

# Independent Advisory Panel Report

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

Report Number 3 (Environment) of the Independent Advisory Panel on the Nam Ngiep 1 Hydropower Power Project, Lao PDR including Nam Ngiep 1 Power Company Responses  
Third Site Visit, 4-11 May 2014

Responses provided by the Environment Management Office of Nam Ngiep 1 Power Company for the Asian Development Bank

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**REPORT NUMBER 3 (ENVIRONMENT) OF THE INDEPENDENT ADVISORY PANEL ON THE NAM NGIEP 1 HYDROPOWER PROJECT, LAO PDR INCLUDING NNP1PC RESPONSES**  
*THIRD SITE VISIT, 4-11 MAY 2014*

*Members of the Project's Independent Advisory Panel:*

- Mr. Anthony Zola – Resettlement Specialist (Social)
- Dr. Songwit Chuamsakul – Social Specialist (Social)
- Dr. Richard Frankel – Environment Specialist (Environment)
- Dr. Kathy MacKinnon – Biodiversity Specialist (Environment)

*Responses provided by the Environment Management Office of NNP1PC / Vientiane, Lao P.D.R.*

## Summary of Environmental Issues

No.	Reference Document	Issue	Status	IAP Comments and Recommendations	Level of Concern	NNP1PC comment
E2	National Policy on Environmental and Social Sustainability of the Hydropower Sector in Lao PDR, No. 561/CPI, June 2005	There are four hydropower projects under construction that will affect water quality, water use, and water availability of the Nam Ngiep river. An organizational arrangement is needed to manage watershed resources and enable communications and cooperation between the hydropower companies.	MONRE prefers to manage natural resources based on established levels of government administration, namely, national, provincial and district levels. However, overlapping concessions, cumulative and trans-boundary impacts from hydropower and other development necessitate GOL to develop an integrated management plan and monitoring arrangements.	<ul style="list-style-type: none"> <li>The IAP will bring this issue to the attention of MONRE/DESIA again and ask MONRE to convene a workshop for stakeholders and the GoL.</li> <li>IAP recommends that NNP1PC supports convening of a workshop to discuss coordinated watershed management planning, water use and water quality monitoring, sharing of resources, and conservation measures. Participants should include all government stakeholders, impacted communities, and the Developer, and Consultants.</li> <li>IAP recommends that watershed management techniques should be discussed, such as integrated land use planning, hydrology and rainfall data sharing, river basin modeling, improved communications between stakeholders, and establishing a Nam Ngiep website to post monitoring data and documents for watershed stakeholders.</li> </ul>	Medium	<p>NNP1PC accepts that integrated watershed management is a priority issue. As the lower end user of the Nam Ngiep watershed it is in NNP1PC's direct interests to commit and support government, community and private sector interests in watershed development. To not do so would be to leave our operations, productivity and sustain ability to considerable risk.</p> <p>NNP1PC has prepared a watershed management strategy that includes the development of a Watershed Management Plan that has seven guiding objectives:</p> <ol style="list-style-type: none"> <li>1. Maintaining the flows of the water resources of the Nam Ngiep;</li> <li>2. Maintaining diversity and productivity of aquatic resources;</li> <li>3. Maintaining vegetation cover and soils;</li> <li>4. Maintaining diversity and productivity of the terrestrial systems of the watershed.</li> <li>5. Maintaining equitable use or water and natural resources with appropriate benefit sharing with hydropower and other development sectors with districts and communities in the watershed;</li> <li>6. Reducing risks and impacts of water related disasters – especially floods and droughts;</li> <li>7. Establishing a fully functional and representative Watershed Management Committee (WMC) for the Nam Ngiep.</li> </ol> <p>The development and implementation of the Watershed Management Plan is cross sectorial within NNP1PC and externally. A Watershed Management Specialist and team have been formed and are currently liaising with government to establish the WMC, with the intention of achieving the seven objectives. The WMC will be the vehicle through which aspects the NNP1PC</p>

						CA related commitments will be passed on to GOL for implementation.
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No.	Reference Document	Issue	Status	IAP Comments and Recommendations this Site Visit Report (May 2014)	Level of Concern	NNP1PC Comment
E3	EIA Nam Ngiep 1 Hydropower Project (2012)	Information on fisheries in the Nam Ngiep is minimal. There are conflicting reports on how important fisheries are to the livelihood of project impacted villages.	The quantity and diversity of fisheries in the Nam Ngiep is not adequately documented.	<ul style="list-style-type: none"> <li>IAP is satisfied with the survey work, baseline data reports, and conclusions that indigenous species will continue to flourish above the proposed dam site.</li> <li>The IAP also concurs with NNP1PC plans for future fisheries monitoring.</li> </ul>	<b>Closed</b>	<b>Closed</b>
<p><b>* Level of Concern:</b></p> <ul style="list-style-type: none"> <li><b>Low - action recommended within 6 months</b></li> <li><b>Medium - action recommended within 1-2 months</b></li> <li><b>High - immediate action recommended</b></li> </ul>						

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E4	ESIA NNP1, December 2012, Site Visit 14-19 Jan. 2013 and Site Visit 17-24 Nov. 2013	Water quality in the Nam Ngiep River is being affected by upstream activities (apparently a mining activity is discharging untreated wastewaters and affecting the 'color' of the river water). At the junction of Nam Ngiep and Nam Youak, it is clear to the eye that the Nam Ngiep is receiving excessive sediment discharge	There is no information in the EIA documents on this issue. Sediment loads, conductivity, color, and mineral levels should be monitored in the Nam Ngiep River as baseline investigation.	IAP is satisfied with proposed water sampling program and awaiting preliminary findings. IAP also was informed that ERM is revising the environmental flow assessment.	<b>Closed</b>	<b>Closed</b>
<p><b>* Level of Concern:</b></p> <ul style="list-style-type: none"> <li><b>Low - action recommended within 6 months</b></li> <li><b>Medium - action recommended within 1-2 months</b></li> <li><b>High - immediate action recommended</b></li> </ul>						

No.	Reference Document	Issue	Status	IAP Comments and Recommendations this Site Visit Report (May 2014)	Level of Concern	NNP1PC Comment
E5	MONRE, EIA Decree 2010, and Environmental Protection Law 2012 requires SEAs for key development sectors	The EIA Decree 2010 and the Revised Environmental Protection Law 2012 require Strategic Environmental Assessment (SEA) of key development sectors. SEA has yet to be introduced to the Ministry of Energy and Mines, and in particular to the Hydropower Sector.	There is no Strategic Environmental Study of the hydropower sector in Lao PDR. Such an SEA would assess the impacts of existing and proposed future hydropower projects on NBCAs, protected forests, water resources and other related environmental assets of Lao PDR and permit alternative power development plans to be analyzed.	<p>The IAP recommends that an integrated land development map and study be prepared for the three affected provinces that would permit MONRE and development agencies to discuss resource use policies and sustainability objectives. This issue has now been simplified by the GoL creating Xaysomboun Province, which overlays the Nam Ngiep watershed boundary.</p> <p>During the 3<sup>rd</sup> IAP site visit, ESMP, MONRE, and NNP1PC committed resources to organize, manage, and develop an ISP program for the new province during 2014-2015. The output will be an integrated land use plan for the province which will clarify future development issues.</p>	<b>Closed</b>	<b>Closed</b>
<p><b>* Level of Concern:</b></p> <ul style="list-style-type: none"> <li>• <b>Low - action recommended within 6 months</b></li> <li>• <b>Medium - action recommended within 1-2 months</b></li> <li>• <b>High - immediate action recommended</b></li> </ul>						

No.	Reference Document	Issue	Status	IAP Comments and Recommendations	Level of Concern	NNP1 Comment
E6	Site visit 7-12 Jan. 2013, and Site Visit 17-24 Nov. 2013	The Developer is expected to contribute to capacity building of MONRE and assist in establishing the EMU staffed by provincial and district representatives from project affected areas	<p>IAP discussions with provincial and district officials indicate that the role and responsibilities of the EMU are unclear due to (1) new departments and duties in MoNRE; and, (2) the project has impacts in three provinces and numerous districts.</p> <p>Note that no meetings were held with the EMU during the IAP Nov. 2013 site visit.</p> <p>IAP pursued this topic with MONRE during May 2014 site visit. Firstly, agreement to form a new province, Xaysomboun, has simplified establishment of the EMU and improved prospects for a workable organization. Secondly, EMSP, MONRE, has agreed to organize, manage, and train all project affected district and provincial officers of the new province in an ISP program (output is a land use map for planning purposes and building environmental awareness). Thirdly, NNP1 has agreed to provide financial support of US\$50,000 for the year-long ISP training program.</p>	<ul style="list-style-type: none"> <li>The EMU should include the same district and provincial officers and MONRE representatives who will be involved and trained in the ISP program.</li> <li>The IAP recommends that an official letter signed by the Governor of Xaysomboun Province be sent to MONRE to request the ISP program for the new province.</li> </ul>	High	<p>NNP1 is currently formalizing the establishment of the EMU with GOL. Current issues relate to operational rules, EMU function, budgets and staffing requirements. It is anticipated that EMU establishment (Bolikhmxai and Xaysomboun) will be concluded by September 2014 in time with construction.</p> <p>Regarding the ISP, NNP1PC offer the following arrangements which are being undertaken:</p> <ol style="list-style-type: none"> <li>The EMO has set aside \$50k to assist in such a process.</li> <li>ISP development is being lead by the Department of Environment Quality Protection (DEQP) MONRE, under the guidance of CTA Mr Peter Jensen</li> <li>On the 25th June NNP1PC EMO met with the CTA to discuss ISP options for Xaysomboun - as part of NNP1 watershed planning. The ISP is being piloted in Ouydomxai, Champasak, Luang Nam Ta, Xayaboury, Savanaket and Luang Prabang Provinces.</li> <li>The ISPs are initiated by request from the province, at which time support is provided by DEQP. Xaysomboun has not yet made such a request. ISP requires Provincial request to commence the process.</li> <li>To progress things, the CTA advised that DEPQ would hold workshops with current enrolled provinces and invite Xaysomboun to attend. This would potentially raise awareness and interest in ISP development.</li> <li>NNP1PC is waiting now waiting for CTA advice.</li> <li>At the time Xaysomboun and Bolikhmxai volunteer for ISP, then NNP1PC would need to evaluate what aspects it could support. Please note that while \$50k has been set aside, it is not at all committed in full or in part. What aspects of ISP will be supported depends on variables not yet known.</li> </ol>

						viii. For our input to progress the discussion; at both the 1st NNP1PC/ GOL Steering Committee meeting and the meeting with Minister Noulane (MONRE) NNP1 raised the importance of integrated planning for the province (formally), as NNP1 Project is the bottom end user of the watershed. NNP1PC did not specifically refer to the ISP program of DEQP.
<p><b>* Level of Concern:</b></p> <ul style="list-style-type: none"> <li>• <b>Low - action recommended within 6 months</b></li> <li>• <b>Medium - action recommended within 1-2 months</b></li> <li>• <b>High - immediate action recommended</b></li> </ul>						

No.	Reference Document	Issue	Status	IAP Comments and Recommendations this Site Visit Report (May 2014)	Level of Concern	NNP1PC Comment
E7	Site Visit 4-11 May 2014, Annex C to the CA	Villagers of Hatxaikham have complained during this IAP site visit that “construction crews of the Dam Access Road Contractor have polluted their water supply by using the river for their toilet needs and disposal of trash”. Their children are coming down with diarrhea and dysentery due to the contaminated water”. The CA Annex C Social and Environmental Commitments requires NNP1PC to provide safe water supply for all communities affected by Project activities.	Construction camps of the Dam Access Road Contractor have adequate toilet facilities for workers and temporary solid wastes collection and storage facilities. However work areas along the temporary road to the temporary bridge and across the river, which work areas are less than a kilometer from Ban Hatxaikham, do not have such facilities.	<p>The IAP carried out a water sampling activity of all three water sources, stored water, and boiled water samples to test for turbidity, fecal coliform organisms, and total coliforms. Samples were iced, kept in dark bottles, and sent to Earth Systems Labs for analysis. Results will be available for analysis later in the month.</p> <p>It is recommended that a simple rural water supply system be introduced to Hatxaikham villagers to improve the quality of their water supply. Villagers generally display appropriate hygienic habits, but children are exposed to untreated (and possibly contaminated) drinking water. Water quality test results will clarify the level of contamination.</p>	Medium	<p>In June 2014 EMO initiated water quality testing of the nearby Nam Ngiep river B Hatsaykham, village water collection points and village storage facilities. Testing was undertaken against GOL Drinking Water Quality Standards. Water was analyzed in an ALS certified lab in Australia. Results identified the water sampled from the Ban Hatsaykham drinking water sources was found to generally good quality apart from high turbidity, oil and grease concentration and coliform populations.</p> <p><b>Response</b></p> <p>SMO working with GOL (Nam Sa At) installed three deep bores with hand pumps within the village. The water was tested and met GOL Drinking Water Quality Standards. Through consultation with villagers it was identified that water was being contaminated by methods used by villagers to transfer bore well water to homes. The Nam Sa At undertook further capacity building to introduce methods of hygiene for village household water storage and use. Water quality testing of the bore well water is being carried out by NNP1PC periodically.</p>

No.	Reference Document	Issue	Status	IAP Comments and Recommendations this Site Visit Report (May 2014)	Level of Concern	NNP1PC Comment
E8	Site Specific ESMMP for T12 Road, Site Visit 4-11 May 2014	Site- Environmental Social Monitoring & Management Plans are required of all Contractors for project construction works. The site specific ESMMP produced by Obayashi Corporation for the Dam Access Road construction works contain only general guidelines for managing environmental issues and do not contain site-specific details.	<p>The ESMMP for the access road to the dam site produced by Obayashi Corporation does not contain the site-specific plans and details to describe the protective and corrective measures to be used by the Head Contractor to protect against environmental impacts along each section of the access road to the dam site. Instead the ESMMP contains only general guidelines which will be used for managing environmental issues, such as erosion, sediment control, waste management, and worker safety and awareness.</p> <p>Construction is underway and protective measures are to be incorporated into construction plans, such as containment of spoil disposal areas, erosion control measures, implementation of solid waste and septic waste system management systems, etc. However such systems are only partially completed during this period because the Contractor is awaiting the rainy season to determine how the runoff will flow, how severe the flooding will be at various points, and where the erosion will occur so that during the next dry season he can correct and strengthen the site specific mitigation measures which are currently only "temporarily" constructed.</p>	<p>The IAP believes that the Contractor is knowledgeable and is aware of what environmental protective measures are needed to offset impacts and minimize environmental effects of construction activities. However, his focus is on completing the access road work as quickly as possible before the onset of the wet season. Sections of the road are only temporary therefore the focus appears to be that the protective works can wait until the road work is completed.</p> <p>The IAP recommends the following actions:</p> <ol style="list-style-type: none"> <li>The Contractor should hire an Environmental Manager for the Access Road Contract</li> <li>A team of inspectors is needed to ensure implementation of the ESMMP-CP. The EMO needs additional field staff to monitor and enforce contract commitments.</li> <li>The monthly visits of Earth Systems Lao to audit the Contractor are inadequate to cover daily supervision work.</li> <li>Strict attention to management of construction, vehicle and sanitation wastes are needed all along the access road construction sites, not</li> </ol>	Medium	<ul style="list-style-type: none"> <li>NN NNP1PC has been working collaboratively with the GoL to develop a biodiversity offset program. GoL has stated their preference to establish a biodiversity offset site in the watershed of the Nam Ngiep River. NNP1PC will explore additional biodiversity offset sites including trialing using funds allocated to the EPF (\$990K) to fund offset programs.</li> <li>Dr. Kottelat has confirmed species within the NNP1 project area and NNP1PC is currently preparing a Fisheries Management Program (FMP). The FMP will include the development of baseline pre-operation fishery status. Monitoring is expected to begin before the conclusion of the 2014 wet season.</li> <li>NNP1PC acknowledges the request to support the protected area network. NNP1PC will work with GoL to provide a workable solution that trial the use of EPF funds to deliver offset outcomes. This may include offset activities in protected areas if it is identified that this is appropriate.</li> <li>NNP1PC has established logging control capacity building initiatives with in partnership with GoL in Houay Ngua Provincial Protected Area.</li> <li>NNP1PC agrees with the recommendations of the IAP listed under 'IAP Comments and Recommendations this Site Visit Report (May 2014)'. However, the comments made under 'Status' and 'Previous Comments' and 'Recommendations' do not entirely reflect the approach to environmental mitigations by the Civil Contractor as was pointed out to the IAP at the wrap-up meeting on May 10, 2014.</li> </ul>



				<p>v. just at the work camps; and Implement guidelines and recommendations shown in the report Access Road Rehabilitation – Environmental Audit and Corrective Action Plan Report, February 2014.</p>		<ul style="list-style-type: none"> <li>• Prior to the IAP Visit No.3. it is a matter of record that ADB sent two missions to the Project (in September 2013 and February 2014) that included their Australian consultant Matt Corbett, an expert in erosion, sedimentation and drainage measures related to road construction. Representatives of NNP1PC and the Civil Contractor accompanied him on tours of the access road construction as was being carried out at the time of the second visit. Aware that the Civil Contractor had initially and previously been reluctant to carry out the necessary environmental measures recommended by NNP1PC, a pro-active approach was adopted and NNP1PC recorded all ADB recommendations made during the February 2014 visit of the ADB expert. The Civil Contractor was then instructed, before the ADB visit report was issued, to fulfil all the environmental requirements as recommended by the expert. NNP1PC was satisfied that the Civil Contractor carried out the necessary work outlined in the <i>Access Road Rehabilitation – Environmental Audit and Corrective Action Plan Report, February 2014</i>. This should not be considered as a ‘wait and see’ approach. Observations following rainfall to check the sufficiency of measures taken are an intrinsic part of the review process.</li> <li>• The Civil Contractor has demonstrated flexibility and a positive approach to mitigations, as his understanding of quality measure requirements by Lenders has also improved. In addition the Civil Contractor, working with NNP1PC (EMO, SMO and TD) has also made significant steps to improve the content and structure of the SS ESMMPs, and importantly, self-monitoring. The Civil Contractor has since</li> </ul>
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						employed the services of permanent specialist environmental staff with expatriate management who are now the focal point of requests from NNP1PC.
<b>* Level of Concern</b> <ul style="list-style-type: none"> <li>• Low - action recommended within 6 months</li> <li>• Medium - action recommended within 1-2 months</li> <li>• High - immediate action recommended</li> </ul>						

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No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of Concern	NNP1PC Comment
B1	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	Options for implementing a biodiversity offset	<ul style="list-style-type: none"> <li>ERM offset options review</li> <li>Phou Khao Khouay NPA has high biodiversity value but weak management</li> <li>Ongoing ERM survey</li> <li>ERM study</li> </ul>	<ul style="list-style-type: none"> <li>The IAP recommends that the ERM team review a diversity of biodiversity offset options.</li> <li>The IAP recommends additional studies as follows: <ul style="list-style-type: none"> <li>Studies on fish species and populations</li> <li>Data on species of NTFPs</li> </ul> </li> <li>The IAP recommends that the Developer invest in strengthening protection and management in national protected areas (preferably multiple sites), specifically in Phou Khao Khouay NPA, by supporting NGO work; and, explore options for a cumulative biodiversity offset fund (with ADB and GOL and other donors).</li> <li>To implement the biodiversity offset, simple institutional mechanisms should be operated through MONRE or the Environment Protection Fund. Mechanisms should reflect lessons learned and criteria from other funds.</li> </ul>	High	<ul style="list-style-type: none"> <li>NNP1 has, as part of the 22kV IEE, formulated a pre-EDL line condition assessment of the Houay Ngua PPA.</li> <li>The Houay Ngoua PPA management plan is under the revision to include the forest classification program, and forest condition will be followed during the extension phase. The NNP1PC is acknowledged the delay and in the process of procuring the satellite image for Houay Ngoua PPA</li> <li>Should PKK be chosen as a Biodiversity Offsets Area, GOL institutional arrangements will also be improved with support from NNP1PC.</li> <li>NNP1 team is discussing with EPF on the possibility to channel fund (\$990,000) to EPF. Alternatively, the fund will be transferred annually to the Community and Biodiversity Investment (CBI) and Water Resource windows to ensure that the fund is contributed to the biodiversity conservation and water sources protection. Further discussion will be followed with the WB team in September to ensure the capacity development is provided to EPF team</li> <li>EMO will work with MONRE on planning and implementation of biodiversity offset. Institutional mechanism development are now part of the work activities of NNP1 in consultation with GOL counterparts. Lessons from similar initiatives in Lao PDR will be fully considered.</li> </ul>

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of Concern	NNP1PC Comment
B2	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	<ul style="list-style-type: none"> <li>Critical habitat along the dam access road</li> <li>Activities along the dam access road need to be managed to reduce impacts</li> </ul>	<ul style="list-style-type: none"> <li>Concern regarding the status of the Houay Ngoua provincial protected area (PPA) and compliance with ADB safeguards; area is badly degraded</li> <li>An alternative route for the dam access road is prone to flooding</li> <li>Only essential clearing should take place along the access road in the Houay Ngoua PPA</li> </ul>	<ul style="list-style-type: none"> <li>Houay Ngoua badly degraded due to EdL clearance for power lines. Areas excised for agriculture.</li> <li>The provincial governor's proclamation of the Houay Ngoua reserve should be reviewed to ascertain exact status; provincial protected area or not. Houay Ngoua reserve should be reviewed to ascertain exact status; provincial protected area or not.</li> </ul>	Closed	Closed
<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>						

No.	Reference Document	Issue	Status	recommendations	Concern	
B3	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	Activities along the dam access road need to be managed to reduce impacts	<ul style="list-style-type: none"> <li>Degradation and logging along access road due to EdL village electrification program</li> <li>NNP1 supporting Provincial and District Forest Office with checkpoint and funding for patrols.</li> </ul>	<p>The IAP recommends the following:</p> <ul style="list-style-type: none"> <li>That NNP1PC should minimize environmental and social impacts by liaising with the district forest office to (i) limit clearing; and, (ii) reforest using native species.</li> <li>Check points and spot checks should be arranged for vehicles and workers to prevent illegal removal of logs, NTFPs, wildlife</li> <li>Monitor effectiveness of Houay Ngua checkpoint.</li> <li>Work with provincial authorities to limit forest clearance along new dam access roads.</li> </ul>	High	<p>Houay Ngua logging management programs have been implemented by NNP1PC. This includes:</p> <p>Three components:</p> <ol style="list-style-type: none"> <li>vehicle checking</li> <li>Awareness program</li> <li>Forestry survey program</li> </ol> <p>All of the above are implementing.</p> <ul style="list-style-type: none"> <li>Weekly monitoring and consultation to improve HN PPA forest management,</li> <li>EMO/TD is working with PONRE and local authority monitor closely to preserved importance tree,</li> </ul>
B4	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	Additional studies required on fish species and populations	<ul style="list-style-type: none"> <li>Fish surveys have been undertaken</li> <li>NNP1PC is supporting additional fish surveys beyond watershed</li> <li>NNP1PC is reviewing fish captive breeding</li> <li>Fish surveys undertaken – show dam will have no impact on threatened species.</li> </ul>	IAP recommends more information be provided for the rationale for fish captive breeding scheme.	Low	Captive breeding will only occur as a final consideration. NNP1PC will undertake a feasibility study and inform the IAP prior to the commencement of any such program. A phased approach to species protection has been adopted and accepted by the IAP and ADB, with captive breeding included, subject to success or otherwise of practical watershed management initiatives .
B5	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	Poor knowledge of wildlife populations and distribution in project area	<ul style="list-style-type: none"> <li>Additional surveys are required of wildlife in Nam Ngiep watershed</li> <li>Information on wildlife in watershed (ERM report) largely based on literature surveys</li> <li>Brief primate surveys have been conducted; gibbons at low density. Information available suggests wildlife impoverished in watershed and threatened by future developments</li> </ul>	<p>The IAP <b>requires</b> the following:</p> <ul style="list-style-type: none"> <li>More detailed surveys of wildlife in lower watershed as input to watershed management plan; and,</li> <li>Field surveys to provide better information on status and distribution of wildlife prior to any decisions on watershed as candidate area for biodiversity offset.</li> </ul>	High	NNP1PC will cooperate with MONRE to establishment of wildlife survey for baseline biodiversity assessment update complete before June 2015,
<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>						

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B6	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	<ul style="list-style-type: none"> <li>Data on NTFPs collected</li> <li>Quantities of NTFPs to be collected that are controlled annually by the district where "quotas" are issued to the villages</li> </ul>	<ul style="list-style-type: none"> <li>ERM and socio-economic surveys are on-going.</li> </ul>	The Developer should work with PAP to test the NTFP quota system among villages based on a "sustainable yield" study in the designated areas of natural forest used to permit villages to continue earning disposable income from collection and sale of NTFPs.	Medium	The plan will include in watershed management program and will cooperated with SMO
B7	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	<ul style="list-style-type: none"> <li>Wildlife capture and translocation proposed during construction phase</li> <li>Options for reallocation of wildlife translocation funds</li> </ul>	Wildlife translocation plans on hold	<ul style="list-style-type: none"> <li>The Developer should look at lessons learned from Nam Theun 2 and adapt plans as needed.</li> <li>If translocation is not cost effective funds should be reallocated to other activities (e.g., wildlife surveys and monitoring)</li> </ul>	Closed	Closed
B8	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	Workers and construction traffic removing forest resources, illegal logs and wildlife	Prohibition of illegal harvesting and trade is to be covered in the Developer's Code of Conduct	The Developer should require a zero tolerance policy on illegal logging, hunting and wildlife trade by Contractor employees	High	An employee code of conduct has been applied to all NNP1PC and contractor staff. NNP1PC will enforce a zero-tolerance policy to any breach, which includes wildlife hunting and illegal logging.
B9	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	Introduction of potentially invasive species as part of reforestation, agriculture schemes	<ul style="list-style-type: none"> <li>Frogs to be raised by PAP should NOT be exotic species</li> <li>Plans for aquaculture in reservoir to improve livelihoods</li> </ul>	<ul style="list-style-type: none"> <li>Need careful review to ensure no introduction of exotic species with likely negative impact on native fish fauna.</li> <li>The Developer should check to make sure that the proposed species to be introduced are NOT potentially invasive</li> </ul>	low	The development of the offset and biodiversity action plans, as well as watershed management initiatives that will include provisions to manage invasive species (plants and animals).
B10	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	NTFPs used by PAP for food security and cash income	PAP at all impacted villages are highly dependent on NTFPs	Protect sufficient natural forest within and adjacent to the resettlement sites for villagers to harvest NTFPs or provide alternative sources of income	low	EMO will work with SMO to include provisions for establishment and management of village forests, particularly those of Houay Soup Resettlement Area. The IEE already contains provisions for forests and river protection.
<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>						

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of Concern	NNP1PC Comment
B11	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	Awareness of the importance of natural forests to the quality of life of PAP	PAP have a low awareness of the importance of the quality of forest to their lives and livelihood	Raise awareness among PAP of the value of natural forests for protecting water quality and other ecosystem services	Low	Awareness program at 3 villages Nonsomboun, Thaheua, Hat Negun. Refer also to B3.
B12	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	<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 3 project provinces have limited capacity and resources</li> <li>Hmong villagers have good local knowledge</li> </ul>	Reservoir will give access to new areas above water line. <b>Recommendations:</b> <ul style="list-style-type: none"> <li>Additional wildlife surveys should be undertaken in the upper watershed forests during construction to better define protection and monitoring needs</li> <li>Hmong villagers should be hired to assist with monitoring biodiversity within the resettlement areas and surrounding forests</li> <li>Strengthen capacity provincial EMUs for monitoring biodiversity/ environmental impacts.</li> </ul>	Medium	<ul style="list-style-type: none"> <li>The baseline survey will commence in 2014 and update the biodiversity baseline species and habitat list of the project affected area,</li> <li>NNP1PC will employ Hmong people as a priority but based on capacity,</li> <li>Budget for capacity building for GOL are included in Annex C,</li> </ul>
B13	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	Realistic baselines for biodiversity monitoring	<ul style="list-style-type: none"> <li>Continued degradation of Houay Ngoua and other watershed forests</li> <li>Out of date faunal information for watershed – need updating based on field surveys</li> </ul>	<ul style="list-style-type: none"> <li>Need accurate status of forest conditions at start of construction phase</li> <li>The IAP recommends that NNP1PC obtain satellite imagery and accurately map the remaining forest areas for Houay Ngoua and other watershed forests</li> </ul>	High	ERM has provided the satellite imagery and assessment undertaken by remote sensing for all forested areas. This will be updated on a regular basis to track forest health. The current condition of forest health is described in the project EIA.
B14	Site visits: 7-12 January 2013 17-24 November 2013 4-11 May 2014	Suitability of Watershed as Biodiversity Offset	<ul style="list-style-type: none"> <li>Developer and MONRE propose to manage watershed for biodiversity offset but area has large number of conflicting developments.</li> <li>Current proposal unlikely to lead to credible offset with permanent biodiversity outcomes</li> </ul>	<ul style="list-style-type: none"> <li>Delay decision on Biodiversity Offset to await further field data from the watershed and continue to review alternative options</li> <li>Recommend separating commitments to MONRE for investment in watershed from need to establish credible biodiversity offset.</li> </ul>	High	<ul style="list-style-type: none"> <li>Noted and implemented.</li> <li>Noted and implemented.</li> </ul>
<b>* Level of Concern:</b> <ul style="list-style-type: none"> <li>Low - action recommended within 6 months</li> <li>Medium - action recommended within 1-2 months</li> <li>High - immediate action recommended.</li> </ul>						

No.	Reference Document	Issue	Status	IAP comments and recommendations	Level of Concern	NNP1 Comment
B15	Site visit 4-11 May 2014	Appropriate and integrated watershed management activities	The watershed now falls mainly within the boundaries of the new province of Xaysomboun which lacks an integrated spatial plan	The IAP recommends that NNP1PC work with MONRE and environmental offices in Xaysomboun Province to develop an integrated spatial plan for province to guide development activities and watershed management investments	High	Refer to E6
B16	Site visit 4-11 May 2014	Construction activities and increased access will lead to further habitat loss in watershed and along ROW for transmission lines	Villagers already clearing forests around dam site to expand agricultural activities	Develop guidelines and mitigation plans to minimise habitat loss due to construction activities and for restoration and rehabilitation of impacted areas.  Pay special attention to likely impact of ROWs transmission lines on elephant populations at Ban Na, Phou Khao Khouay National Protected Area (PKK)	High	Plan is included in ESMMP-CP, bio offset , watershed plans. The Contractor is also required to complete and implement Site Specific Environmental Mitigations and Monitoring Plans.  From field survey undertaken at at Ban Na in June 2014, elephants have not been sighted since 2010. The TL of 230 KV alignment will avoid the Ban Na ECZ and PKK NPA.
B17	Site visit 4-11 May 2014	Working with MONRE to manage watershed management activities	Current budget request from MONRE focuses mainly on vehicles and salary supplements, – need to refocus on actions	Budgets allocated to MONRE should be based on agreed, targeted and monitorable activities for watershed management.	High	Noted, and this will be incorporated into the watershed management plan currently being prepared by EMO.
B18	Site visit 4-11 May 2014	Capacity of environmental units at MONRE to manage watershed management activities	MONRE has very limited capacity at all levels (especially at province and district levels).	Developer's EMO to work with MONRE to seek capacity and mentoring opportunities e.g., involvement of provincial officers in Xaysomboun ISP	High	Noted. This will form part of the requirements to implement objectives / tasks of watershed management and biodiversity offsets initiatives. ADB and IAP will review work plans and budgets prior to fund handover to GOL.
B19	Site visit 4-11 May 2014	Alternative options for credible, realistic and manageable biodiversity offsets	Watershed area not suitable for biodiversity offset because of conflicting development issues. Continue to review options other than watershed	Follow up with Environmental Protection Fund (EPF) to assess suitability for biodiversity offset window, targeting funds to proposals with monitorable biodiversity outcomes.	High	The monitoring of outcomes from EPF programs will form part of the agreements between GOL and NNP1PC. Where monitoring identifies weakness the EPF institutional and technical arrangements will be strengthened.



						<p>NNP1 team is discussing with EPF on the possibility to channel fund (\$990,000) to EPF. Alternatively, the fund will be transferred annually to the Community and Biodiversity Investment (CBI) and Water Resource windows to ensure that the fund is contributed to the biodiversity conservation and water sources protection. Further discussion will be followed with the WB team in September to ensure the capacity development is provided to EPF team</p>
B20	Site visit 4-11 May 2014	Capacity of EMO at NNP1	Social department effectively staffed but environmental office currently limited manpower and skills base.	Recommend recruiting additional staff, especially with appropriate biodiversity planning, management and mitigation skills	High	NNP1PC has since May 2014 recruited 10 additional staff, including watershed management, biodiversity management, GIS and environmental monitoring specialist. Further recruitment is planned.
Formerly B9	Site visit, 14-19 January 2013 Site visit, 17-24 November 2013	Movement of students and teachers to the Thong Nam Pha resettlement site	Resettlement of PAP at 2UR is not expected to take place.		Closed	Closed
Formerly B10	Site visit, 14-19 January 2013 Site visit, 17-24 November 2013	Quality of translation for the environment team	Team translator was excellent and familiar with environmental terms		Closed	Closed
<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>						