be destroyed. Then the soul is unhappy and it will return to its family and make the family to get sick and unhappy, as well.</p>	Very high
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 11-18 December 2016	<ul style="list-style-type: none"> <li>• Resettlement to Houay Soup Resettlement Area (HSRA) and self-resettlement</li> </ul>	<ul style="list-style-type: none"> <li>• 24 PAP families from Hatsaykham moved to HSRA after the 2016 wet season on 12 November 2016. PAP say that in general, they are satisfied with HSRA: buildings, land (soil quality), infrastructure.</li> <li>• PAP mentioned for the first time that soil at HSRA is fine and will be better when after use for a few years; it will give better yield because PAP will apply fertilizer every year. Some PAP expanded houses since they have more family members.</li> </ul>	<p>The GOL is taking a leading role and making decision with support from NNP1PC to resolve the issues.</p> <p><b>Recommendation</b></p> <p>The IAP recommends that compensation be paid to 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 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.</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>					

## Summary of Social Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
S4	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016 11-18 December 2016	Food security is still the most important issue for IP Hmong at all sites. Rice is the most important staple food for the Hmong people.	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 again 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 11-18 December 2016	Dust in the villages	The PAP of Zone 5 (Ban Hat Gniun) complained about the dust along the road in the village and requested the Project to water it.	<b>Recommendation</b> The IAP recommends that the Project apply water to the roads around Ban Hat Gniun regularly, particularly in the dry season. Eventually, the Project may wish to consider paving the roads around this growing village.	High
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 11-18 December 2016	Drug abuse, prostitution, crimes, etc. are occurring at an increasing rate in Zone 3.	PAP from Zones 3 and 5 blocked the road to HSRA during the 8th IAP site visit, temporarily not allowing the IAP to enter HSRA. The IAP could not meet PAP and visit the HSRA as per the itinerary. Drug abuse, prostitution, crime, etc. issues were not discussed because of limited time at HSRA. The IAP observed that some karaoke bars had closed. This is a good sign; drug abuse, prostitution, and other crimes, etc. may be reduced. This indicates good work by the Project and local authorities who regularly monitor and prevent these issues.	<b>Recommendation</b> The IAP recommends that Lao Law be enforced and complied.	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>					

## Summary of Social Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
S7	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016 11-18 December 2016	Compensation and unit compensation rates	<ul style="list-style-type: none"> <li>• Compensation:               <ol style="list-style-type: none"> <li>(1) 11 PAP households choosing self-resettlement to Ban Nonsomboon report having received compensation for only 50% of their assets from the Project.</li> <li>(2) In Zone 2LR and 2UR, PAP report receiving only IP grave compensation payments.</li> <li>(3) Several PAP of Ban Hat Gniun, Zone 5 have requested compensation for their land used in HSRA.</li> <li>(4) PAP at Ban Hat Gniun asked why the GOL allowed only IP Hmong to resettle in HSRA. They have lost their land used in HSRA and now they do not have any land.</li> </ol> </li> <li>• <a href="#">NNP1PC reports that it strictly follows the compensation process step by step in full compliance with legal and contractual requirements</a></li> </ul>	<b>Recommendations:</b> <ul style="list-style-type: none"> <li>• <a href="#">NNP1PC should clarify all eligible assets and justify to PAP the reasons for delaying compensation payments.</a></li> <li>• <a href="#">The IAP recommends that asset compensation be paid as soon as possible. The delay of asset compensation payment creates tension, problems, and issues among the PAP, Project, GOL, and others.</a></li> <li>• <a href="#">Firstly, compensation payments should be paid to PAP of Zones 3 and 5.</a></li> <li>• <a href="#">Secondly, compensation payments should be paid to PAP of Zones 2LR and 2UR.</a></li> <li>• <a href="#">Thirdly, self-resettlement plans should be completed urgently for PAP of Zones 2LR and 2UR.</a></li> </ul>	High
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 11-18 December 2016	HSRA and self-resettlement	<ul style="list-style-type: none"> <li>• 24 PAP households of Hatsaykham gradually moved to HSRA after the 2016 wet season (on 12 November 2016).</li> <li>• IAP had limited time to meet PAP in HSRA during the 8<sup>th</sup> IAP visit since roads were blocked by PAP. In general, PAP are satisfied with buildings, infrastructure, and land at HSRA.</li> <li>• Ban Hat Gniun village elders met the IAP regarding PAP who owned land in HSRA, who requested additional compensation. <a href="#">PAP reportedly have land use certificates and land was used after 2012 for shifting cultivation. One elder of Hat Gniun asked why GOL allowed only Hmong to resettle in HSRA. This situation may create future conflict between lowland and Hmong people.</a></li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>• The IAP strongly recommends that the Project complies with Lao Laws and the Concession Agreement.</li> <li>• The Project and the GOL should investigate and consider the facts and compensate PAP at Hat Gniun as soon as possible.</li> </ul>	Very 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/Very high - immediate action recommended</li> </ul>					



No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
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 11-18 December 2016	In Zone 2LR: Currently 21 PAP households (with 24 families) in Ban Namyuak refuse to have their assets registered by the Project.	<ul style="list-style-type: none"> <li>• These 21 IP (with 24 families) households give the same reasons for not cooperating, namely: (1) unit compensation rate is low; (2) GOL does not find any good and proper resettlement site for them; (3) They require the Project to pay cash to them (not open a bank account as is required by the CA).</li> <li>• They have communicated directly with the Central Government.</li> <li>• Another 13 PAP households from Ban Namyuak prefer to join this group. I was informed that the wife of the leader of the 21 hhs is a sister of the headman of Ban Namyuak and she is the chair of the Lao Women's Union group in the village.</li> <li>• The situation has improved. The number of PAP households who had joined the group has been reduced. And the IAP IP specialist's meeting with them was very positive.</li> </ul>	<b>Recommendations</b> <ul style="list-style-type: none"> <li>• The IAP recommends that the GOL and the Project use every effort to avoid any conflict with 21 PAP households (24 families) in Ban Namyuak.</li> <li>• The IAP recommends that all parties should use every possible approach and effort to find a solution together, including, for example: (1) invite high level Hmong/ Lao GOL officials from Central and Provincial governments to visit and discuss with the 21 households often; or, (2) invite the 21 households' relatives from other villages to visit and discuss with them; and/or, (3) ADB should visit them directly. Frequent consultation with highly regarded individuals, local, provincial, and national authorities is needed.</li> <li>• During this site visit, the IAP met the 21 households (24 families) and the IAP could see that they are friendly. They said that they are just like other people and wanted justice, peace, and a better life. The IAP observed that they are humble people.</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/Very high - immediate action recommended</li> </ul>					

## Summary of Social Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
S10	11-18 December 2016	Collaboration with the GOL	According to RMU chairmen, collaboration between the Project and RMU has been difficult over the last six months. There were insufficient meetings between the two sides; usually there is a meeting each month. The RMU objected to financial inflexibility by the Project.	<b>Recommendation</b> The IAP recommends that there should be regular meetings between the RMU and the Project. This includes fostering better communications and being more flexible with the budget.	Very high
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 11-18 December 2016	Asset registration	Detailed demarcation completed		Closed
S13	Site visits: 6-14 Dec. 2015 15-22 May 2016 11-18 December 2016	Community participation	<ul style="list-style-type: none"> <li>PAP participation with Project and GOL has improved. Activities have moved forward, specifically: assets survey and registration, IP graves registration, and 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 good staff to engage PAP to participate in all activities.</li> </ul>	<b>Recommendation</b> 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/Very high - immediate action recommended</li> </ul>					

## Summary of Social Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
S14	11-18 December 2016	Grievance issues	<ul style="list-style-type: none"> <li>There are about 457 grievances covering more than 900 issues, of which only 127 issues have been resolved. Most issues are from Zones 2LR, 3 and 5. The Project uses the Government grievance mechanism to deal with issues. The procedure is slow causing a boycott of a meeting with the IAP in 2LR and road blockage to HSRA during the 8<sup>th</sup> IAP site visit.</li> <li>NNP1PC will recruit additional staff in January 2017 to ensure proper process and allow for careful investigation into each Grievance case</li> </ul>	<b>Recommendation</b> The IAP recommends that the Project and local and provincial authorities take these issues into serious consideration. Additional staff is required to address these issues.	High
S15	11-18 December 2016	Reopened: Cut-off date	<ul style="list-style-type: none"> <li>Although this issue was closed, many PAP of Zones 2LR and 5 (Ban Hat Gniun) refuse unit compensation rates for some assets, saying they were the first groups to sign agreements 2 years ago and at that time asset compensation rates were low. PAP of Ban Sopyouak have not signed asset registration forms, complaining about low unit compensation rates for pineapple, banana, papaya, galangal, and house fences.</li> <li>NNP1PC is finalizing unit rates of items not included in the compensation policy issued by the PRLRC. Once agreed, the PRLRC will issue a declaration on the unit rates.</li> </ul>	<b>Recommendation</b> The IAP recommends that the Project and RMU should investigate and take these issues into serious consideration and finalize the issues together with all parties.	Very high
S16	11-18 December 2016	Reopened: Asset registration	Asset registration remains an issue for Zone 2LR, as follows: (1) the 21 households (24 families) in Ban Namyuoak who refuse to have their assets registered: and (2) another 13 households of Ban Namyuoak who have their assets registered but they have not signed any final asset registration report yet.	See recommendation for S9 above	Very 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/Very high - immediate action recommended</li> </ul>					

## Summary of Social Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
S17	11-18 December 2016	PAP petition	<p>During the 8<sup>th</sup> IAP site visit the IP specialist had three meetings with IP Hmong in four villages in Zone 2LR.</p> <ul style="list-style-type: none"> <li>• PAP complained that the GOL, ADB, and the Project had lied to and cheated them. For example, policy on houses: The cost of new houses built by the Project at HSRA is too expensive, while the compensation for old houses is too low.</li> <li>• Another example is the land price in the old villages is calculated at a low price compared to land outside the project area.</li> <li>• These inconsistencies will cause PAP to become more poor. They cannot afford to buy good land when they move out.</li> <li>• They said that when GOL officials visit them, they are told that they will be forced to move out.</li> </ul>	<p>IAP comments on “policy on houses and land prices” (1) IAP agrees with ADB that NNP1PC should explain to PAP the details of the calculation methodology for housing compensation and justify how it meets CA and ADB requirements; including allowing PAP to bring materials from their old houses to rebuild at HSRA. (2) Unit compensation rates for land are the highest in Laos; but, land prices increase all the time. (3) Regarding displaced persons, PAP cohesion in the same village is disappearing; with the splits of PAP in the same clan being scattered to several places resulting in broken families/households, divorces, fighting among people, etc. These issues are occurring among PAP in the Project and cannot be measured in money or material terms. Particularly, IP Hmong are the most traditional and uneducated people in the Project, and they also are the most affected by the project.</p> <p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>• The IAP recommends that the GOL and Project comply with the Concession Agreement.</li> <li>• The IAP recommends a “policy on houses”: (1) PAP shall participate as a committee member on this issue with the Project and GOL at the beginning stage of the Project. (2) A third party and the IAP should participate in the “policy on houses” with the Project and GOL regarding a methodology for calculating replacement costs for housing.</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/Very 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            11-18 December 2016</p> <p>Policy on Sustainable Hydropower Development, No. 2/ GoL, 12 January 2015</p>	<p>There are four hydropower projects under construction or operating 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 (WMP) started in May 2015 is on-going. The focus of the action plan is to undertake necessary surveys and establish the Watershed Management Office (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 and provincial and district officers, to discuss watershed management issues.</li> <li>The Biodiversity Specialist attended meetings in Vientiane during the period 12-15 December at the Ministry level, Government of Lao PDR, together with ADB representatives, to conclude a fully integrated WMP (integrating data from the ISP, biodiversity information, fisheries management plan and watershed management activities). This topic is subsequently covered by the Biodiversity Specialist in Annex 4: Biodiversity Issues.</li> </ul>	<p>This environmental Issue is now being handled by the Biodiversity Specialist. See Summary of Biodiversity Issues and Annex 4: Biodiversity Issues</p>	

\* Level of Concern:

- Low - action recommended within 6 months
- Medium - action recommended within 1-2 months
- High - immediate action recommended.

## Summary of Environmental Issues

No.	Reference Document	Issue	Status	IAP 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. 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.</li> <li>• The EMU will utilize NNP1PC monthly monitoring data as its database for reporting to DONRE and for writing compliance monitoring reports. EMU confirms that it is receiving NNP1PC monthly monitoring reports (in English and Lao).</li> <li>• Capacity building of the EMU, both Bolikhamxay and Xaysomboun Provinces, is continuing with the building of the new Environmental laboratory at the Owner's Base Camp. EMU personnel from both provinces attended training sessions at the Owner's Base Camp led by trainers from UAE and Thailand. Training included theory and hands-on experience in using laboratory equipment to test water quality parameters of BOD, suspended solids, turbidity, and fecal coliform organisms. Training sessions were planned for a period of one week.</li> </ul>	<p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>• The IAP is satisfied with the efforts the EMO is making to include training for the EMU in compliance monitoring and monthly reporting. This same type of training (capacity building) is being extended to the EMU of Xaysomboun Province. Both EMUs are receiving training in lab testing procedures and field sampling methods to permit them to carry out compliance monitoring whenever environmental sampling and testing equipment is made available to the districts.</li> <li>• This training will enable the District EMUs to develop monitoring reports (both provinces) which can then be sent to NNP1PC and MONRE and include assessments of the adequacy and effectiveness of implemented mitigation measures and the monitoring program being made by the company.</li> <li>• The training program in compliance monitoring for the Xaysomboun EMU should include the Biomass Removal Plan.</li> <li>• The EMO should use joint site inspections of the biomass removal work as part of its capacity building efforts in the 2017 AIP.</li> <li>• It is important for the Bolikhamxay EMU to see improvements being made to the wastewater treatment plants at the various construction camps and to verify that improved treatment systems are producing an effluent that meets Lao effluent standards. This includes the new effort to utilize chlorine disinfectant as a final treatment step to achieve acceptable wastewater effluent quality.</li> <li>• More frequent monitoring of effluents from the WWTPs is needed (once per week) until the EMO is satisfied that the chlorine feed systems are properly controlled and the chlorine residual is within acceptable limits.</li> <li>• The EMU should be included in discussions with communities on management of solid wastes and witness the solid waste landfill at HSRA, Community Waste Recycle Bank at Hat Gniun, and waste feeding program for pig rearing at Hatsaykham village.</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 that meet acceptable environmental management standards). Separation and recycle will save considerable landfill capacity and result in cost savings for the</li> </ul>	Low

				<p>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 2017 should include the training programs to be introduced to the EMUs of both provinces. Training includes joining in monthly joint inspections made by EMO together with Contractor and involvement in discussions of proposed changes by Contractors to correct outstanding environmental issues and non-compliances. The two EMUs can thus witness the compliance and monitoring approach used by the 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>• IAP again recommends that NNP1PC convene a workshop combining the EMUs of both provinces and MONRE to review duties of the EMU for the Nam Ngiep watershed. MONRE should be invited as the workshop organizer to review “lessons learned” from Nam Theun 2 and 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 should be considered 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>					

## Summary of Environmental Issues

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of Concern
E3	<p>Site visits: 7-14 December 2014 3-10 May 2015 6-13 December 2015 15-22 May 2016 11-18 December 2016</p> <p>CA Annex C, Standards: Clauses 18, 33, 34, and 35,</p>	<p>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) 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) is obligated to manage and oversee the environmental, health and safety (EHS) obligations of the CWC and its sub-contractors in accordance with the CA and the ADB Safeguards. The IAP still finds that sub-contractors are carrying out environment activities without adequate supervision of the CWC (Mr. Santi Sayakoummane, Environmental Specialist; Mr. Taguchi Tomohiro, EHS Manager; and Mr. Lester Palarca, Safety Engineer) and environmental issues are not being managed in accordance with international best practices and commitments of the ESMMP-CP.</li> <li>Sub-contractors are selling recyclable wastes to dealers whose facilities have not been checked and verified by the EMO as meeting acceptable environmental protection standards.</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 upgrade and improve wastewater treatment plants. 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) do not meet Lao effluent standards. The GOL thus has the right to impose penalties on the Company for breach of its obligations regarding environmental safety.</li> <li>Hazardous and recyclable wastes from the various work areas are being sold by some sub-contractors to outside private sector recycle companies. These private recycle firms must have their facilities visited and approved by the EMO. Such wastes cannot be sold to the "highest bidder" unless the waste recycling company making such bids has been visited and approved by the EMO as having environmental protection facilities that meet international accepted standards.</li> </ul>	<p>The IAP finds that the CWC is still 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 international "best practices". This means that the Technical Department (TD) must work closely with and support 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 EMO halt sale of recyclable materials by the sub-contractors to outside private sector recycle firms until such firms have been visited by the EMO and their facilities approved as meeting international acceptable environmental standards. Sub-contractors must understand that solid and hazardous wastes can only go to recycle firms approved by the EMO.</li> <li>The TD working with the EMO must resolve construction and operation problems with the wastewater treatment plants (WWTP) of the sub-contractors and the CWC Camp. Design drawings and technical guidelines of the Environmental Engineering Consultant should be clearly followed and implemented. Only the WWTP of the Owner's Camp is properly operating.</li> <li>The revised wastewater treatment plant of Song Da 2 Camp 1 is now constructed</li> </ul>	High



				<p>according to the drawings but needs a chlorine feed system that will ensure operation efficiency and produce an effluent meeting the Lao effluent standards.</p> <ul style="list-style-type: none"> <li>• Song Da 2 Camp 1 facility, once confirmed to be operating in accordance with Lao effluent standards, can be used as a “model waste treatment plant” for other sub-contractors. There are still 8 sub-contractor wastewater treatment plants not constructed per Consultant’s drawings.</li> <li>• The EMO should issue a non-compliance for construction of the wastewater treatment plants and follow up with penalties until the plants are corrected and shown to be working properly.</li> <li>• Installation and operation of a chlorine feed system for the effluent to achieve Lao standards is likewise required. Guidelines, monitoring, training, and supervision by EMO staff will be required to ensure that the chlorine solution is fed at appropriate levels and that a chlorine residual of &lt;1 mg/L is maintained in the effluent. This activity will require 1-2 full days of inputs by both Environmental Compliance and Environment Monitoring teams at each wastewater treatment plant.</li> <li>• EMO needs to increase the frequency of sampling to check on adequacy and operation of the chlorine feed system and record residual chlorine at different times of day. This will require is a full time monitoring team (2 persons) designated to monitor the WWTP effluents (9 locations). The effluents from WWTPs should be sampled frequently until effluents meet with Lao discharge standards.</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	Site visits: 7-14 Dec. 2014, 3-10 May 2015, 6-13 Dec 2015 15-22 May 2016 11-18 Dec 2016  CA, Annex C, Clause 57	Management of wastes from construction sites and camps of sub-contractors is now compliant with guidelines of the ESMMP-CP and the requirements of Annex C of the CA. NNP1 has constructed a proper sanitary landfill and approved a SSES MMP for the Landfill Management Plan. A copy has been submitted to MONRE ( <i>Clause 68 of Annex C to the CA</i> ).	Lao and International standards have now been met with regards to project solid wastes management, handling and disposal. 1) Solid wastes from all construction sites and camps are properly separated to maximize recyclable wastes for reuse or sale to recycle firms; 2) The disposal pits are lined and have a leachate collection system; the leachate treatment is designed to maximize leachate evaporation and observation wells have been constructed to monitor any possible leachate discharge; 3) Waste from sub-contractor septic tanks is collected and disposed consistent with international standards in the spoils disposal area #6. 4) It is understood that CWC is operating the landfill as part of its contract with NNP1PC in lieu of paying a solid waste disposal fee both for CWC and its subcontractors. CWC responsibility includes administering the landfill (compacting and covering disposed solid wastes with soil). The EMO continues to check on disposal wastes from the sub-contractors to ensure that all recyclable materials are being removed and that the sanitary landfill is being operated according to approved Guidelines. 5) The Project landfill issue is now considered closed.	The IAP is satisfied with the construction works of the project landfill and the leachate system. The landfill meets international standards. Likewise, the IAP is satisfied with the disposal method and management of septic tank wastes in the spoils disposal area #6. The EMO needs only to record solid wastes being generated and to verify the disposal process being used by CWC and its sub-contractors. The solid waste landfill issue is now considered closed. Remaining is continuing support and training for villager solid wastes recycle and reuse activities. <b>Recommendations</b> <ul style="list-style-type: none"> <li>The focus of the solid wastes collection and treatment system for the remainder of the construction and operation phases of the project should continue to be maximizing separation and recycle of waste materials. It is far more economic for NNP1PC to continue to invest in a recycle industry (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 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. The Community Waste Recycle Bank should be financially supported by the EMO and SMO until it is shown that the operation can be managed sustainably by the village committee itself.</li> <li>Utilization of project wastes should be expanded to include utilization of all food wastes for raising pigs or worms and making compost. Technical and financial assistance should be provided until operations are sustainable, and then responsibility turned over to the Community Waste Recycle Bank. Recycle activities will promote future livelihood development, save on investment and operation costs at the sanitary landfills, and create a healthier and cleaner environment for communities.</li> <li>The AIP 2017 should focus on expanding the “green technology” approach to manage solid wastes from contractors and from all project impacted communities.</li> <li>The EMO needs to continue its surveillance of the CWC and all sub-contractors to ensure that they follow the Guidelines for hazardous materials and hazardous wastes separation, identification, and storage.</li> <li>The IAP recommends that NNP1PC consider building a hazardous waste storage facility at the sanitary landfill for future hazardous wastes and materials from two power houses and Base Camp. These hazardous materials should be consolidated at one location and managed consistent with international best practices.</li> </ul>	Closed Issue resolved in accordance with the CA
<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
E5	Site visit: 3-10 May 2015 6-13 Dec 2015 15-22 May 2016 11-18 Dec 2016	<p>Cooperation and support from TD to EMO is necessary to implement corrective actions by CWC and sub-contractors on outstanding environmental issues in a timely manner.</p> <p>Compliance Monitoring frequency and parameters to be monitored needs to be re-evaluated in the 2017 AIP.</p>	<p>Visits to construction camps and work sites by the IAP and LTA Environmental Specialists showed improved awareness and attention to environmental issues by some sub-contractors. 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 within an acceptable time frame for implementation.</p> <p>Outstanding environmental issues remain as follows by CWC and its sub-contractors:</p> <ul style="list-style-type: none"> <li>• Constructed wastewater treatment plants do not follow the guidelines recommended by the Consulting Engineer. Treatment efficiency is inadequate and the effluent does not meet standards.</li> <li>• Poorly designed sediment collection ponds have inadequate retention time and do not adequately separate suspended solids from discharge waters. These ponds are full of sediment, showing lack of regular cleaning and maintenance.</li> <li>• Rainwater runoff from surrounding areas is permitted into sediment collection ponds thereby reducing treatment efficiency</li> <li>• Inadequate removal of sediment from sediment laden waters prior to discharge to the Nam Ngiep river has decreased quality of the river water.</li> </ul>	<ul style="list-style-type: none"> <li>• The new Environmental Lab will permit a more comprehensive and relevant ambient monitoring program by the Compliance Monitoring team.</li> <li>• 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 environmental issues. However, this corrective action needs to focus on outstanding environmental issues of sediment control from the construction areas (particularly the gravel preparation and concrete preparation production areas and the quarry) in addition to the long outstanding issue of inadequate and poorly built 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.</li> </ul> <p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>• The IAP strongly endorses the involvement of NNP1PC EMO Environment Managers in field inspections to ensure full cooperation of senior EHS manager support from CWC and its sub-contractors.</li> <li>• Outstanding environmental issues should be monitored more frequently using relevant parameters to verify adequacy of mitigation measures and to document results. This can now be more timely and relevant with completion of the Environmental Laboratory at Owner's Base Camp.</li> <li>• The overall environmental monitoring program needs to be revised and updated in a new 2017 AIP. 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 for both the Contractor and the Owner.</li> <li>• The IAP recommends that compliance monitoring focus specifically on resolving environmental issues being addressed (i.e., separate monitoring program [parameters, frequency, location, time]) for each outstanding issue. The Environmental Monitoring team needs to focus more</li> </ul>	Medium

				<p>intensely on the issue working together with the Environmental Compliance team until a satisfactory result is obtained at the test site. The monitoring program is then updated and considered as a “standard” for that issue. The program is duplicated at a second site with the same environmental issue until that site problem is resolved.</p> <p>Example: for sediment removal problems, this requires the use of a jar test apparatus at the problem site. For chlorine feed systems, this requires the testing of a chlorine residual at site every hour or more frequently until the feed dose and flow rate are controlled at steady rates. Feedback from test results will impact facility design, facility construction, or equipment operation and thus the TD and relevant sub-contractor must be informed what changes should be made to modify the system.</p> <ul style="list-style-type: none"> <li>• The EMO should be issuing more non-compliances at higher levels of urgency and penalizing CWC and its sub-contractors for non-compliance to resolve long outstanding issues in a more timely manner.</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
E6	<p>Site visit: 6-13 Dec 2015 15-22 May 2016 11-18 Dec 2016</p> <p>Biomass Removal Plan (BRP) for Nam Ngiep Power Company, Final, July 2015 (Prepared by Earth Systems)</p> <p>Official approvals of the BRP by ADB and MONRE, Sept. 2015</p>	<p>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.</p> <p>Outstanding is the issue of payment to the villagers for cutting and removal of biomass from lands previously belonging to the villagers. Villagers have expressed their opposition to the biomass removal plan until they are paid by the Company and receive full compensation owed to them.</p>	<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 SSESMMMP contains updated biomass removal maps and plans for using NTFPs.</li> <li>• A government approved UXO clearance team has been employed to clear designated areas of residual explosives prior to any biomass removal. Villagers can collect cut biomass and plant rice on cleared biomass areas prior to inundation.</li> <li>• Villagers and government officials blocked access to the land by the Contractor during the months of November/December thereby causing a significant delay in the implementation plan. Villagers insisted that they receive payment for the land that they will lose when the reservoir is inundated prior to biomass removal. Local government agencies have also expressed their interests to obtain and utilize logs of 20 cm diameter or greater and requested approval by the Contractor (and Project Owner) prior to permitting further work to proceed by the BRP Contractor.</li> <li>• The expected biomass removal progress is thus delayed in the 2016-17 dry season. It is not clear if the lost time can be made up by utilizing mechanized methods to remove cut biomass and have villagers gather cut biomass that they will utilize in the future. The Company has been asked to speed up payments so that work can proceed during the 2017 dry season.</li> </ul>	<p>The IAP is concerned that the biomass removal plan has lost valuable time to achieve its targets given the work stoppage in the last quarter of 2016. NNP1PC must resolve the outstanding local government and villager payment issues urgently so work can continue at an increased pace. The Removal Plan by the selected LAUNC Contractor needs revision and additional supervision by the Manager. EMO monitoring should be increased to ensure timely payment of compensation for land so that biomass clearance can proceed without further delays. 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 should be assisted to store waste timber for future beneficial use at their new resettlement areas.</p> <p><b>Recommendations</b></p> <ul style="list-style-type: none"> <li>• The IAP advises that SMO and EMO staff should discuss and assist each resettlement village (or interested villagers themselves) to make a storage area for safeguarding useful removed biomass for future self or community use.</li> <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 <i>Code of Practice for Biomass Removal</i> (pgs 49-56 of the BRP for NNP1, July 2015). The IAP recommends that the EMO review the <i>Code of Practice</i> 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 <i>Code of Practice</i>.</li> <li>• Compliance monitoring work will require a team of dedicated EMO staff to work within the reservoir area and the AIP 2017 needs to address this activity in detail.</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>• 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
E7	<p>Site visit: 11-18 Dec. 2016</p> <p>SP01 Erosion and Sediment Control, Version 6, March 2014</p>	<p>Sediment retention basins and controls are inadequate for the quarry area, aggregate preparation, and the RCC Plant Operation. Sediment basins are too small, baffles inadequate or missing, and removal of sediment (cleaning of basins) insufficient and infrequent thus causing large sediments loads to be discharged to river. Suspended solids load in discharge waters excessive and significantly exceeds water quality standard of receiving waters.</p>	<p>Contractor and sub-contractors have installed poorly constructed drainage runoff systems and sediment retention basins. Requests by EMO for improvements have been slow in coming and remain inadequate. Monitoring of effluents continues to show non-compliance with Lao water quality standards. Recommendations of LTA continue to be ignored.</p>	<p>This issue was a major environmental non-compliance during the 2016 wet season. The start-up of the main dam RCC Plant Operation (continuous concrete preparation and pouring works) in May 2016 multiplied the amounts of sediment produced by the project works which were further compounded by the onset of the wet season and the large volumes of runoff water that entered the sediment retention basins.</p> <p><b>Recommendations:</b></p> <ul style="list-style-type: none"> <li>The IAP recommends that the TD working with EMO study drainage lines and works in and around the quarry, aggregate and concrete preparation plants during the 2016-17 dry season and prepare a site map showing where new works or improvements are needed to limit and control the volume of runoff entering sediment retention basins. This revised drainage map should be a focal point for Contractors to review and improve and agree upon an action plan.</li> <li>The 2017 AIP currently being prepared needs to be modified to include a comprehensive sediment control system for the work areas supporting the main dam construction. The modified 2017 AIP should likewise be discussed with the Contractor to obtain his cooperation and inputs to complete the needed modifications to the site drainage systems and to the sediment retention basins.</li> <li>The revisions to these facilities should be undertaken by the Contractor prior to the start of the 2017 wet season expected in June 2017.</li> <li>The EMO needs to purchase a "jar test apparatus" for the Environmental Laboratory and to utilize this equipment in the field to monitor at site sediment loads at key sediment retention basin locations to determine which coagulant aids work best and how much (dosage level) is needed to reduce excessive sediment loads to acceptable limits prior to discharge of sediment basin effluents to the river. These coagulant aids are similar to what the Right Tunneling Co., Ltd. utilized in their treatment to remove excessive suspended solids prior to discharge of the effluent to the river. Heavy sediment loads were effectively treated and removed from waters collected during the excavation of the bypass tunnel. A similar use of coagulant aids can be applied without the large investment of treatment tank and sludge dewatering equipment. These chemicals would be utilized during the next wet season (2017) to limit sediment loads to the river. The revised sediment basins and controls would be designed to handle dry weather flows associated with the RCC plant operation.</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>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 14-21 May 2016 11-18 Dec 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	<ul style="list-style-type: none"> <li>Nam Chang-Nam Xang agreed as primary offset site</li> <li>Verify suitability of Nam Chouane-Nam Xang in BKX and/or another suitable site outside project provinces.</li> </ul>	Completed Closed
B2	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014 3-10 May 2015 6-13 Dec 2015 14-21 May 2016	Activities along the dam access road need to be managed to reduce impacts (on-going issue)	Degradation, logging and forest clearance for agriculture along access roads. EPF grant allocated (Dec 2015). On-going for life of project	<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	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)	<ul style="list-style-type: none"> <li>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.</li> <li>Ongoing need: EMO to report on any infractions</li> </ul>	High
B4	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)	<ul style="list-style-type: none"> <li>NNP1PC should check to make sure proposed species to be introduced are NOT potentially invasive</li> <li>Need careful review to ensure no introduction of exotic species with likely negative impact on native fish fauna.</li> </ul>	Low
<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*
B5	Site visits: 7-12 January 2013 17-24 November 2013  3-10 May 2015   11-18 Dec 2016	<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) On-going for project life</li> </ul>	<p>Medium</p> <p>High</p>
B6	Site visits: 4-11 May 2014 7-14 December 2014 3-10 May 2015 6-13 Dec 2015  11-18 Dec 2016	<p>Appropriate and integrated Watershed management activities</p> <p>Initiate development of ISP for XSB</p>	<p>The watershed now falls mainly within the boundaries of XSB Province which lacks an integrated spatial plan</p> <p>ISP further delayed (Dec 2016)</p>	<ul style="list-style-type: none"> <li>Work with MONRE and environmental offices in XSB to develop ISP</li> <li>NNP1C work with XSB to prioritize and complete planning for districts within watershed as critical input to watershed management plan</li> <li>Available data included in WMP</li> </ul>	Very high

\* 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: 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	<ul style="list-style-type: none"> <li>Develop guidelines and mitigation plans to minimise habitat loss due to construction activities and for restoration and rehabilitation of impacted areas.</li> <li>NNP1C to monitor habitat infractions in watershed</li> </ul>	High
B8	Site visit 4-11 May 2014 3-10 May 2015 6-13 Dec 2015 14-21 May 2016	Working with MONRE to manage watershed management activities	<ul style="list-style-type: none"> <li>Current budget request from MONRE focuses on vehicles and salary supplements; need to refocus on actions</li> <li>Urgent that Watershed Management Plan is completed with 1<sup>st</sup> draft due July 2016.</li> </ul>	<ul style="list-style-type: none"> <li>Little progress with WMP (Dec 2015)</li> <li>Provinces implementing early actions with NNP1PC funding.</li> <li>No further activities should be supported before approval of the WMP.</li> </ul>	Closed
B9	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>	Developer's EMO to work with MONRE to seek capacity and mentoring opportunities Ongoing	Medium
B10	Site Visit 7-14 Dec 2014 3-10 May 2015 6-13 Dec 2015 14-21 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	<ul style="list-style-type: none"> <li>Activities in protection forest in Houay Ngoua 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
<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		Collaboration with NNP2 on watershed management	<ul style="list-style-type: none"> <li>Developments at NNP2 impact on watershed, including water quality and aquatic biodiversity</li> <li>Limited recent contact with NNP2</li> </ul>	Continue contact with NNP2 to facilitate collaboration and complementarity of watershed management	High
B12	Site visit 3-10 May 2015 6-13 Dec 2015 14-21 May 2016  11-18 Dec 2016	Watershed Management Plan	<ul style="list-style-type: none"> <li>Urgent that Watershed Management Planning team is mobilized immediately and managed as one integrated team.</li> <li>Draft WMP under prep</li> </ul>	<ul style="list-style-type: none"> <li>NNP1PC should focus on WMP as a priority using EMO leadership until consultants on board.</li> <li>Draft IWMP including data from biodiversity, fisheries and reservoir management plan to be discussed with government Jan 2017</li> </ul>	Urgent
B13	Site visit 6-13 Dec 2-15 14-21 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>	<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>	Completed Closed
B14	Site visit 3-10 May 2015 6-13 Dec 2015 14-21 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>	<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 NNP1C, ADB and other potential sources</li> </ul>	Very High
B15	Site Visit 3-10 May 2015 6-13 Dec 2015 14-21 May 2016 11-18 Dec 2016	Biodiversity Offset Management Plan	BOMP plan delayed, due Nov 2017	BMOP prep and pre-activities should start asap	Very High
B16	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	<ul style="list-style-type: none"> <li>Identify opportunities for species conservation activities in XSB from the Environment Protection Fund (EPF)</li> <li>Incomplete</li> </ul>	High Very
<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	Site visit 6-13 Dec 2015 14-21 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 provinces</li> <li>Brief survey by BAC and NNP1C to KXNM</li> </ul>	<ul style="list-style-type: none"> <li>Given apparent conservation value of Nam Chouane-Nam Xang and strong provincial support concentrate solely on Nam Chouane -Nam Xang as offset site unless evidence arises of conflicting development plans.</li> <li>Activities should begin at the primary NC-NX site as soon as possible, including additional surveys and management planning.</li> </ul>	High
B18	Site visit 6-13 Dec 2015 14-21 May 2016  11-18 Dec 2016	Biomass clearance –	Site plans under preparation and clearance progressing well.	<ul style="list-style-type: none"> <li>Review detailed site plans to ensure no new access into watershed forests. Ongoing.</li> <li>Need to speed up clearance prior to inundation deadline</li> </ul>	
B19	Site visit:14-21May 2016  11-18 Dec 2016	Supplementary survey at Nam Chouane-Nam Xang	ADB has requested a supplementary survey with international expertise	<ul style="list-style-type: none"> <li>Supplementary survey should be conducted in June/July 2016 so that results can be incorporated into Biodiversity Offset Option paper at end of July</li> <li>Survey completed – Timmins report</li> </ul>	Completed Closed
B20	Site visit:14-21May 2016  11-18 Dec 2016	Collect further data for Nam Chouane-Nam Xang including satellite imagery, any information re conflicting development plans.	Initial results from Biodiversity field surveys indicate Nam Chouane-Nam Xang very promising as offset site; now need to begin collating additional information on habitat coverage etc.	<ul style="list-style-type: none"> <li>Collect good baseline data on forest types, extent of shifting agriculture, and gender disaggregated data on dependency on forest use and products for domestic and cash use as well as opportunities to include more ever wet forest within boundaries of proposed site.</li> <li>This information will feed into the offset management plan (BOMP) and monitoring plans.</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>					

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of concern*
B21	Site visit:14-21May 2016  11-18 Dec 2016	Biodiversity Offset Option paper and final decision on site	<ul style="list-style-type: none"> <li>Biodiversity Offset site has been under discussion for 3 years. Option paper due end July needs to confirm site to meet ADB deadlines.</li> <li>Offset paper delayed</li> </ul>	<ul style="list-style-type: none"> <li>Based on current evidence (forest cover, biodiversity and conservation values, political support) IAP recommends Nam Chouane-Nam Xang as offset site unless there are conflicting development plans for the area.</li> <li>Nam Chouane-Nam Xang area designated as primary offset site</li> </ul>	Very High
B22	Site visit:14-21May 2016 11-18 Dec 2016	NNP1C and PONRE to discuss protection status and institutional mechanisms for Nam Chouane-Nam Xang	<ul style="list-style-type: none"> <li>Biodiversity Offset site currently has no legal status in Laos.</li> <li>Need to clarify how area will be protected and managed.</li> <li>NNP1PC reports that <a href="#">Nam Chouane-Nam Xang Offset Site is part of a larger area which is designated as National Protection Forest. In legal terms this offers rather similar level of protection as National Protected Area.</a></li> </ul>	<ul style="list-style-type: none"> <li>Recommend outlining the steps for area to achieve NPA status.</li> <li>Institutional arrangements should be outlined in BOMP.</li> </ul>	High
B23	Site visit 14-21May 2016  11-18 Dec 2016	Additional biodiversity surveys in watershed	<p>Additional surveys commissioned in Dec 2015 but not yet underway</p> <p>Dec 2016 still not undertaken</p>	<ul style="list-style-type: none"> <li>Ideally complete additional surveys to feed data into IWMP. 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
B24	Site visit14-21May 2016	Recruit 3 <sup>rd</sup> expert to Biodiversity Advisory Committee	BAC should have a minimum of 3 biodiversity experts to provide advice to NNP1C	Recruit 3 <sup>rd</sup> expert by end of June	Closed
B25	Site visit 11-18 Dec 2016	Data on aquatic fauna in Nam Chouane-Nam Xang watershed	Lacking information of aquatic fauna and fish data	Initiate fish survey in NC-NX site	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*
B26	Site visit 11-18 Dec 2016	Community use of NC-NX area	Community mapping of swidden and forest use	Initiate community mapping as part of BOMP preparation, including collection of data on villagers' dependency on forest use and products for domestic and cash use	High
B27	Site visit 11-18 Dec 2016	Integrating biodiversity protection and management in WMP	Key areas for populations of threatened fish and rare species e.g. gibbons, Owston civet, Lao newt in sub-catchment	<ul style="list-style-type: none"> <li>• Include activities to protect biodiversity activities in 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>					

# Annex 1: Resettlement Issues

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## Background

1. 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).
2. The number of project affected people (PAP) to be impacted 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.
3. The resettlement site for the PAP is an area of approximately 2,393 ha called the Houay Soup Resettlement Area (HSRA) (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 HSRA is located on the right bank of the Nam Ngiep river under the administrative jurisdiction of Ban Hat Gniun, Bolikhan District, Bolikhamxay Province.
4. A 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 is underway, following completion of 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.
5. 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) (i.e., the *Resettlement Committee*), as well as provincial level 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.
6. The first PAP were resettled by SMO in November 2016. Twenty-four (24) PAP households were resettled from Hatsaykham hamlet to the HSRA, while 22 households chose to self-resettle and 16 households remain in the village (in mid-December 2016). [NNP1PC reports that](#) PAP households resettled to HSRA were [issued with land titles](#) for housing (800 m<sup>2</sup>) and adjacent garden land (400 m<sup>2</sup>), [and for paddy land, and with land use certificates for cash crop and tree crop lands](#) and for 800m<sup>2</sup> of land from which to collect fuelwood.

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

### Supplementary comments related to Zone 2LR, Hom District, Xaysomboun Province

7. **Issue:** PAP in Zone 2LR demonstrated serious dissatisfaction with the slow implementation of resettlement requirements, specifically: resolving disputes through arbitration and the grievance process; delayed payment of compensation for assets; delayed consideration and approval of self-resettlement plans; hesitation of clan leaders to decide on a self-resettlement area into which to move; disagreement with unit compensation rates; identifying a mechanism through which PAPs can be paid in cash rather than opening a bank account (a CA requirement); and, failure of the GOL to give appropriate recognition to their status as veterans of the Lao civil war.
8. While the IAP Resettlement Specialist met with the Hom DCC, the Indigenous Peoples' (IP) Specialist visited impacted villages in Zone 2LR, including Ban Namyouak, where 24 PAP households continue to refuse to allow their assets to be surveyed and registered. The IP Specialist reported that they also were planning to cultivate rice as usual during the 2017 wet season (May-November), notwithstanding the requirement that all PAP households be resettled by May 2017, one year prior to reservoir impoundment. The IP Specialist consulted with more than 100 PAP during the site visit to several villages. [In this context, NNP1PC is making some progress helping PAP to prepare self-resettlement plans that are prerequisites for paying compensation. The self-resettlement plans are consistent with Lao regulations that require prior approval for relocation and resettlement from the receiving provinces, districts and villages.](#)
9. The IAP understands that SMO arbitration, compensation, and grievance processing staff is insufficient to meet the challenging timetable. Additional part-time staff and temporary staff is needed to accelerate the undertaking of these tasks. NNP1PC internal transfers, use of fourth-year university students, and engaging part-time GOL officials could be considered. **(Issue R4)**

#### Recommendations:

- The IAP recommends that NNP1PC should continue to work with GOL officials to resolve all resettlement issues in zone 2LR.
- NNP1PC should increase staff assigned to prepare self-resettlement plans in consultation with PAP at all impacted locations.
- The IAP recommends that NNP1PC work with RMU to accelerate consideration of self-resettlement plans and payment of compensation.
- Self-resettlers should be offered an opportunity to receive/reject occupational training related to implementing the self-resettlement plans.
- NNP1PC should advise GOL officials about the availability and use of Community Development Funds to support development at self-resettlement sites following COD.

### Supplementary comments related to Ban Hatsaykham resettlement, Bolikham District, Bolikhamxay Province

10. **Issue:** PAP self-resettlers from Hatsaykham displayed anger with NNP1PC and the RMU specifically for (i) not being compensated in a timely manner for assets they will lose when the reservoir is impounded; (ii) delayed resolution of grievances -- some for more than 8 months, leading to a lack of PAP confidence in the grievance process mandated in the

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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.

CA; and, (iii) failure of NNP1PC to negotiate (arbitrate) with PAP in a manner consistent with the Law on Resolution of Economic Disputes (No. 44/PO, 25 May 2005, Chapter 3), prior to filing formal grievances. The reasons offered by NNP1PC and the Bolikhan District Grievance Committee for the inordinate delays include: (i) insufficient NNP1PC technical staff to undertake field investigations related to the grievances; (ii) the District Grievance Committee has been focused on resolving grievances filed by PAP in Ban Hatsaykham, because they were resettling first, while delaying consideration of grievances (mostly related to compensation for land in HSRA) from PAP in Ban Hat Gniun; (iii) RMU delays in approving self-resettlement plans since RMU officials are part-time; and, (iv) reported lack of sufficient support to the District Grievance Committee by NNP1PC. The grievance appeal process is lengthy due to a shortage of legal and technical staff, especially women. **(Issue R5)**

**Recommendations:**

- The IAP recommends that E&S management immediately focus on resolving outstanding compensation and grievance issues. Not doing so will cause additional social tension and lead to non-compliance with the CA.

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

11. **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 their land because of reservoir impoundment. Thathom District officials have identified two areas suitable as agriculture replacement land for impacted PAP: Tong Leu and Don Paw. NNP1PC has no obligation to assist with self-resettlement to these areas. However, NNP1PC has provided assisted with soils tests and will provide technical assistance and support for livelihood restoration to self-resettled PAP households. NNP1PC has an effective livelihood restoration program in 2UR, with 61 participating PAP households implementing 75 activities, focusing on livestock rearing, fish raising, and vegetable production in greenhouses. **(Issue R7)**

**Recommendations:**

- NNP1PC managers and Thathom district officials and the Xaysomboun RMU should consult and agree on a program for developing agricultural replacement land for PAP at 2UR.

**Supplementary comments on organizational and institutional issues**

12. **Issues:** The IAP remains concerned about the following organizational issues related to resettlement activities **(Issue R8):** Increased tension between PAP in 2LR and NNP1PC, Xaysomboun RMU, and Hom DCC. Failure to urgently resolve these issues and decrease tension may delay resettlement, impoundment, and COD.

**Recommendations:**

- The IAP recommends that ESD management immediately focus on resolving outstanding compensation and grievance issues. Not doing so will cause additional social tension and lead to non-compliance with the CA; and, may delay COD.



## **Supplementary comments on delayed compensation payments and slow resolution of PAP grievances**

13. **Issues:** PAP from Ban Hat Gniun (whose land at HSRA was confiscated) and self-resettlers from Ban Hatsaykham expressed extreme anger with NNP1PC and the RMU at the unnecessarily delayed payment of compensation and resolution of grievances. PAP and the Bolikhan District Grievance Committee reported to the IAP that some grievances have remained unresolved since March and April 2016. In addition, the RMU reported to the IAP that although arbitration was the GOL's preferred mechanism for dealing with grievances, NNP1PC has not had arbitration, mediation, or negotiations with PAP for at least six months. In addition, NNP1PC staff have not followed the legal format for conducting negotiations stipulated in the regulations for implementing the Law on Resolution of Economic Disputes, No. 44/PO, 25 May 2005, Chapter 3. **(Issue R10)**

### **Recommendations:**

- The IAP recommends that NNP1PC-SMO take immediate action to pay overdue compensation and to resolve long outstanding grievances.
- The IAP recommends that NNP1PC resolve the land compensation issues immediately, wherein previous compensation payments may need to be reviewed; and, additional payments made to PAP in zones 3 and 5 who have land that has been impacted.
- The IAP recommends that NNP1PC management should provide guidance to EMO and SMO management regarding administering budgets for the RMU, DCC, and the District Grievance committees. Cutting RMU budgets during this critical time, prior to resettlement, impoundment, and COD, may not be warranted.

# Resettlement and Social Photos



PAP displeased with delayed resolution of grievances and payment of compensation, from Ban Hat Gniun and self-resettlers from Hatsaykham confronting NNP1PC representatives prior to IAP visit to HSRA.



Hatsaykham resettlers at their new homes at the HSRA. PAP were resettled in November 2016 and reported overall satisfaction with their new houses and allocated lands.



PAP lead farmer explaining raised bed vegetable production in a greenhouse in Zone 2UR; a livelihood restoration activity promoted by NNP1PC-SMO staff.



A very pleased PAP in Ban Thahua, Zone 5, where the livelihood restoration program for impacted host villagers has had a high degree of success.



The IAP Indigenous Peoples (IP) Specialist in an amicable meeting with PAP in Zone 2LR. All PAP stayed away from a scheduled consultation with the IAP, ADB, LTA, GOL, and NNPIPC representatives that was organized for them at the Hom District office. Among the reasons given by the PAP for not traveling to the meeting were that meeting per diems had been reduced and that they did not expect any resolution of their grievances to result from the meeting. They preferred that the IAP, ADB, and LTA monitors and project supervisors meet with them in their villages. The IAP's IP Specialist could further clarify unresolved issues as a result of his meetings with PAP.



# Annex 2: Social & Indigenous Peoples' Issues

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## Summary of Indigenous Peoples Specialist's Inputs

### 1. Introduction

1. This is a progress report of the 8<sup>th</sup> site visit of the IAP to the Nam Ngiep 1 Hydropower Project (NNP1PC). The site visit took place on 11-18 December 2016. As the IAP Expert on Indigenous People (IP), I had visited four directly affected villages in Zone 2LR (Ban Namyouak, Ban Sopyouak, Ban Soppouane, and Ban Houaypamom) in Hom District, Xaysomboun Province alone, because the PAP of the four villages boycotted and refused to join a meeting with the IAP in Hom District headquarters that was organized by the Hom District Governor. I met the village headmen, village committees, and many PAP of the four villages in Zone 2LR; altogether around 100 persons. These included the 24 PAP households at Namyouak Village who refuse to have their assets registered by the Project.
2. In Zone 2UR, the IAP visited two indirectly affected villages: Ban Phiengta and Ban Hatsamkhone in Thathom District, Xaysomboun Province. The Thathom District Governor organized a meeting at the Thathom District Office for the PAPs and the IAP to meet one another for about one hour. The IAP was assigned to meet the Ban Pou village leaders for about 30 minutes.
3. In Zone 3, the IAP visited PAP who recently (November 2016) moved from Ban Hatsaykham into the Houay Soup Resettlement Area (HSRA). The IAP IP specialist had one hour to meet the village headman and his wife and observed the resettlement village at HSRA, Bolikhan District, Bolikhamxay Province.
4. In Zone 5, the IAP had meetings with the elders of Ban Thahuea and Ban Hat Gniun in the villages. The IAP also visited a group of 11 PAP households (IP Hmong) who chose self-resettlement at Ban Noonsomboune, Bolikhan District, Bolikhamxay Province.
5. During this 8<sup>th</sup> IAP site visit approximately 140 PAPs were met by the IAP, either directly or indirectly, in formal and informal meetings. All relevant issues were discussed and the IP specialist strived to find the best solutions together with other participants, namely: the GOL, IAP, ADB, LTA, NNP1PC staff, village headmen, village committees, and village elders.

### 2. Meetings

6. The IAP had six formal meetings with higher levels of the GOL, as follows:
  - **15 December 2016:** A formal meeting with the NNP1PC Staff in NNP1Pc Office, Thathom District, Xaysomboun Province.
  - **15 December 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 together with two village elders of Ban Pou, Zone 2UR.
  - **16 December 2016:** A formal meeting with the Governor of the Bolikhan District, in the Office of RMU Bolikhamxay Province.
  - **16 December 2016:** A formal meeting with the Head of RMU of Bolikhamxay Province (Mr. Khamsing).

- **16 December 2016:** A formal meeting with the Head of RMU of Xaysomboun Province (Mr. Phonexay) in the Office of RMU Bolikhamxay Province.
- **16 December 2016:** A small group meeting with the Social Team of the NNP1PC Staff at NNP1PC Office, Pakxan, Bolikhamxay Province.

### 3. Schedule

7. During this 8th IAP site visit the IAP had formal meetings and informal meetings to discuss, interview, and observe many cultural and social aspects of the NNP1 project and programs. The IAP schedule was as follows:

- **10 December 2016**
  - Arrival Vientiane, Lao PDR and had worked on reviewing the related NNP1PC documents.
- **11 December 2016**
  - Working on reviewing the related NNP1PC documents and had a pre-meeting with the IAP members for debriefing meeting and sites visit.
- **12 December 2016**
  - A formal Debriefing meeting with NNP1PC Director and staff at NNP1PC Head Office in Vientiane Capital.
- **13 December 2016**
  - 3 formal meetings with the PAP of Zone 2LR (in Ban Sopphuane, Ban Sopyouak, and Ban Namyouak) of the Hom District, Xaysomboun Province. There were around 100 PAP attended the meetings.
- **14 December 2016**
  - Site Visit to Houay Soup Resettlement Site (HSRA). Discussed with village headman of Ban Hatxaykham and his wife who have resettled in HSRA since November 2016
  - Meeting with the PAP (the headman and about 20 elders both men and women) of Ban Thaheua, Zone 5
  - Meeting with the PAP (about 10 elders both men and women) of Ban Hat Gniun, Zone 5
- **15 December 2016**
  - A formal meeting with the Deputy Secretary Political Leader of Thathom District (Mr. Jitthon), and Hmong elders of Ban Pou, Zone 2UR in Thathom District Office.
  - Visit Livelihood Programs in Ban Phiengta and Health Care Center in Ban Hatsamkhone, Zone 2UR.
- **16 December 2016**
  - A formal meeting with the Head of RMU of Xaysomboun Province (Mr. Phonexay) in RMU Office, Bolikhamxay Province.
  - A formal meeting with the Head of RMU of Bolikhamxay Province (Mr. Khamsing) in his office.
  - A formal meeting with the Governor of the Bolikhan District, (in RMU Office Bolikhamxay Province).
  - A formal meeting with SMO Staff in NNP1PC Office, Bolikhamxay Province.
- **17 December 2016:**
  - A formal meeting with NNP1 PC Director and staff for presentation of facts finding and discussions at NNP1PC Head Office in Vientiane Capital.
- **18 December 2016:**
  - Working on NNP1PC documents and returning to Bangkok, Thailand.

#### **4. Summary of IP and social issues**

8. It was unfortunate that during this 8th site visit the IAP had limited time to meet the PAP in HSRA, Zone 3 because of the blockage of the road by some dissatisfied PAP. As well as the boycott by the PAP of the four villages in Zone 2LR, who did not want to attend the IAP, ADB, and LTA meeting at the Hom District Office. Instead the IP specialist decided to go alone to the four villages and meet the PAP directly. The PAP's issues and problems include the following: compensation, resettlement and self-resettlement, resettlement site (HSRA), construction, new assets, livelihood programs, community participation, crime, cooperation, and collaboration, among others.

#### **5. Requirements and recommendations**

9. I have provided requirements and recommendations above (see matrix in Part 2) that should be considered.

#### **6. 9<sup>th</sup> IAP site visit**

10. The next IAP site visit is scheduled for 4-10 June 2017. During that site visit I would like to request meetings according to the following itinerary:
  - Meet the Governor of Xaysomboun Province, Head of RMU of Xaysomboun Province, and Governor of the Hom District.
  - Meet the Governor of Thathom District, Xaysomboun Province
  - Meet the Governor of the Bolikhamxay Province, Head of RMU of Bolikhamxay Province, and Governor of Bolikhan District.
  - Meet the PAP of the 4 villages of Zone 2LR (Ban Namyouak, Ban Sopyouak, Ban Soppouane, and Ban Houaypamom) who have moved to HSRA.
  - Meet PAP of Zone 5 (Ban Thaheua, Ban Hat Gniun, and Ban Nonsomboune, Bolikhan District, Bolikhamxay Province.
  - Meet the PAP of Zone 2UR, Thathom District, Xaysomboun Province.
  - Monitor the PAP who chose self-resettlement.

# Annex 3: Environmental Issues

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## Supplementary Comments on Selected Environmental Issues

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 EMUs of Bolikhamxay and Xaysomboun to join in its compliance monitoring activities, laboratory training, and field monitoring work enabling the EMUs to monitor implementation of the EMP on their own and to report on the adequacy and effectiveness of mitigation measures being implemented by the Project Proponent. This is in accordance with the CA Annex C Social and Environmental Commitments. Monitoring by the EMUs is generally considered useful in judging adequacy and acceptability of the implemented mitigation measures by the Project Proponent.
2. The IAP did not have the opportunity to meet separately with the EMUs on this trip or to review and discuss any environmental issues with DONRE or PONRE representatives. However, representatives from both EMUs participated in the December 2016 environmental laboratory testing program held at the Owner's Base Camp. The IAP is satisfied with the capacity building efforts being made by the EMO for the EMUs.

### Recommendations

- The IAP again 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 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 2017 AIP 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 NNP1PC includes *compliance monitoring training* of the EMUs by illustrating how actual “environmental issues” found at the contractor camps or construction sites of NNP1, are resolved by the EMO (example the outstanding issue of developing, operating, and monitoring an adequate chlorine residual for the contractors’ wastewater treatment plants). The EMO can use one or two of these chlorine feed systems as case studies for hands-on experience and invite the EMU to join with them during an inspection and compliance monitoring mission.
- It is recommended again 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. If 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.

3. 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 monitoring mechanism to solve environmental problems.
4. **Issue: Solid waste management during the construction phase, in both project areas and impacted communities.** The IAP commends NNP1PC on constructing a “best practices” sanitary landfill, leachate collection and treatment system. The disposal site for septic tank sludge collected from the work camps is also properly demarcated, protected and managed by the main contractor. These facilities should be adequate to meet the solid wastes disposal needs of the project throughout the construction phase. NNP1PC is encouraged to continue its efforts to maximize waste separation and recycle. Project facilities and management activities represent a “best practices” example for Paksan and neighboring Lao provincial towns and communities.
5. The EMO needs to continue its efforts to modify behavior of project impacted communities with respect to solid waste collection and management. Focus on “green technologies” to cope with solid wastes from new shops, restaurants, bars, and service centers is a win-win strategy for these communities and to villagers interested to participate in potential income earning activities. Interested villagers should be supported technically and financially by NNP1PC through Waste Recycle Banks established in each of these communities. Villagers should be encouraged and rewarded to collect, process, and sell solid wastes from the service areas and the construction camps. Such wastes include all food wastes, which can be used to produce animal feed, raise worms, and make compost. Technical assistance, awareness building and training, are needed from NNP1PC. A Community Waste Recycle Plan should be developed by the EMO Waste Management team or an outside Consultant to serve as part of the 2017 AIP. Pilot projects are needed for hands-on experience and capacity building. By year 2, Waste Recycle Banks can be established in each village.
6. 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 these construction wastes and the EMO makes periodic inspections at the project landfill. The IAP continues to support a landfill charge or fee for all Sub-contractors using the landfill as the fee promotes efficiency of use and cooperation. A penalty fee needs to be included for those sub-contractors that do not abide by the rules.
7. Sub-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). The IAP notes that it is most important that no hazardous wastes leave the project area until the EMO inspects the location and process where the hazardous wastes are being sent and approves of the disposal or treatment technology used by the recycle firm. A record of such approved disposals of hazardous wastes needs to be maintained by the EMO throughout the construction period.
8. A separate well designed and constructed sanitary landfill is now available at Houay Soup. Operation guidelines and training will need to follow once the community infrastructure is completed and villagers have moved into new homes. 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 now aware that this issue has been resolved yet.

9. The IAP is enthusiastic about the Waste Bank program and encourages NNP1PC to restore funding and expand the concept throughout the project area. It is important that the EMO continues to keep a detailed inventory of wastes generated and being sold (including hazardous wastes, such as motorcycle oil, batteries, tires, etc.). 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 continues to be 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 (by a regional Consultant) 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 such a study will help the Company together with the Village Committees to decide which options appear most suitable for selected villages. A visit to Phitsanulok, Thailand, by the Waste Management Team Leader, to witness and visit the extensive recycle industry, would be beneficial for developing a long-term waste recycle plan.
  - Maximizing the "green technology" approach will reduce future costs of building and operating a landfill and transport costs for trucking wastes to the landfill disposal site. Collection fees from villages 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 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.
10. **Issue: NNP1PC Management of Environmental Issues.** The IAP site visit allowed for numerous observations of cooperation and technical support from Management and the Technical Department to the EMO. The IAP is aware of improved communications and support among the Departments as evidenced by the completed sanitary landfill facilities and the on-going construction improvements at the sub-contractor wastewater treatment plants.

#### **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 2017 AIP of the ESMMP-CP, and Code of Conduct). A Consultant is needed to review the installation and operation of chlorine feed systems at the various Sub-contractor wastewater treatment plants to ensure a proper chlorine feed system and a chlorine residual in the wastewater effluent of approximately < 1mg/L.



The feed systems might vary from sub-contractor to sub-contractor but the measured chlorine residual should be about <1 mg/L for all wastewater discharges.

- There appears to be inadequate monitoring of the ongoing biomass removal works by both the EMO and the Biomass Removal Contractor. The compensation issue for villagers who are losing land for the future reservoir should have been resolved before the beginning of this new dry season to avoid any delay in biomass removal activity.
- The Environmental Laboratory needs to work in the field alongside the EMO Environmental Monitoring team using chlorine test kits to measure and adjust chlorine dosages fed into the chlorine retention tank and residual dosages measured in the final discharge and sampling tank. Monitoring of effluent samples (frequency and parameters monitored) will need to be intensified until the results of the wastewater treatment systems show improved efficiency and an effluent meeting Lao standards. The AIP 2017 should be revised to address this issue in detail.
- Follow up of non-compliances with the contractors on all issues of environmental pollution needs stricter non-compliance and penalty enactments by both the EMO and TD. NNP1PC needs 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 per 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 include a history of non-compliance and potential to cause serious damage to the environment or human health.
- The IAP supports the EMO requests for each sub-contractor to prepare a “Preliminary Site Decommissioning Plan”. This includes the Contractor for the Extended Quarry and main quarry. The plan should include replanting or refurbishing of the vegetation along the slopes to produce a natural vegetation cover of the quarry area which will eventually provide erosion protection and a natural vegetation cover to the quarry slopes.

**11. Issue: The EMO Environmental Laboratory.** The IAP is pleased to see that the construction of the Environmental Laboratory will be completed by end of January 2017 and that equipment ordered has already been delivered to the Owner’s Base Camp. Training is also underway to ensure competence of the lab staff and permit the EMUs to become familiar with environmental sampling and measurement.

### **Recommendations**

- The IAP recommends that some additional field test equipment be made available to monitor and guide operation of pollution control systems in the field. These include both Jar Test apparatus and chlorine test kits (the latter for monitoring chlorine feed levels and chlorine residual in the final effluent). The kits can be lent to or borrowed by the Sub-contractors who need to use these test parameters on a regular basis to improve operations and meet effluent standards.
- The test kit results would better support the EMO Compliance Monitoring work at construction camps and at wastewater discharge points (for monitoring ambient environmental conditions). 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.
- The 2017 AIP of the ESMMP-CP should include measurement of Greenhouse Gases at the Environmental Laboratory, as the Biomass Removal Plan is underway and this parameter is a primary criterion of the BRP.

## Summary

12. The IAP met with key EMO and TD staff and reviewed compliance and environmental monitoring work and environmental issues of wastewater treatment plants for all construction camps, the installation and monitoring needs for establishing a reliable chlorine feed system, monitoring of the biomass removal works, water quality monitoring, solid and hazardous wastes management at the construction sites and in the villages, recycle opportunities for all types of solid wastes, and the need for further support and cooperation from the Technical Department. 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 standards. However, monitoring tasks need to be redesigned to meet current issues and it is recommended to revise the 2017 AIP to cover these intensive monitoring tasks and assign staff accordingly (type of sample, parameters to be measured, location and frequency of sampling and analysis, number of days) and present a revised 2017 AIP.
13. The IAP recommends that NNP1 begins to develop and discuss with Contractors a Closure Plan for work sites. The plan should include 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 for the Company to have the LTA and IAP carry out site inspections during alternative quarters or have the LTA visit 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: Newly constructed sanitary landfill for the NNP1 project. The landfill is operated by the Main Contractor and supervised by the NNP1PC. Pictures show properly lined disposal cell with impermeable plastic liner and leachate collection system. Cell will receive construction and camp wastes from Contractor and Sub-contractors. These wastes will not contain recovering recyclable materials, which are being removed by all contractors at their camps, prior to transport to the landfill. The photo on the right shows the series of leachate evaporation ponds constructed for long detention time and evaporation of leachate. There are also four observation wells around the landfill to check on groundwater quality and possible contamination from the leachate. NNP1 will manage the site for both and construction and operation phases.



Top photo shows construction of wastewater pond replanted with aquatic plants to create a wetlands treatment pond. However, the pond is not properly lined and the selected plants do not meet wetlands plant criteria. Bottom photo shows improperly constructed treatment plant.



Photo shows improperly designed and installed chlorine feed system for wastewater treatment plant. The two new tanks are to be used as chlorine contact tank and final monitoring tank to check the quality of the treated effluent in terms of residual chlorine and fecal coliform organisms.



No progress has been made to improve wastewater treatment at several camps, including that of the Main Contractor shown above. Photo shows combined wastewater "aeration" tank, which 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. Installation of a chlorine contact tank is planned for February 2017 as a final step in the treatment process.



Biomass removal in the reservoir area, Ban Sop Youak, Hom District (photograph courtesy of Ettore Romagnoli, LTA, Dec. 2016). Progress to clear 1,912 ha (cut, burn and remove) is significantly behind schedule due to late payment to villagers for land to be cleared. Villagers must be compensated first. Contractor will need to increase both machinery and labour to clear out remaining biomass during dry season of Nov. 2017 – May 2018 to achieve removal target and contract commitments. Cut biomass can be kept and used by villagers for firewood or building materials. Impoundment is still scheduled for December 2017.

# Annex 4: Biodiversity Issues

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## Supplementary Comments on Selected Biodiversity Issues

1. This report is based on a visit by the Biodiversity expert to the Nam Ngiep1 project, discussions with the Project Developer, the NNP1 Managing Director, NNP1 EMO Biodiversity and Watershed teams, ADB Environment team, Lenders Technical Assistance team, as well as national officials from the Department of Forest Resources Management (DFRM) (recently transferred to the Ministry of Agriculture and Forestry – MAF) and Bolikhamxay provincial officials. The main activity was a three-day Biodiversity Offset workshop in Vientiane with input from international experts on Biodiversity Offset and a one day meeting with local government officials.
2. This report covers: A summary of findings from the Biodiversity Offset workshop, progress with the Biodiversity Offset, Watershed Management Plan, and Biodiversity Funding. Many of the recommendations repeat previous comments.

### Summary

3. Since the last IAP visit in May 2016 there has been continued good progress on key biodiversity issues. Dr Will Duckworth has been recruited to join the Biodiversity Advisory Committee (BAC) and has taken over as Chair, with the BAC now including three well qualified representatives. ADB and NNP1C have agreed that the Nam Chouane/Nam Xang (previously referred to as the Nam Mouane catchment area) will be the primary offset site and additional biodiversity surveys have been completed there to assess biodiversity values.
4. The Biodiversity Offset Options paper scheduled for July 2016 was delayed again, partly to await results from the more detailed field surveys in the Nam Chang-Nam Xang area. Since selection of an appropriate offset site, and development of an appropriate management plan, is critical to meet ADB conditions, ADB organized a 3-day workshop in Vientiane in December to assess biodiversity values of the primary offset site and whether interventions there would be adequate to offset project impacts in the Nam Ngiep 1 sub-catchment. This meeting included a two-day internal meeting with representatives of NNP1C, BAC, IAP, and ADB, and benefited from the participation of four international experts with global expertise on biodiversity offsets. Government representatives joined the third day of the meeting where it was agreed that activities should begin as soon as possible at the primary offset site Nam Chouane-Nam Xang (NC-NX) while additional measures to further offset project-induced biodiversity loss would be incorporated into targeted mitigation measures in the watershed management plan and/or could be addressed through additional interventions at other sites as needed.
5. Much of this report covers discussions and recommendations arising from the Biodiversity Offset workshop. The workshop was useful in identifying what biodiversity can be protected in NC-NX and where activities to protect key species need to focus on the NNP1 sub-catchment. Progress with the Offset component has been slow but there is now a clear road map for implementing the Biodiversity Offset focusing initially on preparation of a Biodiversity Offset Management Plan for the NC-NX site (due by November 2017) and mitigation activities in the watershed.
6. Progress with developing the watershed management plan (WMP) has improved, with recruitment of the international WM specialist. Work on the Integrated Spatial Plan (ISP)

in various districts within Xaysomboun (XSB) is further delayed (completion was expected by end of June 2016) but information for several relevant districts within the sub-catchment have been incorporated into the WMP. Two key changes have occurred. A re-mapping exercise has concluded that the area of the NNP1C sub-catchment includes an additional 60,000 hectares due to realignment of provincial boundaries and it has been decided to exclude the Houay Soup resettlement area from the WMP. Although a contract was issued for further biodiversity surveys in 2016, no additional surveys have been conducted in the watershed as the survey teams have concentrated all their efforts on the potential offset site in Nam Chouane-Nam Xang. Available information from the ISP [exercise](#), biodiversity and fisheries sub-plans, and a reservoir management plan are being combined into one ([integrated](#)) [watershed management plan \(WMP\)](#). [This IWMP will be discussed with the provinces in February 2017](#) and, once agreed, will guide future funding from both NNP1C and the provinces.

7. 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. Plans for both the primary offset area and watershed should be [comprehensive](#) but completed as soon as possible so that effective implementation can begin in the next few months. Considerable time has been lost in trying to define a 'perfect' biodiversity offset solution. All the discussion on biodiversity values is academically interesting but will be meaningless in achieving a successful offset without effective action on the ground. A key challenge in moving forward will be how to mobilize adequate resources beyond the very modest sums agreed in the Concession Agreement to fund necessary technical assistance and additional funding for effective protection and management of biodiversity both at the primary offset site and in the watershed.

#### **Issue: Biodiversity Offset Progress**

8. ADB safeguards require the project proponents to avoid loss of critical habitats and to mitigate impacts of development both pre- and post-construction of the dam. *In addition to mitigation to minimize environmental impacts caused by construction and operational activities, NNP1C is required to establish a biodiversity offset to compensate for biodiversity losses attributable to the development.*
9. The mitigation hierarchy is a tool used to limit as far as possible the negative impacts of development projects on biodiversity<sup>2</sup> It comprises four steps (i) Avoidance (measures taken to avoid degradation and loss of key habitats and species); (ii) Minimization measures taken to reduce the intensity and extent of impacts that cannot be avoided; (iii) Restoration and rehabilitation to restore degraded areas after impacts; and finally, (iv) Offset to compensate for any residual impacts after full implementation of the other mitigation measures.
  - Biodiversity offsets are generally of two main types: 'restoration offsets' which restore degraded habitats, usually in and around the project site; and, 'averted loss offsets' which aim to reduce or stop biodiversity loss in other areas. The EIA for the project considered biodiversity values of the watershed, likely direct project impacts and made suggestions on some potential offset sites within and beyond the watershed, but these recommendations were based on inadequate biodiversity information and an estimated very small area of impact.
10. The Concession Agreement (CA) and ADB safeguards require both mitigation activities and establishment of a biodiversity offset to address any residual impacts. Biodiversity offsets are often discussed in terms of 'no net loss' and 'like-for-like'. These are difficult concepts in that they require an estimation of the overall impact of the project over the

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<sup>2</sup> See <http://www.thebiodiversityconsultancy.com/approaches/mitigation-hierarchy/>

project lifetime (both direct and indirect) while no two areas are likely to be equivalent in terms of biodiversity values. In most cases agreements on offsets require compromise and trade-offs to best compensate for the likely impacts of the project. Global experience provides some important lessons on the need to adopt a precautionary and realistic approach, require adequate funding for long-term support and often requires experienced technical assistance and capacity building.

11. The footprint of the NNP1 project is ***MUCH*** greater than the area of direct impact (e.g., habitat cleared and flooded – 7,600 ha of habitat lost according to the ERM report). Activities associated with the dam – including new roads and the 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 therefore needs to focus on both mitigation within the sub-catchment to protect biodiversity and minimize impact and also provide support for a credible high biodiversity value offset. Biodiversity surveys undertaken after completion of the EIA revealed some sites of high biodiversity within the watershed but these were considered too small and vulnerable to expected development to fulfil offset needs. Nevertheless, these sites within the watershed should be protected through mitigation activities incorporated within the WMP.
  - Since both NNP1C and the provinces preferred an offset site within the project provinces, subsequently Bolikhamxay Provincial officials (BXY) proposed the Nam Mouane (now the Nam Chouane-Nam Xang) watershed on the border with Vietnam. Preliminary surveys, camera trapping and a follow-up detailed field survey confirmed that the area has some important biodiversity assets with fauna less affected by hunting than in many National Protected Areas (NPAs) in Laos (*Chanthavy et al. 2016, Boonratana, 2016, Timmins 2016*).
12. ADB and the company NNP1C agreed in July 2016 that Nam Chouane-Nam Xang will be the primary offset site but ADB was still concerned about whether the site is adequate to meet the full offset needs compared to biodiversity values impacted in the watershed. Accordingly, ADB organized a Biodiversity Offset workshop in Vientiane in December which benefited from participation of four experts with international experience in developing biodiversity offsets. The workshop undertook a comparison of known biodiversity values within the watershed compared to those in the NC-NX site. Ideally such an exercise should have been conducted much earlier but was delayed due to lack of good biodiversity data within the EIA. The December workshop was therefore a retrofitting exercise but still had to deal with considerable uncertainties, including limited survey data for both the watershed and NC-NX offset site; no data on biodiversity values or levels of threat in the recently-added 60,000 hectares to the sub-catchment area; the challenges of determining direct and indirect impacts; and, likely biodiversity loss over the next 27 years (the project life). Twelve attributes were chosen for comparison including six endemic fish species known only from the watershed, three other threatened fish species, habitat types such as lowland flatlands, faunal groupings (e.g., arboreal mammals and large birds, hunted mammal species subject to snaring, and individual rare species known to occur in the watershed such as Owston's civet and Lao newt). Future predictions of likely biodiversity loss in both the watershed and offset site were based on expert opinion.
13. Comparison of the 12 attributes between the two sites demonstrated the challenges of comparing 'like to like'. The Nam Chouane/Nam Xang offset site covers 77,900 ha of forest along the Vietnam border. This area is smaller than the total sub-catchment area but includes similar forest types and is part of a much larger and less-disturbed block of protection forest within Laos. The NC-NX site is contiguous with the 90,000 hectare Pu Mat protected area in neighboring Vietnam, which has 22 (IUCN) Red List species recorded including populations of endemic Indochina mammals, such as the northern white-cheeked gibbons, red-shanked douc langurs, saola, large-antlered muntjac and

Annamite striped rabbit. It is possible that some of these species may also occur in NC-NX; together the two areas offer potential for a transboundary conservation initiative.

- NC-NX covers a smaller altitudinal range (400-1800 m) than the NNP1 sub-catchment (200 – 2800 m) but the high-altitude habitats and fauna are probably less threatened within the watershed and as part of the Annamite range; NC-NX is likely to harbor some Annamite endemics. The offset site is less populated with limited road access and only six villages farming along the western and southern boundaries. Data from NC-NX surveys shows evidence of relatively good populations of arboreal mammals (e.g., monkeys, gibbons, and large birds, namely hornbills) while populations of ground mammals that are commonly hunted and snared also seem more common than in other more heavily hunted areas in Laos, including many NPAs. Although Owston's civet is thought to occur in parts of NC-NX, the species probably occurs at lower densities than in the NNP1 watershed and no evidence of the Lao newt was found. Ironically neither of the last two species are described in the EIA but were discovered during later biodiversity surveys of the watershed.

14. The six watershed endemic fish are only known from the Nam Ngiep watershed so need to be protected through mitigation measures in the catchment. Fortunately, they occur in rills above the full supply level (FSL) of the reservoir as do spawning sites for the giant pike (*Luciocyprinus striolatus*) – these areas need to be protected. No fish surveys have been conducted in the Nam Chouane watershed area but there is evidence that the giant pike does occur there. It is likely that the watershed will also include some endemic small cichlid species. A fish survey should be undertaken in the NC-NX watershed as soon as possible. Nevertheless, primary interventions to protect fish species will need to be undertaken in the NNP sub-catchment as part of mitigation activities.
15. The offset site has several conservation positives. There is strong political support from the province and the area has both low human population and low hunting pressure. Currently there seems to be good support and engagement from key stakeholders, including security forces and local communities. There are no proposed development projects (hydroelectric or mining) within the primary offset site whereas the watershed includes several mining exploration concessions, as well as five operational and proposed dams for hydroelectric development projects in the headwaters of the Nam Ngiep and a proposal for another dam on a tributary within the sub-catchment.
16. There are many uncertainties in what we know about the biodiversity values of the NC-NX site but also of the biodiversity values of the watershed as well as uncertainty about assumptions of changes at both sites over the next 27 years. Changing the area of project impact in the watershed, more biodiversity information, more optimistic assessments of threat reduction, and/or discovery of additional rare and endangered species ('trading up') in the offset site, all could change the perceived value of the NC-NX site. Further surveys may well give an enhanced value for the primary offset site, or indeed for areas within the watershed or elsewhere within XSB (for additional activities if the security situation improves). What is certain, however, is that biodiversity in all those areas is likely to be further threatened/reduced unless effective protection and management measures are put in place. As new biodiversity priorities emerge more action may need to be taken.
17. The three-day Biodiversity Offset workshop conducted during the 8<sup>th</sup> IAP site visit was useful in determining what biodiversity could be protected in the offset site in the NC-NX watershed and what species would require effective mitigation actions in the watershed. Based on workshop discussions it was agreed that activities should begin as soon as possible within the NC-NX watershed as the primary offset site with a Biodiversity Offset Management Plan (BOMP) to be prepared by November 2017 and preliminary priority activities initiated prior to the delivery of the management plan. [It was also agreed that current funding in the CA is inadequate and that ADB will work together with NNP1C to](#)



arrange supplementary funding including necessary technical assistance from a competent NGO to support government efforts.

### **Recommendations**

- Confirm with government that there are no conflicting development plans for the NC-NX area which has been selected as the primary offset site.
- Initiate a fish survey and more detailed aquatic fauna survey as soon as possible in NC-NX.
- Ensure adequate and appropriate mitigation activities for species confined to the NNP1 sub-catchment are included and resourced in the Watershed Management Plan.
- Begin preparation of a simple Biodiversity Offset Management Plan (BOMP) as soon as possible, for completion by November 2017. Work with government and provincial authorities to identify priority pre-BOMP activities to begin prior to delivery of the management plan.

### **Biodiversity Offset Options Paper**

18. To meet its safeguards requirements ADB needs to prepare a Biodiversity Offset Options paper to consider whether the primary offset site is sufficient to meet ADB safeguard needs. This paper is being prepared very late in the process and needs to take account of all the agreements and commitments already made with government. As well as considering appropriate options for enhancing offset biodiversity values or trading up. The Biodiversity Offset Options paper needs to seriously consider ensuring that any biodiversity offset site is operational, including the need for mobilizing additional resources (both technical assistance and funding) to ensure sustainability. While the discussion on biodiversity values is academically interesting it will be meaningless in achieving a successful offset without effective action on the ground.
19. The funding in the CA for both the biodiversity offset and watershed management is seriously inadequate to cover the needed level of activities to maintain important biodiversity. It is critical therefore that the Biodiversity Offset Options paper makes serious and realistic recommendations on additional funding with a primary focus on additional support for activities in the watershed and primary offset site, including promised support for technical assistance to be provided by ADB. Any proposals for additional activities beyond these two sites should also be accompanied by realistic budgets and recommendations on how they will be resourced.
20. It is important that preparation of the Offset paper should not delay preparation of the management plan (BOMP) for NC-NX or initiation of preliminary activities.

### **Recommendations**

- The IAP recommends that the Biodiversity Offset Options paper should be completed as soon as possible and preferably by March 2017.
- The Biodiversity Offset Options paper should give a summary of biodiversity assessment efforts to date in watershed, other sites proposed by XSB and BKX provincial officials, with reasons for their rejection, and outline the values of NC-NX as the primary offset site.
- Preparation of the Biodiversity Offset Options paper should not delay preparation and implementation of a management plan for the NC-NX primary biodiversity offset site (BOMP).
- Any recommendations on additional offset measures beyond NC-NX and the sub-catchment should be accompanied by realistic budgets and how they might be resourced.

## **Biodiversity Offset Management Plan**

21. ADB has requested that the Biodiversity Offset Management Plan (BOMP) should be prepared by November 2017. The plan will focus on the primary offset site NC-NX. TORs prepared in December 2016 are overly complex and ambitious and should be revised. The management plan should be simple and focus on a few key critical and realistic activities such as community mapping; measures to zone and protect the area in collaboration with the communities and other key stakeholders, including the military; and, simple survey and monitoring activities. Ideally the management plan should be short (25-40 pages maximum), realistic, and easily translated; with any details confined to annexes. It should also have a realistic budget for at least the first five years, including funding for necessary technical assistance. Rather than outsource the contract for the BOMP it would be desirable to prepare this in-house if an appropriate and experienced consultant can be recruited to NNP1C.
22. A key issue for the primary offset site 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 and Bolikhamxay Province should work together to develop appropriate management measures and next steps for adequate protection, including the process to designate the area eventually as an NPA. Such measures need to ensure that there are adequate resources (human and financial) to ensure effective long-term management and conservation.

### **Recommendations**

- Confirm with provincial and national agencies that there are no conflicting development plans for the site (e.g., dams, logging, mineral).
- Secure the latest remote sensing imagery for the NC-NX to map forest and swidden coverage to determine the extent of different forest types and to use as a baseline for future monitoring.
- The biodiversity baseline should include mapping of vegetation types, defined boundaries, trails and access routes, salt licks, etc., to define key core areas for protection and management, critical boundaries, threats (real and potential) and access points and ways to address these.
- Work with communities as part of BOMP preparation 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.
- The management plan should be short and simple, and focus on a few key critical and implementable activities such as community mapping, measures to zone and protect the area in collaboration with the communities and other key stakeholders, including the military. Any pre-BOMP activities should be critical to the protection of the area and provide input to the management plan.
- NNP1C, DFRM and PONRE need to decide the appropriate protection status for the NC-NX site, whether this is eventually to become an NPA or require new legislation to be developed for an offset site.
- Further discussion and thought should be given to finding supplementary funding for the biodiversity offset, including fund flows to support effective government protection, conservation, and management activities and necessary technical assistance.

### **Issue: Watershed Management Plan**

23. Since the last IAP mission there has been considerable progress with the watershed management plan, largely due to recruitment of an international WM consultant as part of

the NNP1C team. A draft watershed management plan (WMP) is under preparation and will be presented for consultation with government in January 2017. The area of the sub-catchment has been expanded by 60,000 ha, additional to the area recognised in the EIA to incorporate all areas up to the XSB northern provincial boundary. The Integrated Watershed Management Plan (IWMP) will integrate baseline information, and identify the main watershed management issues and practical management measures with appropriate budgets. It includes information from the biodiversity and fisheries sub-plans, and reservoir management plan. Completion of the Integrated Spatial Plan has been further delayed but key information from XSB districts within the sub-catchment have been incorporated in the draft. Biodiversity and fisheries sub-plans have been prepared; both are overly ambitious and too complex. The preliminary draft of the fisheries management plan, for instance, is projected to spend approximately US\$1.5 million over the first five years. Activities should focus on simple and practical activities that will identify key critical fish spawning habitats and how these can be protected by activities outlined in the IWMP.

24. The Mekong River has over 850 fish species and more than 100 are found in the Nam Ngiep watershed (Kottelat 2014) with many cyprinids. Six species (3 *Schistura* spp (2 new and *S. crabro*), *Danio* species n, *Poropuntius* sp n and *Oreoglanis delacouri*, are all endemic to the watershed and so can only be protected here. They occur in tributaries that will be inundated in the reservoir, but also occur in locations above full supply level (FSL) of the reservoir. Three endangered larger fish *Luciocyprinus striolatus*, *Poropuntius deauratus* and *Probarbus leabeamajor*, also are found outside the watershed. Deep water pools are used as dry season refugia by many fish species and are critical year-round fish habitat. Eleven fish conservation zones (FCZs) for spawning sites and deep pools have been identified in the watershed and mitigation actions can minimize loss of habitat and reduce soil erosion and sedimentation. Care must be taken to ensure that livelihood activities do not introduce non-native species that could become invasive (e.g., *Tilapia*).
25. Water flow, water quality, and aquatic biodiversity in the Nam Ngiep are threatened by development activities, especially hydropower. There are seven dams planned for the watershed (one is operational, NNP2; and, three others under construction) which will impact aquatic biodiversity in addition to any impacts from NNP1. Dams alter natural flows, reduce water quality and nutrient transport, decrease inundation of downstream floodplains, and alter river channel morphology and habitat types. Threats include changes in water quantity and quality, disruption to spawning cycle, limits on migration, and likely increases in fishing in the reservoir. The IWMP and reservoir management plan needs to propose mitigation activities to address these issues.
26. **Biodiversity in the watershed.** Although the 2015 Biodiversity Assessment survey dismissed the watershed as a potential offset site, surveys 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 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 IWMP including forest protection and species action plans and monitoring. Further biodiversity surveys were planned in the watershed in 2016 but have been delayed as the survey teams have been concentrating on the NC-NX site. Any additional information on key areas for conservation of species populations should be integrated into the IWMP or follow-up actions.
27. The **Houay Soup** area has now been excluded from the WMP. A detailed Natural Resource Management Plan, including the protection forests, has been prepared by consultants but any detailed activities and zoning of the Houay Soup Resettlement Area needs to be done through participatory planning with PAP at the resettlement site. Any

agreed activities within the protection forests should be consistent with retaining forest cover, sustainable utilization and overall watershed objectives.

28. The draft [Houay Soup](#) Natural Resource Management Plan is now due for consultation with government in [March](#) 2017, wherein hopefully agreement will be reached and activities started within the next few months prior, to inundation of the reservoir which is scheduled for mid-2018. The IWMP should prioritize activities and funding from both the provinces and the Company. The Watershed Management Fund, mandated by the Concession Agreement has an allocation of US\$6.24 million over 27 years, with US\$800,000 already disbursed. No further funds should be released until the IWMP is in place and activities should be prioritized against PONRE capacities, clear objectives and verifiable indicators to be monitored by NNP1C. The remaining Watershed Fund is probably insufficient to cover all desired watershed management activities. NNP1C-supported priorities should focus on essential mitigation activities targeted to [the Nam Ngiep 1 watershed \(the immediate watershed\)](#) (e.g., forest restoration, habitat protection, sedimentation control and protection and monitoring of key species in the watershed).

### **Recommendations**

- Final agreement on the IWMP should be reached as soon as possible with prioritized activities, roles and responsibilities including monitoring, and appropriate budgets.
- Initiate as soon as possible further biodiversity surveys within the watershed, including in the additional area of 60,000 ha within the sub-catchment. If these surveys cannot be completed prior to submission of the IWMP, baseline surveys should be conducted as early implementation activities to ensure identification and protection of remaining biodiversity values within the watershed.
- The Biodiversity Offset workshop in December 2016 identified the importance of protecting some key biodiversity components *within* the sub-catchment including threatened fish species, Owston's civet, and Lao newt. Appropriate activities should be identified, engaging local support and expertise where possible.
- Identify opportunities for supplementary 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 (EPF) for XSB.

### **Issue: Budgets available for Biodiversity Offset**

29. According to budget tables in the Concession Agreement there are US\$3.7 million potentially available for biodiversity activities: 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. ADB has committed to providing additional resources for [technical assistance to support the designated offset site conditional on NNP1C committing sufficient funds to implement offset activities](#).
30. Both the Watershed Management Fund and Biodiversity Offset Fund are under-resourced; insufficient to provide the support necessary over 27 years (the project lifetime). ADB has proposed some creative solutions for supplementary funding towards necessary NGO technical assistance for the primary offset site but both NNP1C and ADB need to look again at realistic budget needs for activities to minimize and avert biodiversity loss in the sub-catchment and offset areas respectively.
31. Early preparation of a simple and realistic Biodiversity Offset 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 NNP1C. Given expected revenues from the project and the very small additional increase in overall budget, the IAP recommends that NNP1C commits to additional financing for the biodiversity offset but also considers more long-term financial arrangements in line with international good practice.

### **Recommendations**

- Review conservation needs and priority actions as proposed in BOMP and consider how and when NNP1C 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; **and, to ensure the delivery of the full benefits from any offset.**
- Follow up with the EPF to limit NNP1C contributions to the EPF for conservation projects around NC-NX and biodiversity priority areas within the NNP1 watershed.
- Discuss with World Bank and other donors and international NGOs to identify additional funding for associated conservation initiatives in the Nam Chouane – Nam Xang and adjacent Annamite habitats (e.g., LENS project).

### **Personnel met through the biodiversity offset workshop**

- John Pilgrim, Technical Director, The Biodiversity Consultancy, U.K.
- Dr Fabien Quetier, Senior Consultant, Biotope, France
- Dr Rachel Asante-Owusu, Programme Officer, IUCN Business and Biodiversity Programme (BBP)
- Ray Victurine, Director, Business and Conservation, WCS and Business and Biodiversity Offset Programme (BBOP)
- Government representatives:
  - Mr. Bounseng Pathammavong, Vice Governor, Bolikhamxay Province
  - Mr. Phonesavanh Homnabounlat, Deputy Director, PAFO Bolikhamxay
  - Mr. Konglee Manokoun, Deputy PAFO, Bolikhamxay
  - Mr. Bounlam Saneha, Deputy Provincial Head, Border Army Department, Bolikhamxay
  - Mr. Vonevilay Sombutmounvong, Deputy Head, WRPC Secretariat, PONRE, Bolikhamxay
  - Mr. Saly Sing Savany, Director, DFRM, MAF
  - Mr. Soulaphone Inthavong, Project Coordinator, DFRM, MAF