

Environmental and Social Monitoring Report

Project Number: 41924-014

February 2016

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

Lenders' Technical Advisor Quarterly Implementation Progress Report No. 5 And Nam Ngiep 1 Power Company Limited Response to the Report

Prepared by AF-Consult Hydropower Plants for Nam Ngiep 1 Power Company Limited and the Asian Development Bank.

This report is a document of the lenders' technical advisor. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature. Your attention is directed to the "Terms of Use" section of this website.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.



SUMITOMO MITSUI BANKING CORPORATION
as Intercreditor Agent
pursuant to the Common Terms Agreement

Nam Ngiep 1 Hydropower Project

Quarterly
Implementation Progress Report No. 5
Environmental & Social Aspects

NNP1/Ph.2/011

February 2016

AF-Consult
Hydropower Plants





Table of Contents

	<u>Page</u>
Foreword	1
1 Executive Summary	1-1
1.1 E&S Organisations	1-1
1.1.1 EMO	1-1
1.1.2 SMO	1-1
1.1.3 EMO/SMO Collaboration.....	1-2
1.1.4 GOL's Agencies.....	1-2
1.1.5 Contractors' Organisations	1-2
1.2 Site Specific Environmental & Social Aspects.....	1-3
1.3 Environmental Plans.....	1-4
1.4 Social Issues	1-5
1.4.1 Status of Activities	1-5
1.4.2 Social Management Action Plan Implementation.....	1-6
1.4.3 Compliance to Labour Standards	1-7
1.4.4 ADB Project DMF Target Outputs on Social Safeguards	1-7
1.5 Budget Monitoring	1-7
1.6 Concluding Remarks	1-7
2 Environmental & Social Documents Received	2-9
2.1 Documents from ADB	2-9
2.2 Documents and Information from the Project Company.....	2-9
2.3 Information from the Main Contractors.....	2-9
3 LTA Services on Environmental / Social Aspects in the Reporting Period.....	3-1
3.1 Home Office Work	3-1
3.2 Site Visit.....	3-1
3.3 Planning for the Next Quarter	3-4
4 NNP1PC E&S Organisations.....	4-1
4.1 EMO	4-1
4.1.1 General.....	4-1
4.1.2 Staffing	4-1
4.1.3 LTA's Recommendations	4-2
4.2 SMO.....	4-2
4.3 EMO/SMO Collaboration	4-4



5	GOL Agencies & Local Authorities.....	5-5
5.1	PRLRC, Xaysomboun and Bolikhamxay RMUs and District Authorities.....	5-5
5.2	MONRE, EMU.....	5-5
5.3	LTA's Recommendations	5-6
6	Contractors' E/S Organisations.....	6-7
6.1	Civil Contractor.....	6-7
6.1.1	Contractor's Organisation.....	6-7
6.1.2	LTA's Recommendations	6-7
6.2	Other Contractors	6-8
6.2.1	LTA's Recommendations	6-8
7	Site Specific Environmental & Social Aspects.....	7-9
7.1	Health and Safety Issues	7-9
7.1.1	Accidents Occurred and Remedial Measures	7-9
7.1.2	Emergency Action Plan.....	7-9
7.1.3	Medical and Health Facilities	7-11
7.2	Civil Contractor Environmental Compliance Monitoring	7-11
7.2.1	Monitoring Program.....	7-11
7.2.2	Inspection Sites	7-12
7.3	Reported Inspections / Non-Compliances	7-13
7.4	Findings from the Site Visit.....	7-14
7.4.1	Workers' Camp.....	7-14
7.4.2	Wastewater Treatment.....	7-15
7.4.3	Waste management.....	7-17
7.4.4	Slope stability.....	7-18
7.4.5	Soil disposal areas	7-18
7.4.6	Quarry	7-18
7.4.7	Crushing Plant.....	7-19
7.4.8	Final recovery plan.....	7-19
7.4.9	LTA's Recommendations.....	7-19
7.5	Environmental and Social Management and Monitoring Program (ESMMP).....	7-20
7.5.1	General.....	7-20
7.6	Water Quality Monitoring.....	7-21
8	Environmental Plans	8-26
8.1	Biodiversity Offset Planning and Implementation.....	8-26
8.1.1	Scope and Progress.....	8-26



	8.1.2	LTA's Recommendations	8-27
8.2		Watershed Management Planning	8-27
	8.2.1	Scope and Progress	8-27
	8.2.2	LTA's Recommendations	8-28
8.3		Houay Soup Resettlement Area – Environmental Issues	8-28
	8.3.1	LTA's Recommendations	8-29
8.4		Other Environmental Issues	8-29
	8.4.1	230 kV Transmission Line	8-29
	8.4.2	Reservoirs Clearing	8-29
		*The deadline has been shifted to March 2016	8-30
	8.4.3	LTA's Recommendations	8-30
9		Social Issues	9-1
	9.1	Status of Activities	9-1
		9.1.1 Resolved Issues	9-2
		9.1.2 Partly Resolved Issues	9-2
		9.1.3 Unresolved Issues	9-5
		9.1.4 LTA's Recommendations	9-5
	9.2	Social Management Action Plan Implementation	9-6
		9.2.1 Tasks Scheduled for Completion on 2014-2015 Period	9-6
		9.2.2 Tasks Scheduled for Completion in 2018 and Overall Completion Rate	9-8
		9.2.3 Result of the Implementation of SMAP and Other Measures	9-8
		9.2.4 LTA Recommendations	9-9
	9.3	Compliance to Labour Standards	9-9
		9.3.1 Core Labour Standards Compliance	9-10
		9.3.2 Compliance to Workers' Protection Provisions of Lao Labour Law	9-11
		9.3.3 LTA Recommendations	9-12
	9.4	ADB Project DMF Target Outputs on Social Safeguards:	9-12
		9.4.1 Attainment Level on Target Outputs	9-12
		9.4.2 LTA Recommendations	9-13
10		Environmental & Social Budget Monitoring	10-14
	10.1	Total Budget, 2015 Expenditures	10-14



Tables

Table 4-1	SMO Staff by End November 2015	4-3
Table 4-2	SMO – Staff by Location	4-4
Table 7-1	Medical Facilities at Site.....	7-11
Table 7-2	Open Non-Compliances by End September 2015.....	7-14
Table 7-3	Waste water quality parameters to be controlled before discharging the water into the environment	7-16
Table 7-4	Analysis frequency	7-16
Table 7-5:	Inventory List of Recycling Companies	7-18
Table 7-6:	SS ESMMPs received between April and June 2015.....	7-21
Table 7-7:	List of Water Quality Monitoring Locations	7-23
Table 8-1	Work Schedule for biomass removal activities.....	8-29
Table 9-1	Status of Outstanding Social Issues as of LTA Mission of December 2015 ..	9-1
Table 9-2	Contractors and Subcontractors Compliance with Health and Safety Standards in 2013 Lao Labor Law	9-3
Table 9-3	Number of Hospital Beds and Physicians Per 1000 Persons in Borikhan District Hospital: December 2015	9-4
Table 9-4	Tasks of Social Management Action Plan with Scheduled Completion within 2014-2015 - Status as of December 2015	9-6
Table 9-5	Tasks of Social Management Action Plan with Scheduled Completion at the End of 2018 - Status as of December 2015.....	9-8
Table 9-6	Compliance to Core Labour Standards of the Contractors - December 2015	9-10
Table 9-7	Distribution of Workers by Country of Origin and Gender - December 2015 .	9-11
Table 9-8	Compliance with Key Workers Protection Provisions of 2013 Lao Labour Law - December 2015	9-12
Table 9-9	Compliance with DMF Social Target Outputs - December 2015.....	9-13
Table 9-10	Distribution of Lao Workers by Place of Origin and Gender - December 2015	9-13
Table 10-1	2015 E&S Expenditures versus Budget.....	10-14

Figures

Figure 4-1	NNP1 E&SM Organisational Chart during the site visit.....	4-1
Figure 4-2	SMO Management Organisation Chart	4-2
Figure 7-1	Accidents Reported by NNP1PC until November 2015.....	7-9
Figure 7-2	Emergency Action Plan in case of accident.....	7-10
Figure 7-3	Emergency Action Plan in case of flood	7-10
Figure 7-4	Location of Owner’s, Obayashi’s and Subcontractors’ Camps 1, 2, 5 and 6	7-12
Figure 7-5	Location of Sub-contractors’ Camp 4.....	7-13
Figure 7-6	Location of the Waste Disposal Area	7-13
Figure 7-7	Layout of filtration pond (taken from the expert’s summarized report).....	7-15



Figure 7-8	Drainage trench	7-17
Figure 7-9	Surface Water Quality Monitoring Locations.....	7-22
Figure 7-10	Results on WQM Program from October 2014 to September 2015	7-24
Figure 7-11	Results on Camp effluent discharge September 2014 to September 2015 ...	7-25

Annexes

Annex 1	Scope of LTA's Services – Phase 2 – Environmental & Social Aspects
Annex 2	Implementation of Social Management Action Plan - Status as of December 2015
Annex 3	Photographs



Foreword

The present Quarterly Implementation Progress Report No. 5 – Environmental & Social Aspects is prepared following the site visit carried out by the LTA between December 6 and 13, 2015.

At the request of the Lenders, the Quarterly Implementation Progress Report has been split in two:

- A report dealing with General & Technical Aspects;
- A separate report dealing with Environmental & Social Aspects – the present report.

The environmental & social team of the LTA which took part in the December 2015 site visit included:

- Ettore Romagnoli, International Environmental Expert
- Raul Cola, International Social Expert

This report has been prepared under the Scope of Services included in the Annex 1, extracted from the LTA on-going contract for Lender's Technical Advisor's Services.



1 Executive Summary

1.1 E&S Organisations

1.1.1 EMO

The staffing of the ESMO in place during the site visit is shown in Figure 4-1.

All the key positions have been filled, including all positions that were still vacant during the previous site visit (namely Watershed Management Team Leader, Biodiversity Management Team Leader and Biomass Clearance Team Leader): Deputy Managing Director (Mr. Prapard Panaram), EMO Manager (Mr. Viengkeo Phetnavongsay), EMO Deputy Manager Watershed Management (Dr. Hendra Winastu), EMO Deputy Manager Inspection/monitoring (Mr. Clifford Massey), EMO Team Leader for Inspection (Ms. Souksakhone Sihalath), EMO Team Leader for Monitoring (Mr. Dohuaer Xiailiavue), EMO Team Leader for Waste Management (Ms. Nantarat McWilliam), Watershed Management Team Leader (Mr. Masisonxay Phanthong), Biodiversity Team Leader (Souvanny Oumnany) and Biomass Clearance Team Leader (Khampaseuth Cheungchingtao).

The EMO staffing is almost completed, the only position that still need to filled is one officer in the Watershed Management team.

Action Required: the LTA insists on the fact that the environmental team shall stay permanently at site to monitor the compliance of the environmental measures: such a significant amount of personnel could be justified only if the environmental officers would spend most of their time at site, moving around the construction area to verify that the environmental management measures are properly applied by the Contractors and their Subcontractors. The LTA would strongly advise to prepare a new organization chart that identifies the staff based at the Project site, in Paksan, in the affected villages and in Vientiane. Moreover, to adequately achieve the compliance monitoring goals the EMO should be provided with proper field testing equipment and with a laboratory with adequate equipment to conduct water quality testing both for chemical and organic parameters, such as total suspended solids, BOD, bacteria - total coliform and faecal coliform.

1.1.2 SMO

The present status of the SMO organisation can be summarised in the following points:

- Key management positions are still not filled (see Figure 4-2) and the Senior Social Manager is still working for the Project on a part time basis.
- Personnel working in the SMO as of end November 2015 is given in the Table 4-1. Apart from the lack of management personnel, the lack of personnel is especially important in the Resettlement & Infrastructure team, and in the Grievance team. The sizeable presence of Hmong personnel is appreciated.
- The allocation of the SMO personnel in the different offices is shown in the Table 4-2. It is expected that the personnel working in the Houay Soup will substantially increase once the construction of the infrastructure and the initial resettlement of the Hatsaykham village will start.



1.1.3 EMO/SMO Collaboration

The collaboration among the two groups was improved. It is recommended to further improve it: NNP1PC shall further improve communications and information sharing within the EMO and between the EMO and SMO, including development and implementation of joint planning and monitoring of issues of common concern, such as water quality, solid waste management and forest management.

1.1.4 GOL's Agencies

NNP1PC is expected to contribute to capacity building of MONRE and to financially assist in establishing an Environmental Management Unit (EMU), which will be staffed by provincial and district officials from project affected areas. The role of the EMU is to monitor implementation of the EMP and to report on its adequacy and effectiveness to MONRE and to NNP1PC.

EMU has started to conduct some monitoring activity, paying visits to the site with the support of EMO (the last one was on November 17), during the meeting the head of the EMU team reported that the following environmental issues of concern have been inspected by the EMU:

- Waste water discharges at the camps sites;
- Dust emissions from the crushing plant;

Other issues of concern raised by EMU during the meeting were hazardous wastes storage and management (EMU would like to have a clearer look on the hazardous waste handling by the local companies and relevant final destination), river water turbidity (the inhabitants of the downstream villages raised some compliant on the issue and requested more monitoring on the issue by the EMU)

Action Required: As already mentioned in the previous quarterly Implementation Progress Report, the LTA fully agrees with the comments already given by the IAP, recommending that the company 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 Theun-Hinboun projects. The agenda shall include the expanded mandate of MONRE to oversee integrated environmental conservation interests of water, forest, and biodiversity protection at the regional and district levels. It is also very important that EMO continues (as is partially already doing) trying to involve as much as possible EMU in the monitoring activities and in the site. Such involvement should include also the activities related to the Biomass Removal Plan.

1.1.5 Contractors' Organisations

The E&S department of Obayashi has been improved by appointing an EHS Manager (Mr. Tayuchi Tomohiro) an Environmental Specialist (Mr. Santi Sayakoummane) and a Safety Engineer (Mr. Lester Palarca) within Obayashi. No testing laboratory facility is available in Obayashi's offices. In the last months OC has also hired an expert to design the waste water treatment system of all the camps.

Action Required: it is an important good news that OC has established an E&S by appointing the relevant specialists and by hiring experts on specific issues, however it shall be underlined that if OC trusts its own experts, they should follow their indication (i.e. the waste water treatment system, even if properly designed, have not been built following the expert's recommendations, in fact jeopardizing the effectiveness of the plants).



NNP1PC should stress the need for Obayashi to regularly check the subcontractors' performance on environmental aspects, particularly wastewater treatment and waste management, and record construction related grievances and social problems of the local population of the near-by villages. This will supplement the EMO and SMO team's tasks to monitor the compliance with established SSESMMPs and manage social concerns.

1.2 Site Specific Environmental & Social Aspects

In general terms it's worth reminding that, since the project is financed by international financing institutions (that adhere to the Equator Principles), the stricter between the international (generally IFC – International Finance Corporation) and the national standards should apply.

During the site inspection the LTA appreciated the NNP1PC EMO efforts in pushing the Contractor to improve the waste water systems and the solid waste management, however some further improvements are still needed.

Referring to the **wastewater treatment** systems the Contractor has involved a qualified wastewater treatment engineer to properly design and dimension the relevant wastewater treatment systems, but in the construction of the systems the Contractor did not follow the design, thus affecting the effectiveness and efficiency of the system. The EMO should push the Contractor to strictly implement the design prepared by the expert on one hand and on the other should check more frequently and in different hours the effluents to verify the treatment systems effectiveness.

Referring to **solid wastes management**, first thing is to reduce the amount of undifferentiated solid wastes by implementing a proper separate collection system that will allow to recycle most of the wastes: paper, aluminium cans, plastic, iron and other metals, used tires, etc. as properly prepared and studied by the EMO. Of course this plan could be further developed improving the quantity and the types of wastes to be recycled. The wastes that cannot be recycled must be collected and disposed in separate areas. Disposing solid wastes in a separate and fenced area is a proper way of managing solid wastes, provided that the preparation and the management of the disposal areas is done according to the indications included in the design prepared by the expert which is in line with international best practices and takes into account all comments already given in the previous LTA's quarterly reports. The landfill design and plan shall also include the design of the progressive filling of the land fill area with the wastes and a plan for its final recovery.

A careful revision of the **slope stability** in the project area should be carried out to identify potential unstable areas and to identify the relevant stabilization measures (if and where needed).

The Contractor shall prepare and submit to NNP1PC the **quarry exploitation and final recovery plan** as soon as possible, as well as the spoil disposal area filling procedures that shall include also a final recovery plan for the area.

A **final recovery plan is necessary for the construction areas** that will be abandoned at a certain point of the construction activities and that are not located below the Full Supply level of the main reservoir or of the re-regulation reservoir.

The Civil Contractor shall consider all the necessary measures to **suppress the dust emission in the crushing plant** to acceptable level as per the existing regulations.

On social aspects, no critical issues in the impact of construction activities on the near-by villages have been reported: aspects of the Social Management Action Plan related to the relations with



local population are well under way; it is certainly important to expedite the resettlement of the Hatsaykham village, to definitely solve all remaining difficulties.

1.3 Environmental Plans

The **Biodiversity Baseline Survey** Report was submitted in draft on 1 August 2015 and the final version was submitted on 30 September 2015. This biodiversity baseline survey report is a key document for the development of the biodiversity management component of the NNP1PC WMP. The NNP1 EMO also progressed with the procurement of a Biodiversity Consultant in August 2015. The work is expected to be in parallel with the NNP1 WMP development and to be coordinated with NNP1 Watershed Consultant.

The NNP1PC is achieving a good progress on the offset site selection process. The NNP1PC, ADB Biodiversity Consultant, and BAC members had a consultation workshop with PONRE of Xaysomboun and Bolikhamxay in regards to the concept of biodiversity offset and the information on proposed offset sites within the Provincial administrative area. It was recommended by BAC members that the ground survey is commenced as an initial assessment of biodiversity values within the proposed sites. The outcomes will serve as a key reference for making decisions on the offset site selection through a consensus building workshop planned in September 2016.

The preparation of the **Watershed Management Plan** started in May 2015 and, according to information received during the previous visit, was supposed to be completed in December 2015, but there have been poor progresses since several inputs (Integrated Spatial Plan of Xaysomboun Province) have been delayed. The new deadline for the WMP delivery has been shifted to September 2016, all the other deadlines are supposed to be shifted accordingly. However, participatory land use planning must wait until Hatsaykham and 2LR PAPs have relocated to Houay Soup.

The preparation of a **Biomass Removal Plan** was finalized in the middle of July 2015 incorporating several reviews and comments from NNP1PC, ADB and MONRE. The plan was approved by MONRE on 29 July 2015 and submitted to ADB on 31 July 2015. NNP1 has appointed the Biomass Clearance Contractor. The clearance schedule is expected to start in the dry season of 2015-16 and be completed before the wet season of 2018. NNP1 will also procure the consultant to develop and monitor ESMMP and SSESMP for the clearance work as well as UXO survey/clearance contractor.

Action Required: in accordance with the recommendations made by the Biodiversity Experts (IAP and ADB) the LTA agrees that: watershed is not suitable for offset, therefore the new offset options to be considered are: Nam Mouane (it represents the priority option, but has some constraints for access), locate the offset area in other provinces (e.g. Khoun Xe Nong Ma, Xe Sap), funding through Environmental Protection Fund and Xaysomboun province parallel options on potential offsets outside watershed (in Xaysomboun or Bolikhamxay provinces) should be explored as well.

In terms of watershed management, it is important at this stage to keep monitoring the water quality upstream of the construction site for at least one full hydrological year, to obtain data about the water quality of the river in natural conditions. It is also important to reduce, simplify and integrate the sub-plans and the consultancies, to include the inputs expected from the Integrated Spatial Planning of the Xaysomboun Province and to include the inputs from the Biodiversity surveys in Watershed Action Plan.



As far as Transmission Line construction is concerned, LTA recommends that EMO monitors that the corridor clearance takes place only inside the corridor designated area.

Referring to the Biomass clearing, some discussions are still necessary to adequately define the areas to be cleared from vegetation taking into account: the need to remove as much as possible all the biomass that is going to be submerged by the water during the reservoir impoundment (to reduce relevant GHG emissions and the decay of the water quality), the constraints related to the accessibility to the clearing sites (it is mandatory to avoid the opening of any new access to the area) and the need of preserving some vegetation in the buffer zone area to reduce the risks of slope instabilities induced by the periodical water level variation in the reservoir.

1.4 Social Issues

1.4.1 Status of Activities

Among the eight critical social issues identified in the LTA Report No. 3, two issues were already resolved at the time of the LTA mission of December 2015. These issues are on the de-gazetting of 648 hectares of public forest to add to the resettlement site and ADB's endorsement of the updated IEE for the site. The Department of Land Management and Administration issued MONRE Decision 4466/2015 for the de-gazetting while ADB's endorsement was made on 12 November 2015.

Among the remaining outstanding issues, four are on resettlement: (i) issuance and approval of the compensation rates, (ii) PAPs decision between the resettlement site and self-resettlement, (iii) issuance of final zone-by-zone cut-off date, and (iv) housing construction at the resettlement area. The first two are only partly resolved. The compensation rates were issued but three concerns withheld PAPs approval: (i) non-compensation of upland area uncultivated for more than three years, (ii) 3 million Kip flat rate compensation of a grave, and (iii) compensation for whole land parcel located above 320 m a.s.l.. While the rate of uncultivated land and graves is set by law, the third concern is raised by PAP who plan to relocate far from the project site and will no longer be able to use their land. The second issue should be fully resolved once the result of the indicative and final choice survey are available. The final choice survey is underway in Zone 3 and 5 but has still to be done in 2LR after the completion of the asset registration..

The last two outstanding issues on resettlement are partly resolved. On the first issue, the NNPIC will still clarify if PRLRC needs to issue a final zone-by-zone cut-off date upon completion of the on-going asset registration. Only the asset registration of Zone 3 and 5 are completed. A cut-off date has been declared and issued earlier in all zones. On the issue of housing construction for resettlement, it can only start after compensation payment. One policy principle of involuntary resettlement safeguards in ADB 2009 Safeguard Policy Statement is to pay compensation and provide other entitlements before physical and economic displacement. Further, ADB has yet to receive and approve the updated Zones 3 and 5 REDP as requisite to fund release which can be used to pay compensation. But ADB has yet to receive and approve the updated Zones 3 and 5 REDP as pre-requisite to the release. Further, information on the number of households who choose to relocate or to accept agricultural land-for-land in the resettlement site is a more accurate basis for decision to construct although for the moment it can also be assumed that all affected households will move into the site. The issuance of final cut-off date and survey of PAPs relocation preference requires the completion of asset registration. In dealing with these outstanding resettlement issues, the LTA supports the plan to send senior local officials to 2LR to meet the PAPs on the need to complete the registration.



On the construction of resettlers' houses, the LTA recommends to strictly keep the new deadlines on the plan submissions to ADB and to beef up internal capacity with outside expertise if needed to complete the documents on time. To increase SMO's efficiency in supporting the resettlement effort, the LTA encourages NNP1PC to carry further the transfer of staff and functions to the project field offices and not centralize all decisions in Vientiane. It also recommends the strengthening of the grievance mechanism in expectation of the number of cases that may arise given the level of dissatisfaction over the compensation.

Two of the unresolved non-resettlement issues pertain to health. One is the difficulty in implementing the PHAP due to the resignation of the Deputy Manager for Social Development and Monitoring. The position is still vacant but the Health Team Leader position is filled up. Another is the inadequate medical facilities and medical staff in the work site and labour camps. Behind this is the uneven compliance of contractors to the health and safety standards set in the Lao Labour Law. Two impacts are the added demand on the local hospitals and the workers' inadvertent use of the publicly funded component of the Lao health system. On these issues, the LTA recommends that the project and its contractors will meet the local health and safety standards as soon as possible and provide support to local hospitals based on the estimated spill-over demand from the camps. Health team also needs to update the PHAP to enhance its timeliness and ease in implementation, monitoring and evaluation. Immediate implementation should follow the update.

1.4.2 Social Management Action Plan Implementation

The SMAP has 64 sub-activities to attain 12 tasks. Six tasks are slated for completion between 2014 and 2015 but none of these is fully completed. The completion rate varies with the highest at 92% and the lowest at 67 percent. The overall completion rate of the six tasks is 80 percent. The six other tasks are to be completed by the end of 2018. But the implementation of their sub-activities started and the current completion rate is 49 percent. For all the 12 tasks, the completion rate is 65 percent

Although the result of SMAP implementation cannot be quantified due to absence of baseline data, the data on the following indicators portray the situation: (i) number of camp followers per 1000 worker (67 camp followers); (ii) annual number of bar fights per 1000 workers (12.3 bar fights), (iii) annual number of thefts inside the camps per 1000 workers (3.5 thefts), (iv) percentage of annual theft cases solved (81.8 percent) (v) annual number of injuries and sickness among workers per 1000 (6.6 injuries and sickness), (vi) annual number of workers brought to the district hospital per 1000 (5.1 cases), (vii) incidence of malaria per 1000 workers (0) and (viii) number of sex workers per 1000 workers (13 women) and (ix) annual number of complaints received by LLU representatives (0)..

The LTA has three recommendations on SMAP implementation. First is to update the SMAP to be more responsive to new and emerging impacts as well as persistent impacts. The update will also enhance the effectiveness of the plan. The second recommendation is to form and convene a Joint PAP-Contractor Committee instead of the Joint PAP-Workers Committee envisioned in the SDP. The contractors are in better position to address the impacts of their operation than the workers. The third is to strengthen the village skills training component in the SMAP and move its schedule of implementation earlier. This will enable the PAP to take advantage of the opportunities provided by the construction period in employment and market.



1.4.3 Compliance to Labour Standards

The contractors' compliance to the core labour standards is high. On the standard of freedom of association and right to collective bargaining, labour representatives are present in 6 of the 8 firms. Unions are also being formed. On the elimination of forced and compulsory labour, no coercive barriers to free movement of workers in the camps and worksites are observed. No worker born after 1997 appeared in the employees' records indicating absence of child labour. The percentage of women (6.3%) and Lao nationals (30.9%) in the workforce can be interpreted as an indication of non-discrimination based on gender and race. But the contractors' compliance to key provisions on the workers' protection provisions in the Lao Labour Law is uneven. The provisions to formulate and disseminate internal regulations are fully complied. But the provisions requiring workers to have work contract and the designation of labour representative are only partly complied.

The LTA recommends the formation and convening of a tripartite monitoring committee. Being representative of the key players, it is expected to be effective and balanced in monitoring and enforcing compliance. It is also recommended that project ascertain the actual age of a Lao worker (Item Nom PK 533) in the Workers List (31 November 2015) submitted by Obayashi Corporation. The list records his age as 10 years old with date of birth on 10 June 2005. Although his picture indicates a much older person, a check will ensure that no child is used for work in the project. .

1.4.4 ADB Project DMF Target Outputs on Social Safeguards

ADB's Design and Monitoring Framework for the project contains six target outputs on social development. Two of these are already attained: employment of at least 500 Lao workers and training of at least 20 local government staff on social policies. Two outputs: implementation of social mitigation measures and 12 female scholars per year are partly done. The issuance of land titles is not yet done. The strengthening of the village skills training component of SMAP is again recommended to enhance the attainment of the target outputs of promoting the employment of local people and purchase of local goods.

1.5 Budget Monitoring

To the LTA's knowledge, the total Environmental & Social Budget for the Project implementation stage is 56'647'047 USD.

The expenditures up to end November 2015 were 7.98 million USD, versus a 2015 budget of 20.11 million USD. A detailed comparison between actual expenditures and 2015 budget is shown in the Table 10-1.

The balance shown in the Table 10-1 reflects the delays occurred along the year. It is especially depressing noting that internal and coordination costs have been relatively close to the budget, while expenditures for real PAPs' benefit were a minor fraction only. It will be essential reversing this trend in the remaining construction period.

1.6 Concluding Remarks

For the environmental monitoring activities at site, some things have been done since the LTA's previous site visit, in terms of wastewater management and something also in terms of waste management, however there are many things to do to improve the environmental performances of the projects. An experienced environmental engineer has been involved to properly design the



wastewater treatment systems and the landfill, but his recommendations have been implemented only partially thus affecting the effectiveness of the measures taken.

The monitoring activity of the EMO should be more constant, proactive and reactive and must adapt monitoring timing and locations to the changing characteristics of the construction site. The EMO team should spend much more time at site and should be provided with proper testing equipment and with a water testing laboratory.

The legal agreements signed by NNP1PC with the Lao Government and the Lenders require that all activities during construction and operations phases meet national and international environmental and social standards. Therefore, the EMO (and the NNP1PC officials dealing with contractual matters) should be firm in requiring the Civil Contractor and its subcontractors, to comply with such commitments. Where there is a non-compliance by Obayashi or its subcontractors, notices will be issued by NNP1PC and further actions shall be taken by NNP1PC against the Civil Contractor and its subcontractors if they are not promptly following the EMO indications referring to Environmental issues identified, discussed and agreed actions. The LTA has the impression that each decision takes a very long time to be translated into action, thus compounding negative effects on the environment.

On social aspects, the choice of the PAPs between relocation to Houay Soup and self-resettlement, and the development of the resettlement site infrastructure are the most pressing requirements. The LTA is very concerned that the delays occurring on these matter may end up in the critical path for the reservoir filling and the commissioning of the Project.



2 Environmental & Social Documents Received

2.1 Documents from ADB

- Monitoring Sheet on Milestones Under ADB Facility Agreements

2.2 Documents and Information from the Project Company

Environmental and social matters are summarised in the monthly reports of NNP1PC. In addition, the following documents were received:

- NNP1PC – “Project Construction Update” (Powerpoint presentation)
- NNP1PC – EMO “Environmental Management” (Powerpoint presentation)
- NNP1PC – “Houay Soup and 2UR Development” (Powerpoint presentation)
- NNP1PC – Quarterly Monitoring Report (QMR) April to June 2015,
- Pacific Aquatech – “Summarized Report of solid waste disposal”
- Pacific Aquatech – “Summarized Report of Wastewater treatment plant”
- NNP1PC - Landfill design
- NNP1PC “Reconnaissance biodiversity surveys in Xaysomboun and Bolikhamxay provinces of candidate offset areas for the Nam Ngiep 1 Hydropower Project” – Draft Report
- NNP1PC “Dam safety review panel – meeting report”
- NNP1PC “Biomass Removal Implementation Plan 2015 to 2018” (Powerpoint presentation)

2.3 Information from the Main Contractors

Information about environmental and social matters related to the activities of the Civil Works Contractor are included in its monthly reports. Nothing related to environmental and social aspects is included in the monthly reports from the other contractors who are now starting to set their camps at site.

The following additional documentation on social aspects were provided by the Civil Works Contractor:

- Workers List (31 November 2015)
- Workers Representative and HSE Officers
- Medical Facilities at Workers Camps
- Summary of Numbers of Injured/ Sick Persons (June-November 2015)
- Summary of Manpower
- Sample Information booklet on Drugs
- Sample Brochure on Sexually Transmitted Diseases



3 LTA Services on Environmental / Social Aspects in the Reporting Period

3.1 Home Office Work

The LTA Environmental and Social Experts reviewed the documents received from the Project Company and from ADB before the site visit.

After the site visits, further documents received during and after the site visit were reviewed, and the present report was prepared.

3.2 Site Visit

The site visit took place from May 4 to May 9 as per the following schedule:

Date	Activities
Senior Environmental Expert	
6 Dec (Sun)	Arrival in Vientiane
7 Dec (Mon)	8.30 Pick up at the Hotel 9.00 – 13.00: Update on construction progress, briefing of ESD activities on progress in implementing IAP, ADB and LTA recommendations. 13.30 -15.30: Meeting on compliance monitoring, ambient environmental monitoring and waste management. 15.30-18.00: Travel to Paksan
8 Dec (Tue)	7.30 – 9.00: Travel to the project site 9.00-12.00: Presentation of general and technical issues by NN1PC 13.00 – 17.00: site visit to: Main Dam site, Crushing plant, right bank dyke area, landfill area, re-regulation dam site
9 Dec (Wed)	8:30-12.30: inspection of the subcontractors' camps (Song-da 1 &2, V&K, RT Tunnelling, Sinohydro) waste water treatment plants 13:30-15:00: site inspection to the batching plants 15:00 – 18:00: presentation of Houay Soup resettlement
10 Dec (Thu)	8:00-12.30: presentation by NNP1 of the Biomass Removal Plan and discussion with EMO, ADB, IAP 14:00 – 15.30: Meeting with the Contractor and with the subcontractors 15:30 – 17:30: Inspection of the wastewater treatment plants of NNP1 base camp and of Obayashi main camp. Inspection of the quarry site.



Date	Activities
11 Dec (Fri)	8:00-10.30: meeting with Bolikhamxay EMU 10.30 – 12:00: site visit to the 230 kV transmission line 12:00-14.30: trip back to Vientiane 14:30-17.00: Wrap up meeting with IAP and ADB
12 Dec (Sat)	8:00-13.00am: office work 13:30-18.00: participation to the meeting between the IAP, ADB, LTA and the NNP1PC management, TD, EMO and SMO de-briefing the company on the findings of the visit.
Senior Social Expert	
5 December (Saturday)	Arrival in Vientiane
6 Dec (Sun)	Documents review, internal meeting with LTA team
7 Dec (Mon)	8.30 Pick up at the hotel 9.00 – 13.00: Update on construction progress, briefing of ESD activities on progress in implementing IAP, ADB and LTA recommendations. 13.30 -15.30: Together with IAP resettlement and social specialists and ADB, met with the Deputy Minister, Minister of Energy & Mines and representatives of the Project Steering Committee (SC) Secretariat, which is chaired by the Minister of Energy & Mines. The group requested for a meeting with the SC Chair to explain the current situation, GOL's and RMU's role and proposed measures (i.e. asset registration and choice survey flowcharts) to avoid delays in implementation. 15.30-18.00: Departure from Vientiane and travel to Longxan
8 Dec (Tue)	Travel from Longxan to Hom District Meet with Xaysomboun RMU, District Coordinating Committee of Hom, and representatives of 2LR villages (4 from each village) Travel to Pakxan
9 Dec (Wed)	Together with the IAP resettlement and social specialists and ADB, travelled to Thathom District, Xaysomboun Province, for consultations with district officials and PAP from three villages in Zone 2UR. Visit NNP1 field office in 2UR. Travel back to Pakxan
10 Dec (Thu)	Meeting with SMO staff responsible for camp followers, labour management, health and education team. Meeting with Bolikhan District Health Staff. Meeting with Police and Labour Union Representatives. Lunch at Hat Gniun. Meeting with managers, health staff and union representatives in two camps. Meet PAPs at Hatsaykham. Visit to Main contractor's and NNPC1 camps. Visit to Houay Soup Resettlement Area. Travel back to hotel in Paksan.



Date	Activities
11 Dec (Fri)	Travel from Pakxan to Bolikhan. Meet with Bolikhan District Governor. Travel back from Bolikhan to Pakxan. Meet RMU of Bolikhamxay & Provincial Governor. Travel back to Vientiane. Together with IAP resettlement and social specialists, NNP1 management and ADB, met Minister of Energy & Mines (MEM - SC Chair) and his staff to raise key concerns about critical steps in the resettlement process which can delay the Project, the role of GOL, and the RMU XSB in particular.
12 Dec (Sat)	8:00-13.00am: office work 13:30-18.00: participation to the meeting between the IAP, ADB, LTA and the NNP1PC management, TD, EMO and SMO de-briefing the company on the findings of the visit.

Persons met:

NNP1PC - Management	Mr. Yoshihiro Yamabayashi (Managing Director) Mr. Tsutsui Shoji (Deputy Managing Director of Technical Power Plant) Mr. Prapard Pan-Aram (Deputy Managing Director Environmental & Social Department - ESD) Mr. Peter Gammelgaard Jensen (Senior Environmental Specialist - ESD) Kazunobu Yamada, (Deputy Managing Director, Finance and Accounting)
NNP1PC - Technical Division	Mr. Keita Kosaka – Planning Division Manager, Technical Dept. Mr. John Cockcroft – Senior Advisor (Construction and Contract Management)
NNP1PC - Environmental Division	Mr. Viengkeo Phetnavongxay – EMO Manager Mr. Clifford Massey – Deputy Manager, Compliance & Monitoring Mr. Hendra Winastu – Deputy Manager, Watershed Management Ms. Souksakhone Sihalath – Team Leader, Environment Inspection Mr. Douaher Xailiavue – Team Leader, Environment Monitoring Ms. Nantarat McWilliam – Team Leader, Waste Management Ms. Sengdavanh Phongpaseuth – Document Control
NNP1PC - Social Division	Mr. Chakrit Duanjai - Social Manager Mr. Marcel Frederik - Resettlement Deputy Manager 3 and 5, SMO Mr. VilaphanhKhanthavong - GoL Relations Senior Officer Mr. NilandonThavonsouk - Livelihood Team Leader Mr. NengherXayliaveu - Community Relations Team Leader Mr. Kongthong - Livelihood officer 2LR Ms. Khamkhing - Team leader for camp followers programme Ms. Phonsavanh - Health specialist Ms. Somphan - Hatsaykham CD liaison Mr. Bounmee – Manager 2UR Mr. LouangtipVilay - Relocation Officer 2UR



IAP - Independent Advisory Panel	Mr. Anthony Zola – Resettlement Specialist Mr. Songwit Chuamsakul - Social Specialist Dr. Richard Frankel – Environment Specialist Dr. Kathy McKinnon – Biodiversity Specialist
ADB - Asian Development Bank	Ms. Kurumi Fukaya (Private Sector Operation Department) Ms. Joycelin Munsayac (Social Specialist) Mr. Vijay Joshi (Principal Safeguard Specialist) Mr. Anik Ajmara (Environment Specialist) Ms. Elizabeth Mann – Social Specialist Mr. Matt Corbett – Watershed Specialist Mr. William Robichaud – Biodiversity Specialist
Contractors	Mr. Ishii - Obayashi Manager
Steering Committee Minister of Energy & Mines	Mr. Chanthaboun Soulealoum - Dept. of Energy Business Dr. SychathBoutsakitirath - Deputy Director General, Dept. of Energy Business, SC Secretariat Mr. Souksarath - Task Manager for NNP1, DEPD Mr. Khamchanh - Consultant (formerly head of DEPD)
Xaysomboun Government	Mr. Lao PaoXiongNavongxay - Vice Governor Xaysomboun Mr. PhonxayThanawan - RMU Xaysomboun Mr. Khampomg Khamsida - Director General LFNC/PRLRC Mr. Bounbriaya Thorphialouang - District Governor Hom Mr. Bounleunlor - Deputy District Governor Hom Mr. Yachieng Sem Lo - Head Hom District LFNC Mr. Heurthao Daopie - Head of Hom District Cabinet Office
Bolikhamxay Government	Dr. Souvanny Saysana - Vice Governor Bolikhamxay Mr. Khamsing Sayphouvong - RMU Bolikhan District Governor, Bolikhan
Others	Village Development Committee Members of 2LR Village Development Committee Members of 2LR Officials of Thathorn District NNP1PC staff in Thathorn District Staff of Bokhan District Hospital Staff of Health Team SMO Lao Labor Union (LLU) Representative in Hat Gniun Police Officers in Hat Gniun Administrative and Medical Staff of Right Tunneling Co Ltd Administrative Staff of Song Da 5

3.3 Planning for the Next Quarter

The next site visit by the LTA environmental and social team still has to be precisely defined, but is tentatively supposed to take place in May 2016. The next Quarterly Report on Environmental and Social Aspects will be issued after this visit.

Home office work for the next quarter is expected to include:

- review of the documentation received from IAP, ADB, NNP1PC and the Main Contractors;



- preparation for the next quarterly visit;
- preparing the Quarterly Report on Environmental and Social Aspects after the site visit.



4 NNP1PC E&S Organisations

4.1 EMO

4.1.1 General

The watershed management team has been renamed as Watershed Management and Biodiversity, comprising a land use team (which includes forest management and reforestation) and a biodiversity team responsible for the offset activity and for biodiversity monitoring under the offset arrangements and within the watershed. The current structure is organized with a Watershed and Biodiversity separate structure (see Figure 4-1) with a Deputy Manager for the Biodiversity and Watershed Management (Dr. Hendra Winastu).

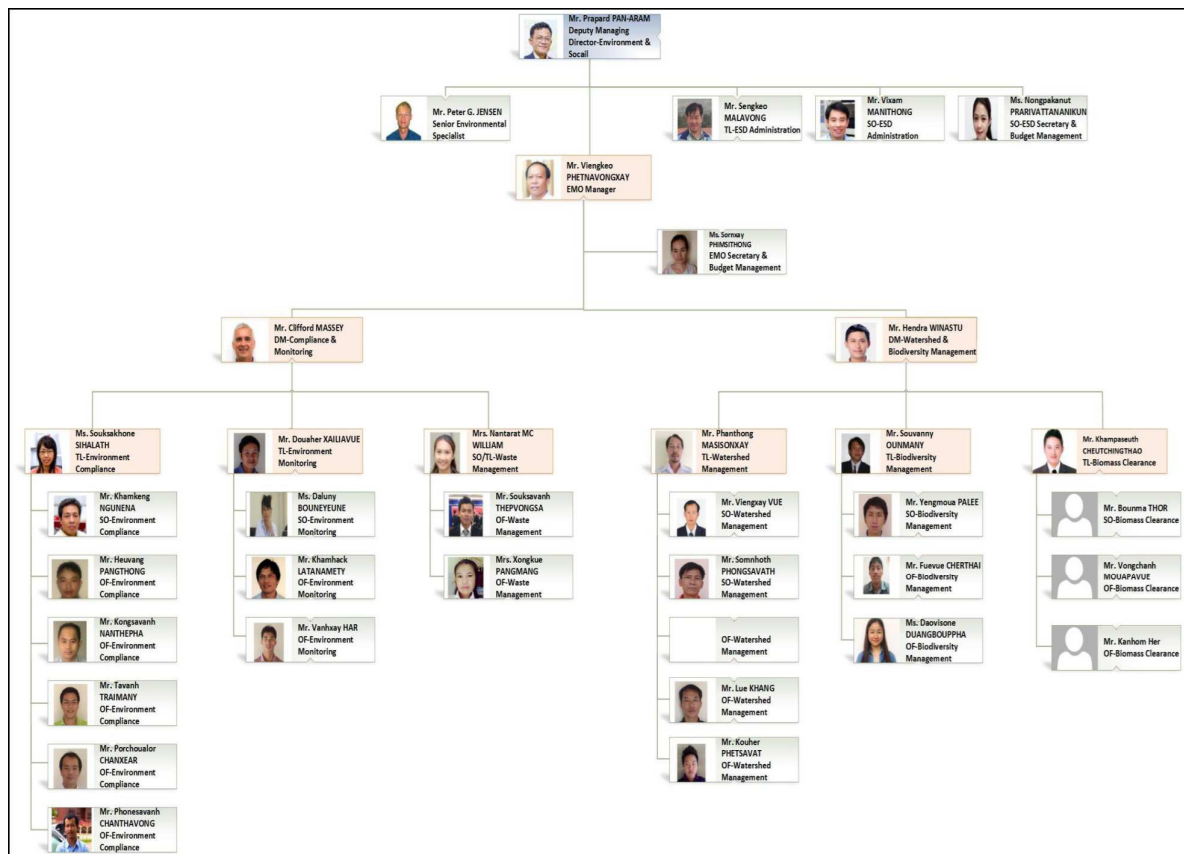


Figure 4-1 NNP1 E&SM Organisational Chart during the site visit.

4.1.2 Staffing

All the key positions have been filled, including also all the positions that were still vacant during the previous site visit (namely Watershed Management Team Leader, Biodiversity Management Team Leader and Biomass Clearance Team Leader): Deputy Managing Director (Mr. Prapard



Panaram), EMO Manager (Mr. Viengkeo Phetnavongsay), EMO Deputy Manager Watershed Management (Dr. Hendra Winastu), EMO Deputy Manager Inspection/monitoring (Mr. Clifford Massey), EMO Team Leader for Inspection (Ms. Souksakhone Sihalath), EMO Team Leader for Monitoring (Mr. Dohuaer Xiailiavue), EMO Team Leader for Waste Management (Ms. Nantarat McWilliam), Watershed Management Team Leader (Mr. Masisonxay Phanthong), Biodiversity Team Leader (Souvanny Oumnany) and Biomass Clearance Team Leader (Khampaseuth Cheungchingtao).

The EMO staffing is almost completed, the only position that still need to filled is one officer in the Watershed Management team.

4.1.3 LTA’s Recommendations

Even if the compliance team is spending more time at site, the LTA’s general impression is still that the whole structure is over staffed. Considering that the Project company is of different opinion the LTA insists on the fact that the environmental team shall stay permanently at site to monitor the compliance of the environmental measures: such a significant amount of personnel could be justified only if the environmental officers would spend most of their time at site, moving around the construction area to verify that the environmental management measures are properly applied by the Contractors and their Subcontractors.

As indicated in the previous Quarterly Reports, the working place of the various components of the EMO is still unclear. Accordingly, with reference to the discussion we had during the visit, the Compliance and Monitoring Group of the EMO will be moved to site as soon as logistics will allow. The LTA would strongly advise to prepare a new organization chart that identifies the staff based at the Project site, in Paksan, in the affected villages and in Vientiane.

Moreover, to adequately achieve the compliance monitoring goals the EMO should be provided with proper testing equipment and an adequate laboratory to make more effective the monitoring activities.

4.2 SMO

The present status of the SMO organisation can be summarised in the following points:

- Key management positions are still not filled (see Figure 4-2) and the Senior Social Manager is still working for the Project on a part time basis.



Figure 4-2 SMO Management Organisation Chart

- Personnel working in the SMO as of end November 2015 is given in the Table 4-1.



Table 4-1 SMO Staff by End November 2015

Team	Sub team	Total staff	Current TT	M	F	Hmong	Staff		Consultant	
							Expat	Local	Expat	Local
SMO										
Management		7	4	4	0	0	2	2	0	0
Support		1	1	1	0	0	0	1	0	0
	Sub-total	8	5	5	0	0	2	3	0	0
Information & Document Management	Database	8	8	2	6	0	2	6	0	2
	GIS	5	5	4	1	0	0	3	0	2
	DCC	5	4	1	3	0	0	4	0	0
	Sub-total	18	17	7	10	0	0	13	0	4
Resettlement & Infrastructure	Specialist	1	1	1	0	0	1	0	0	0
	Eng. & Design	4	2	2	0	0	0	2	0	0
	Architecture	4	3	3	0	2	0	3	0	0
	Construction	3	3	3	0	0	0	3	0	0
	Agriculture	4	4	4	0	1	0	4	0	0
	2UR Survey	4	1	1	0	0	0	1	0	0
	Sub-total	20	14	14	0	3	1	13	0	0
Resettlement 2LR/Z3	Livelihood	12	12	10	2	5	0	12	0	0
	Specialist	1	1	1	0	0	0	0	0	1
	Camp follower & resettlement prep.	9	7	3	6	2	0	7	0	0
	Sub-total	22	20	14	8	7	0	19	0	1
Relocation & Livelihood 2UR	Asset registration	45	45	45	0	12	0	4	0	41
	Compensation	14	11	1	10	2	0	5	0	6
	Relocation 2UR	8	7	4	3	2	1	6	0	0
	Sub-total	67	63	50	13	16	1	15	0	47
Social Development & Monitoring	Health	3	3	1	2	1	0	3	0	0
	Social Monitoring	4	3	1	2	2	0	3	0	0
	Fish catch monitoring	5	5	3	2	2	1	4	0	0
	Vulnerable	1	1	0	1	1	0	1	0	0
	Education	2	2	1	1	1	0	2	0	0
	Gender & Ethnic Group Development	1	1	0	1	1	0	1	0	0
	Social Monitoring Intern	1	0	0	0	0	0	0	0	0
	Specialist	2	2	1	1	0	0	0	2	0
	Sub-total	19	17	7	10	8	1	14	2	0
	Government & Community Relation	5	5	5	0	3	0	5	0	0
	Grievance	5	0	0	0	0	0	0	0	0
	Sub-total	10	5	5	0	3	0	5	0	0
	Total SMO	164	141	102	42	37	5	82	2	52

Apart from the lack of management personnel, the lack of personnel is especially important in the Resettlement & Infrastructure team, and in the Grievance team. The sizeable presence of Hmong personnel is appreciated.

- The allocation of the SMO personnel in the different offices is shown in the following Table 4-2. It is expected that the personnel working in the Houay Soup will substantially increase once the construction of the infrastructure and the initial resettlement of the Hatsaykham village will start.



Table 4-2 SMO – Staff by Location

	Office location	Total	F	M
1	Pakxan	79	33	46
2	Vientiane	9	4	5
3	2LR (Sopyouak)	16	0	16
4	2UR (Thathom)	35	3	32
5	Z3 & 5 (Hat Gniun)	4	1	3
6	2LR (Phalavaek)	1	0	1
7	Owner Base Camp	11	0	11
8	Houaysoup Resettlement Area	1	0	1
9	Other	3	1	2
		159*		

* Including drivers & housekeepers

4.3 EMO/SMO Collaboration

During the previous site visits it was noticed that there was still a limited collaboration between EMO and SMO. It was therefore recommended to improve communications and information sharing between the EMO and SMO, including development and implementation of joint planning and monitoring of issues of common concern, such as: Resettlement, Fisheries, Water, Soil Erosion and Forest.

All these remarks were taken in consideration by EMO and SMO and the collaboration among the two groups was improved. It is recommended furtherly improve it specifically referring to:

- **Water quality monitoring:** EMO is providing regular monitoring reports and would provide warning to SMO in case of water pollution in critical areas for local communities. SMO will regularly request from EMO water quality testing where SMO needs respective data. This is very good in theory but it appears a bit difficult from the practical point of view, because no water analyses laboratory has been established so far by the EMO. It is important to establish as soon as possible an adequately equipped laboratory.
- **Solid Waste management:** to enhance waste recycling activities a joint initiative between EMO and SMO is necessary in order to find with the local communities' ways to reuse wastes (i.e. used tires, food wastes etc.).
- **Forest management:** SMO will support EMO with necessary information on community developments and vice-versa use information provided by EMO for community development activities. Several teams will work together, above all the watershed management and the livelihood teams with respective forestry/NTFP officers.



5 GOL Agencies & Local Authorities

5.1 PRLRC, Xaysomboun and Bolikhamxay RMUs and District Authorities

The LTA shares IAP's findings and recommendations pertaining to the performance of Xaysomboun RMU.¹ The RMU needs to be more engaged in the resettlement process in Zone 2LR to hasten the implementation of activities, clarify misconceptions and increase the level of trust of the affected people on the process and involved organizations. The IAP recommends that ways and means be identified and implemented to strengthen the Xaysomboun RMU. The LTA recommends that the NNIPC and the RMU will sit together to assess the latter's strengthening needs and together design the actions that needs to be taken. The IAP also recommends that NNIPC work more closely with the Xaysomboun RMU to provide orientation and familiarization to Hom District officials to facilitate the work in Zone 2LR. While the Bolikhamxay RMU is doing better than the one in Xaysomboun, its members including the District Authorities needs intensified support through training. This will prepare the Bolikhamxay RMU to support more strongly the resettlers in their actual transfer to resettlement site and as they learn to establish new patterns of living.

5.2 MONRE, EMU

NNIPC is expected to contribute to capacity building of MONRE and to financially assist in establishing an Environmental Management Unit (EMU), which will be staffed by provincial and district officials from project affected areas.

As established in Annex C - Social and Environmental Commitments of the CA, the EMU is required to monitor all environmental aspects of project development and operation except resettlement. Monitoring of the environmental situation is to ensure that the company complies with the Lao laws. During the construction phase, key monitoring issues include impacts from construction, biomass clearance, and safety for local communities (primarily impacts from transport and traffic control); and during the operation phase impacts from power generation and other company activities.

The role of the EMU is to monitor implementation of the EMP and to report on its adequacy and effectiveness to MONRE and to NNIPC. The EMU monitoring reports would include findings, deviations (if any) from the EMP and the CA commitments, and villager grievances.

The duties of MONRE have been expanded to include the departments of Land Planning, Forest Resource Management, and Water Resources Management. Thus, district staff assigned to these activities believe that they should be represented or involved in EMU monitoring and reporting activities as they have connecting or overlapping environmental issues.

On December 11th the LTA together with IAP, ADB and NNIPC EMO had a meeting with the PONRE officers in Bolikhamxay and specifically with EMU People. During the meeting the present involvement of the EMU in the monitoring activities at site and in the surrounding villages was discussed.

¹ Report Number 6 of the Independent Advisory Panel on Nam Ngiep Hydropower Project Lao PDR - Fifth Visit, 7-13 December 2015 - Draft 12 January 2016.



5.3 LTA's Recommendations

As already mentioned in the previous quarterly Implementation Progress Report, the LTA fully agrees with the comments already given by the IAP, recommending that the company 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 Then 2 and Theun-Hinboun projects. The agenda shall include the expanded mandate of MONRE to oversee integrated environmental conservation interests of water, forest, and biodiversity protection at the regional and district levels. The Meeting 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 to inform project-affected-persons of monitoring results. These activities would be of interest to a future Nam Ngiep River Basin Committee comprising representatives of private and public sector development projects in the Nam Ngiep river basin.

It is also very important that EMO continues (as is partially already doing) trying to involve as much as possible EMU in the monitoring activities and in the site. Such involvement should include also the activities related to the Biomass Removal Plan.



6 Contractors' E/S Organisations

6.1 Civil Contractor

6.1.1 Contractor's Organisation

The E&S department of Obayashi has been improved by appointing an EHS Manager (Mr. Tayuchi Tomohiro) an Environmental Specialist (Mr. Santi Sayakoummane) and a Safety Engineer (Mr. Lester Palarca) within Obayashi. No testing laboratory facility is available in Obayashi's offices. In the last months OC has also hired an expert to design the waste water treatment system of all the camps.

Obayashi has eventually created an Environmental, Health and Safety department staffed with an Environmental Health and Safety Manager, an Environmental Officer and a Health and Safety Officer. This represent a significant improvement compared to the previous site visit when a person without the adequate competences (an infrastructure engineer) was appointed as responsible for the Environmental issues on Contractor's side.

The new environmental team seems to be competent and has already begun to take actions to implement some of the environmental measures recommended in the LTA's previous reports, however it shall be reminded that whenever a specific external competence is required (such as waste water expertise), the EHS team of the Contractor shall strictly follow the indications given by the experts, otherwise some of the environmental mitigation measures taken may be ineffective.

6.1.2 LTA's Recommendations

It is an important good new that OC has established an E&S by appointing the relevant specialists and by hiring experts on specific issues, however it shall be underlined that if OC trusts its own experts, they should follow their indication (i.e. the waste water treatment system, even if properly design, have not been built following the expert's recommendations, in fact jeopardizing the effectiveness of the plants).

NNP1PC should stress the need for Obayashi to:

- Implement as soon as possible EMO recommendations;
- To regularly check the subcontractors' performance on environmental aspects, particularly wastewater treatment and waste management,
- Record construction related grievances and social problems of the local population of the near-by villages,
- To make sure that the professional advices required on some specific issues (i.e waste water treatment systems, solid waste management, etc.) are duly implemented.

This will supplement the EMO and SMO team's tasks to monitor the compliance with established SSESMPs and manage social concerns.



6.2 Other Contractors

An Environmental, Health and Safety Officer is shown in the organisation chart of the Transmission Line Works Contractor (Mr. Chupong Ounpusa), without further details. NNP1PC shall request full details of the environmental, health and safety organisation since the contractor field activities have already begun.

Nothing related to environment is shown in the organisation chart of the EMWC

The organisation chart provided by the HMWC shows in the role of HSE (Health, Safety and Environment) the site representative (Mr. Tomoyuki Kizaki) .

6.2.1 LTA's Recommendations

NNP1PC shall request information about environmental organisation of all the subcontractors as soon as possible, before relevant field activities start.



7 Site Specific Environmental & Social Aspects

7.1 Health and Safety Issues

7.1.1 Accidents Occurred and Remedial Measures

An updated summary of the accidents occurred until end November 2015 is shown in the Figure 7-1, which shows the number and type of accident against the various incidents categories defined by NNP1PC.

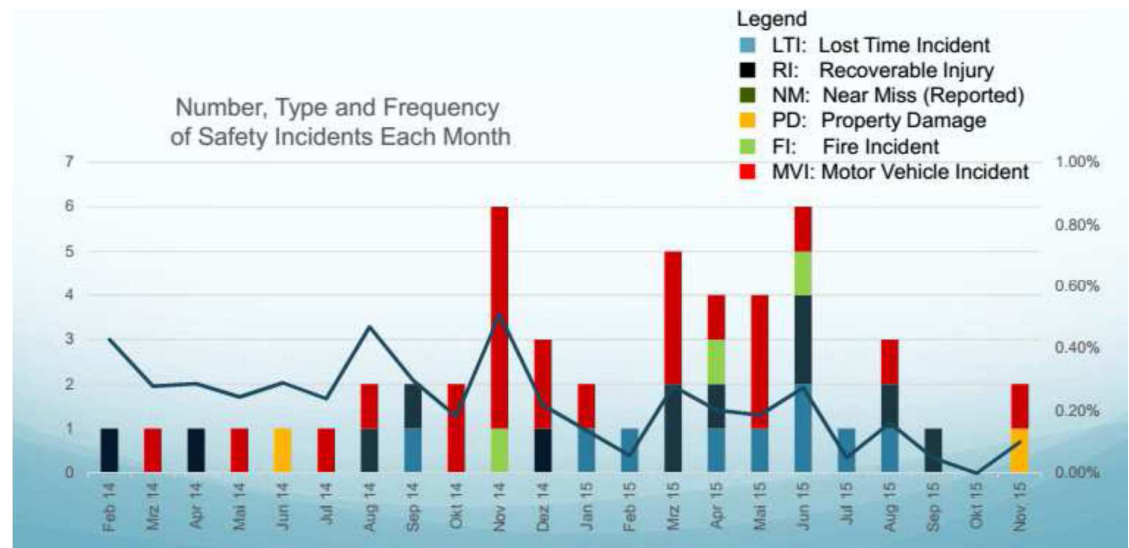


Figure 7-1 Accidents Reported by NNP1PC until November 2015

There is some discrepancy between the accidents reported by NNP1PC and the information provided in the monthly reports of the CWC. The reason could be accidents occurred to NNP1PC staff, or more probably the inclusion by NNP1PC in their reports of near miss accidents not reported by the CWC. Some clarification would be useful.

The period between end March and beginning June 2015 had an alarming increase in the number of road accidents. The rates between number of accidents and workers employed reduced significantly since June 2015 due to improved road safety measures, better check of vehicles conditions, and training.

Until February 2015, three serious accidents occurred, as detailed in a previous LTA Quarterly Report. Thereafter, no serious accidents occurred at site. Especially in view of the planned starting of the main dam construction, NNP1PC is advised to strengthen the methodology for the identification of potential construction risks and the development of a plan to eliminate or minimize them in a cost-effective manner.

7.1.2 Emergency Action Plan

In case of accident events, NNP1PC is adopting an Emergency Action Plan as illustrated in Figure 7-2. We understand that the plan is presently applied for all work areas.

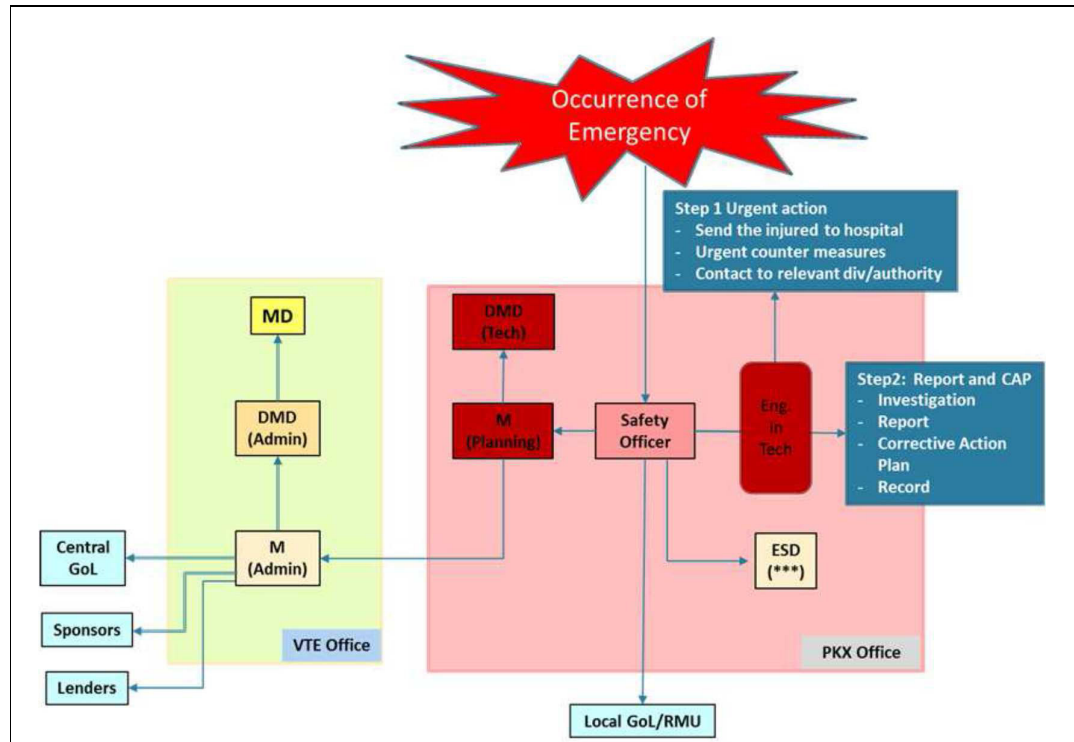


Figure 7-2 Emergency Action Plan in case of accident

In addition, NNP1PC has developed Emergency Action Plan for flood events as shown in Figure 7-3. The mitigation plan against flood events is established for three levels of flood warnings. For each level, announcements are made to construction workers and for public information.

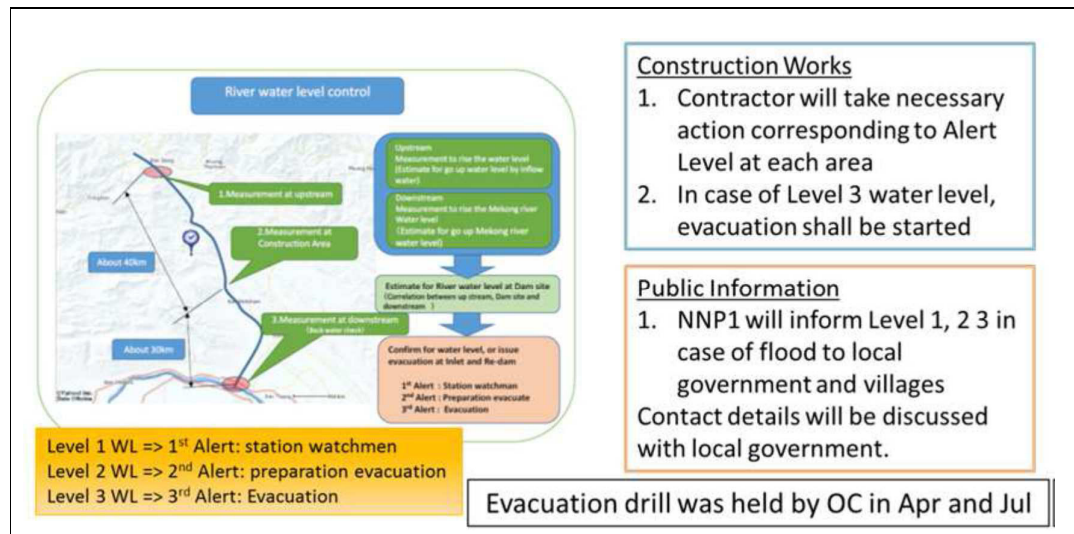


Figure 7-3 Emergency Action Plan in case of flood



7.1.3 Medical and Health Facilities

Medical facilities at site are listed in the Table 7-1.

Table 7-1 Medical Facilities at Site

No.	Subcontractor	Nos. of Persons	First Aid Room/ Clinic	First Aid Kit	Ambulance	Doctor	Paramedic	Nurse	First Aiders
1	TCM	67	A	A	-	0	0	0	2
2	Right Tunneling	200	-	A	-	0	0	0	6
3	Sino-Hydro	156	A	A	-	1	0	0	7
4	Song Da 5	1,089	A	A	-	0	0	1	17
5	PAKC	0	-	A	-	0	0	0	0
6	PKCC	175	-	A	-	0	0	0	4
7	V&K	50	A	A	-	0	0	0	0
8	Goshu Kohsan	11	-	A	-	0	0	0	2
0	Lao Security	8	-	A	-	0	0	0	0
10	PEC	12	-	A	-	0	0	0	0
11	OC Camp	153	A	A	-	0	0	1	10
12	NNP1 Camp	65	A	A	-	0	1	0	6
	Total	1,986	-	-	-	1	1	2	54

Medical Services at the Owner's Camp significantly improved after contracting International SOS Services (Thailand) Ltd. The SMO team of NNP1PC and the Contractor are discussing to further improve medical facilities and introducing a Training Program for workers on STD.

Medical interviews for a number of workers were launched in July 2015 with a sampling survey.

More comprehensive surveys were carried out in September and October 2015 at Song Da 5, Sinohydro and RT workers camps, for a total of 495 workers (41 females) among 1,524. Serious diseases to be investigated urgently were not found. However, it was recommended to keep monitoring workers, as there are many new comers every day.

7.2 Civil Contractor Environmental Compliance Monitoring

7.2.1 Monitoring Program

NNP1PC established a monitoring program to report environmental non-compliances:

- Every 2nd Tuesday a Joint Inspection of construction sites is conducted between the Technical Department, Obayashi and the ESD Compliance Team.
- Sites to be inspected are selected based on construction schedule and/or E&S issues of importance – up to 10 sites.
- The Compliance Team provide requests and recommendations to Obayashi regarding environment and social matters– based on SS ESMMP requirements, through the issue of Observation of Non-Compliance (ONC), and of Non-Compliance Reporting (NCR).



ONC should not be regarded as a negative action against the contractor. ONCs are an administrative tool to manage environmental compliance matters. NCRs are more significant, reflecting more important environmental issues, or Contractor’s response to issues.

- For the following two weeks, the Compliance Team follows up on implementation
- Weekly Health Safety and Environment meetings are carried out.

7.2.2 Inspection Sites

Sites subject to inspection by the Compliance Team includes the work fronts, all subcontractors’ camps and environmentally critical facilities, including in particular the waste disposal area: see Figure 7-4 through Figure 7-6.

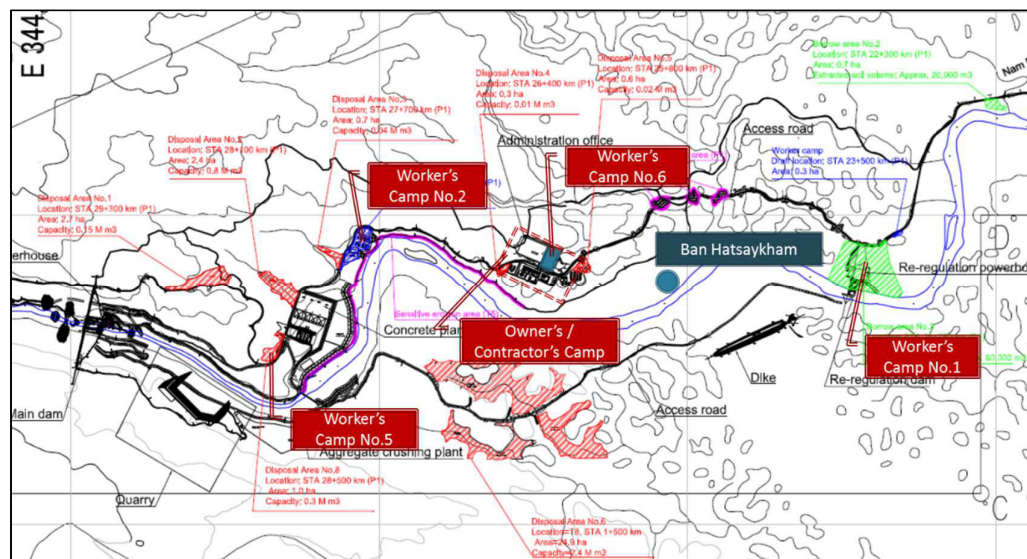


Figure 7-4 Location of Owner’s, Obayashi’s and Subcontractors’ Camps 1, 2, 5 and 6

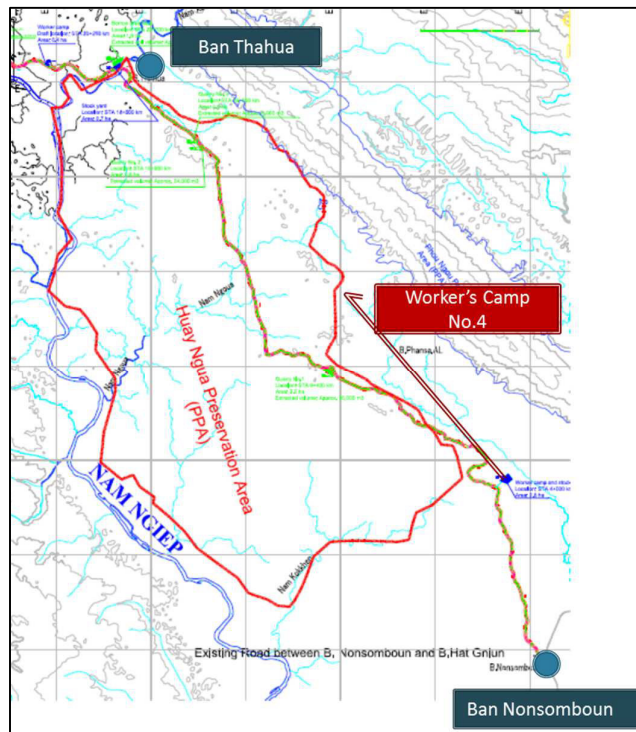


Figure 7-5 Location of Sub-contractors' Camp 4

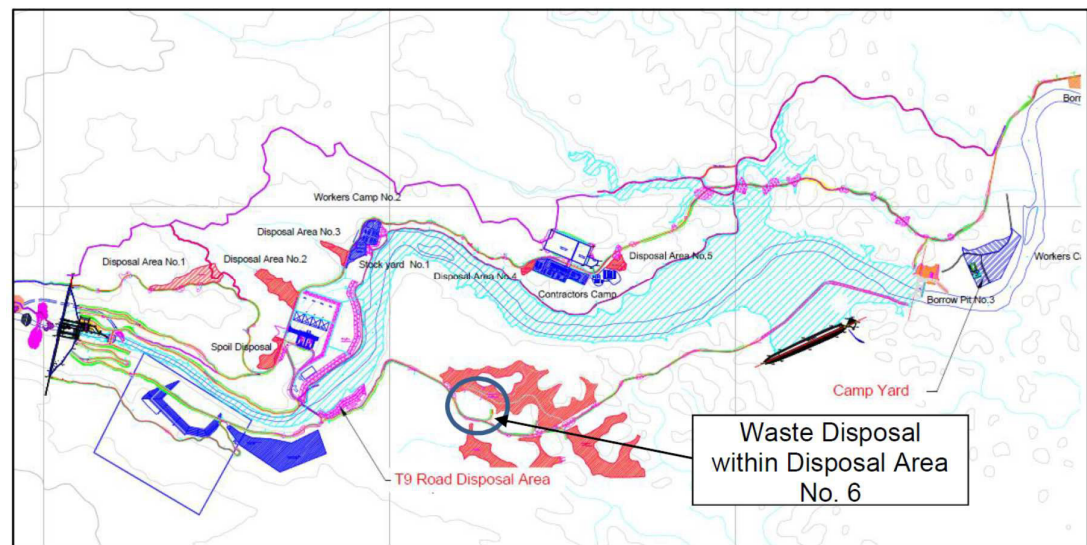


Figure 7-6 Location of the Waste Disposal Area

7.3 Reported Inspections / Non-Compliances

Various environmental non-compliances have been notified to Obayashi and its subcontractors. In general, the main issues were (a) grey water and sewage water discharge; (b) waste management from the worker camps; (c) hazardous waste storage areas at workshops; (d) spoil disposal management; and (e) soil and rock erosion protection along the roads nearby the river.



According to NNP1PC 3rd quarterly report (the last available report still in draft) a total of 62 new non-compliances including one NCR were issues (requiring corrective action), among these 51 Observations of Non-Compliances (ONCs) and 3 NCRs Level 1 were resolved in the quarter. There are still 23 ONCs, 1 NCR Level 1 and 1 NCR Level 2 still open at the report issuing date.

Table 7-2 Open Non-Compliances by End September 2015

Non Compliance Category	ONC	NCR1	NCR 2	NCR 3
Hazardous Waste Management including minor oil spills at workshops, material storage and handling (disposal and/or storage)	17	1	0	0
WWTS Function and Management	10	2	0	0
Solid Waste Management	15	1	0	0
Spoil Disposal Management	5	0	0	0
Construction Site Effluent Discharge (rainy season incidences)	6	0	0	0
Surface Water Drainage Management	11	0	0	0
Erosion and Sediment Control	6	0	1	0
Other (Livestock entering the site)	3	0	0	0
SUB-TOTAL	73	4	1	0
GRAND TOTAL			78	
Closed /Resolved			54	
Pending issues carried over to next quarter			24	

7.4 Findings from the Site Visit

7.4.1 Workers' Camp

Around 2,000 persons are presently working in the different construction fronts of the project. This number is expected to reach and possibly exceed 2,200 persons at the peak of the construction activities (2016).

All camps look in better conditions compared to the LTA's previous site visit, in terms of housekeeping, waste water management and waste separate collection and disposal, however several aspects need to be furtherly fixed.

The solid waste separation shall be furtherly improved, the bunding of the fuel storage areas shall be checked in terms of total volume that could be retained in the pools in case of fuel container break, waste oil management has been improved compared to the previous site visit, but NNP1PC shall adequately and frequently monitor the relevant maintenance, to assure that such systems properly work.

More in details, the following construction workers' camps were visited during the December LTA mission, focusing the inspection to the waste water treatment systems:

- Song Da 1 (the first camp of the Vietnamese sub-contractor);
- Song Da 2 (the 2nd camp of the Vietnamese sub-contractor);
- V&K (Lao sub-contractor's camp);



- Right Tunnelling (Thai sub-contractor's camp);
- TCM (Lao – Cambodian sub-contractor's camp);
- Sinohydro (Chinese sub-contractor's camp);
- Obayashi Corporation (Main Contractor's camp)
- Nam Ngiep Power Company (Owner's camp)

7.4.2 Wastewater Treatment

Nam Ngiep Hydropower Project comprise 10 subcontractor camps, main contractor and owner camp. The owner's base camp is the permanent camp that it will become the operator's camp for 27 years' concession period after construction. The others, main and subcontractor are temporary for the construction period. Each camp has its own design of wastewater treatment system. Basically, they use septic tank for primary treatment, but varying treatment systems after that; such septic filter, sediment pond, aeration pond, aquatic pond, etc.

All waste water coming from toilets, kitchens and all other water using activities performed at the camps should be treated by proper water treatment systems.

During the site inspection the LTA appreciated the NNPIPC EMO last months' efforts in pushing the Contractor to improve such facilities and some improvements have been verified at site: The Contractor has hired a qualified wastewater treatment expert who has designed adequate wastewater treatment system for all camps.

The problems, however, still remain because the Contractor has not followed adequately the instructions of the expert. Most of the wastewater treatment system do not work properly mainly because the ponds' bottoms have not been provided with an adequate watertight membrane (as recommended in the expert's report - see Figure 7-7), thus allowing the seepage of the polluted water into the underground water circulation system.

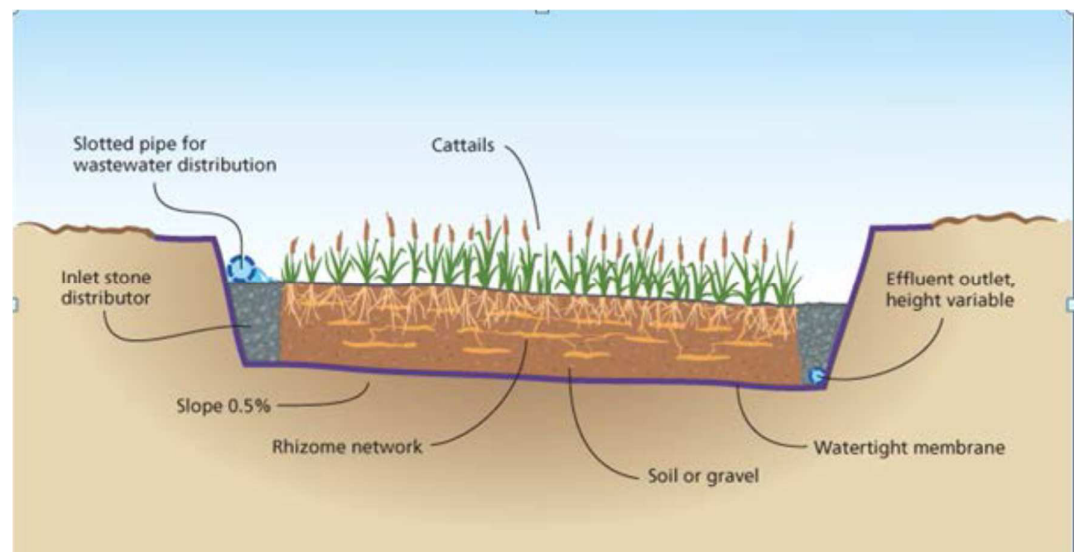


Figure 7-7 Layout of filtration pond (taken from the expert's summarized report)



Moreover, the water coming out at the end of the process is dispersed into the local environment (soccer fields, sprayed on the roads, on the slopes that need to be revegetated, etc.) without making any analysis to assure that the required standards are met.

This is not in line with common adequate practice, with what is indicated in the guidelines and recommended by the expert, which at page 19 of the summarized report on waste water treatment system writes “... if we would like to discharge outside, disinfection by chlorine is necessary to reduce the total coliform. The control parameters should be checked to verify that they conform to the effluent standard...”. Control parameters to be analysed are reported in Table 7-3, relevant frequency is reported in Table 7-4. Both tables are taken from the mentioned report.

Table 7-3 Waste water quality parameters to be controlled before discharging the water into the environment

Control Parameter	Units	Guidelines
pH		6-9
BOD – Biological Oxygen Demand	mg/l	≤30
COD – Chemical Oxygen Demand	mg/l	≤125
TSS – Total Suspended solids	mg/l	≤50
FOG – Fats, Oil, Grease	mg/l	≤10
NH ₃ – N Ammonia Nitrogen	mg/l	≤10
TN – Total Nitrogen	mg/l	≤10
TP – Total Phosphorus	mg/l	≤0.2
Total Coliform	MPN/100ml	<400

Table 7-4 Analysis frequency

Frequency of Analysis Parameter	Frequency
pH	A
BOD – Biological Oxygen Demand	B
COD – Chemical Oxygen Demand	A
TSS – Total Suspended Solid	A
FOG – Fats, Oil, Grease	B
NH ₃ -N – Ammonia Nitrogen	C
TN - Total Nitrogen	C
TP - Total Phosphorus	C
Residual Chlorine	B
Total Coliform	C

Note: Frequency of analysis:

- A = Every 3 days
- B = Every week
- C = Every 2 weeks

Some specific comments are necessary for the Owner’s Waste Water treatment system. Contrary to the other WWTS that are supposed to last few years (only during the construction activities), the Owner’s WWTS is supposed to last and function for 30 years at least. Therefore, it has been designed accordingly by the Expert, but also in this case the Contractor has not duly followed the expert’s indications. The result is that the WWTS is not working well: there should be no water (or only a minimal fraction) coming out from the sand dispersing system but in fact now the water is coming out from the filtration bed constantly and not adequately filtered.

The filtration bed has not been built adequately: sewage pipes should not be located on the surface of the filtration bed, but should be covered with geotextile, surrounded by gravel and buried underground into a proper drainage trench (see Figure 7-8).

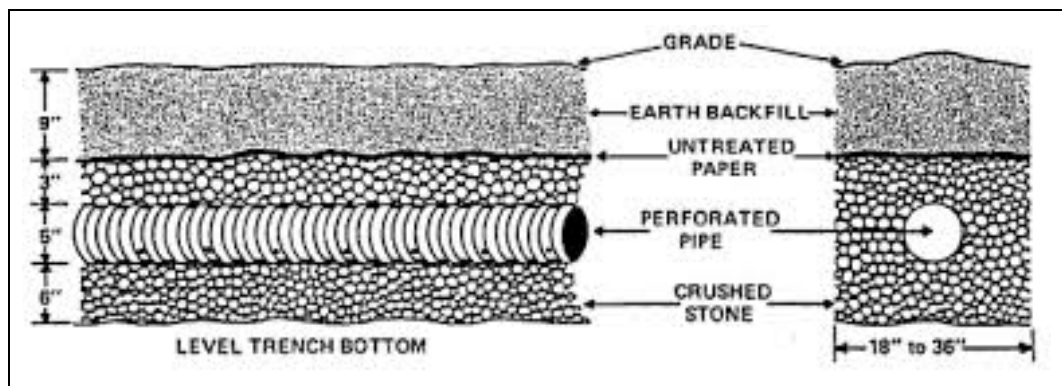


Figure 7-8 Drainage trench

7.4.3 Waste management

In average, the Project generates approximately 117m³ of uncompressed solid waste each month. Each cubic meter of solid waste weight approximately 200kg, but this increases to 500kg when compressed.

In January 2015, two temporary pits each of approximately 300 m³ capacity were installed at the landfill site. Later on, a third has been installed and filled, a fourth and a fifth pit are being filled.

Presently excavated pits will be used as temporary storage of domestic waste until the permanent landfill area is completed. On the completion of the landfill construction, the waste in these pits is to be exhumed, and placed in properly designed pits. Currently no solid waste at the landfill has been compressed. This will occur after the transfer to the completed pits.

The sanitary landfill design prepared by the expert meets the requirements, but it's construction shall not be delayed anymore. LTA strongly recommends to finalise the landfill design and proceed with the construction as soon as possible. It is of clear evidence that wet season conditions have complicated the leachate management at the landfill site, therefore the landfill should be finalized before the next rainy season comes.

In order minimising the volume of waste to be disposed at site, in response to LTA recommendations, the EMO recommended several companies acceptable to NNP1PC for such recyclable construction waste as tire, oil, scrap steel etc.

The separate waste collection is well designed, but needs to be implemented.

Recycling shall be enhanced by joint initiatives between EMO and SMO, trying to find with the local communities possible re-uses of wastes like used tires, food wastes etc.

NNP1PC has consulted various firms and prepared inventory of available recycling companies as shown in Table 7-5.



Table 7-5: Inventory List of Recycling Companies

No	Type of waste	Vendor	Remark
Hazardous waste			
1	Used oil/hydraulic fluids oil, Used oil mixed with water, Other petroleum residues, Empty used oil drum/container, Used oil filter, Contaminated soil, sawdust and concrete, Contaminated textile and materials, Contaminated grease, Empty paint and spray cans, Empty contaminated grease drum/tin container, Empty contaminated bitumen drum/tin container	Khunmixay Steel Factory	
2	Used tire and rubber	Khunmixay Steel Factory, MS La (tire re-treated factory), Sor San Nguan Kan Yang (tire re-treated factory)	
3	Contaminated used rubber and hydraulic hoses, Solvent container, Acid and caustic cleaners, Empty used chemical containers, Pesticide container, Empty contaminated grease plastic container, Empty contaminated bitumen plastic container	Lantiang Factory	
4	Chemical waste (sikament), Used battery, Ink cartridge, Halogen/fluorescent bulb, Electrical can and waste	N/A, sores on site properly until finding vendor	
5	Infectious and medical waste	To put in landfill pit	
Recycle waste			
6	Plastic bottle	Lantiang Factory, Onchan Recycling Factory	
7	Plastic bag	Lantiang Factory	
8	Tin/aluminum, Scrap metal, Cement bags	Khunmixay Steel Factory	
9	Paper/cardboard	Recycling Factory (merchabt)	
10	Glass bottle	Keaw Lao Imporeted Company	
Others			
11	Food waste	Collecting for pig feeding	

Considering the huge amount of biomass that is going to be removed from the watershed it would be very important to think about its possible reuse: biochar is one of the options, but other possibilities should be explored (i.e. charcoal production).

7.4.4 Slope stability

Some loose soil stabilization measures were implemented since the LTA's previous visit which have partially improved the safety of the working areas and partially reduced the visual impact (silt fences downstream the dam axis). These remedial measures should be carefully monitored because in the LTA's opinion their long lasting stability is not guaranteed. Moreover, there are several locations with loose rocks and boulders on steep slopes that deserve attention to prevent the risk of rock falling and to reduce safety risks for people moving around in the roads located below.

7.4.5 Soil disposal areas

The Contractor has identified a main spoil disposal area (close to the wastes landfill), such area looks suitable from geological, morphological and hydrological point of view, but the Contractor should provide a design of the operation phases of such area together with a final recovery plan.

7.4.6 Quarry

The quarry for extracting the rock materials for aggregate production through the crushing plant is in a suitable location. However, an exploitation and final recovery plan is required. Both plans should be prepared together, because the quarry exploitation plan and techniques (type of berms, inclination of the excavation slopes, width of the berms, etc.) affect the success of the final



recovery as well. The plan shall include a description of the vegetation types to be used in the final recovery of the area.

Several borrow pits for other required construction materials have been identified by the Contractor. It's worth underlining that borrow pits should be avoided as much as possible and whenever necessary should be located in the future reservoir area. If it's necessary to locate some borrow pits in other areas not permanently covered by the main reservoir or by the re-regulation reservoir a final recovery and rehabilitation plan should be prepared by the Contractor and submitted to NNP1PC.

7.4.7 Crushing Plant

The RCC dam requires a huge amount of aggregates. The Contractor installed (through a subcontractor – Sinohydro) a crushing plant big enough to produce all the necessary aggregates in different sizes.

From environmental point of the main concerns arise from the high level of dust that was verified during the site inspection. Such level of dust could be harmful to all people working in the plant, also considering that the workers are not provided with adequate masks and in many cases they do not even wear the inadequate masks provided by the subcontractor. Therefore adequate measures (water sprinklers) to reduce the dust emissions in the plant shall be identified and installed as soon as possible as well as adequate PPE shall be provided to the workers and regular inspections shall be performed to verify the proper use of such devices.

Considering that the use of waster sprinklers is the most common, effective and fast system to reduce the dust emissions, it is worth recommending that the installation of such device shall include also an adequate de-silting system to reduce the sediment load concentration in the water before it is discharged into the natural water circulation system.

7.4.8 Final recovery plan

The guiding principle is that the construction area and all the areas where the relevant associated facilities (camps, temporary infrastructures, quarries, etc.) are located, should be properly cleaned-up and recovered. Therefore, the Contractor shall prepare a detailed decommissioning and final recovery plan for all these areas, that shall describe: recovery actions, scheduling, budget and methods for monitoring project recovery processes.

The NNP1PC shall check it, approve it and constantly monitor its implementation to make sure that no abandoned sites are left.

7.4.9 LTA's Recommendations

In general terms it's worth reminding that, since the project is financed by international financing institutions (that adhere to the Equator Principles), the stricter between the international (generally IFC – International Finance Corporation) and the national standards should apply.

Referring in particular to the wastewater treatment systems, the Contractor has involved a qualified wastewater treatment engineer to properly design and dimension the relevant wastewater treatment systems, but in the construction of the systems the Contractor did not follow the design, thus affecting the effectiveness and efficiency of the system.



The EMO should push the Contractor to strictly implement the design prepared by the Expert on one hand and on the other should check more frequently and in different hours the effluents to verify the treatment systems effectiveness.

Referring to solid wastes management, first thing is to reduce the amount of undifferentiated solid wastes by implementing a proper separate collection system that will allow to recycle most of the wastes: paper, aluminium cans, plastic, iron and other metals, used tires, etc. as properly prepared and studied by the EMO. Of course this plan could be further developed improving the quantity and the types of wastes to be recycled.

The wastes that cannot be recycled must be collected and disposed in separate areas. Disposing solid wastes in a separate and fenced area is a proper way of managing solid wastes, provided that the preparation and the management of the disposal areas is done according to the indications included in the design prepared by the expert which is in line with international best practices and takes into account all comments already given in the previous LTA's quarterly report.

The landfill design and plan shall also include the design of the progressive filling of the land fill area with the wastes and a plan for its final recovery.

A careful revision of the slope stability in the project area should be carried out to identify potential unstable areas and to identify the relevant stabilization measures (if and where needed).

The Contractor shall prepare and submit to NNP1PC the quarry exploitation and final recovery plan as soon as possible, as well as the spoil disposal area filling procedures that shall include also a final recovery plan for the area.

A final recovery plan is necessary for the construction areas that will be abandoned at a certain point of the construction activities and that are not located below the Full Supply level of the main reservoir or of the re-regulation reservoir.

The Contractor shall consider all the necessary measures to suppress the dust emission in the aggregates crushing plant to acceptable level as per the existing regulations and provide workers with adequate PPE.

7.5 Environmental and Social Management and Monitoring Program (ESMMP)

7.5.1 General

As part of the ESIA an Environmental and Social Management and Monitoring Plan (ESMMP) was produced by NNP1PC to undertake the environmental and social management measures to be implemented to satisfy the Construction Phase ESIA commitments.

At an average of over two per month, ESD has received, processed and approved 42 Site Specific (SS) ESMMPs since December 2013. Retrospective approvals were given for 12 access roads works, started before EMO establishment. From April to June 2015 the EMO received and approved twelve SSESMPs for civil works and transmission line construction. The list of these SSESMP is shown in Table 7-6. There is no longer a backlog of plans awaiting submission from the contractors.



Table 7-6: SS ESMMPs received between April and June 2015

No	SSES MMP Title	Received Date	EMO Approved Date
Access road construction			
1	Site-Specific ESMMP-CP for A Road	29-Apr-15	4-May-15
2	Site-Specific ESMMP-CP for P1 Road	27-May-15	10-Jun-15
3	Site-Specific ESMMP-CP for P2 Road	27-May-15	10-Jun-15
4	Site-Specific ESMMP-CP for T1 and T2 Road	21-May-15	10-Jun-15
5	Site-Specific ESMMP-CP for T4 Road	23-May-15	10-Jun-15
6	Site-Specific ESMMP-CP for T9 Road	23-May-15	10-Jun-15
7	Site Specific ESMMP for T13 Road	21-May-15	10-Jun-15
Dam Construction			
8	Site-Specific ESMMP-CP for Slope Protection and Slope Drainage of main dam	06-May-15	06-May-15
9	Site-Specific ESMMP-CP for Installation & Operation of RCC Belt Conveyor system	20-Jun-15	24-Jun-15
Camp Construction			
10	Site-Specific ESMMP-CP for Contractor's Camp	14-May-15	11-Jun-15
230 kV Transmission Line Construction			
11	Site-Specific ESMMP-CP for Clearing Right of Way	29-Apr-15	18-Jun-15
12	Site-Specific ESMMP-CP for Foundation Erection and Stringing Work	12-Jun-15	18-Jun-15
Total		12	12

7.6 Water Quality Monitoring

The water quality monitoring by the EMO is established to assess the NNP1 impacts (construction and waste effluences) on water quality of the Nam Ngiep River. The location of the water quality monitoring stations is shown in the Figure 7-9.

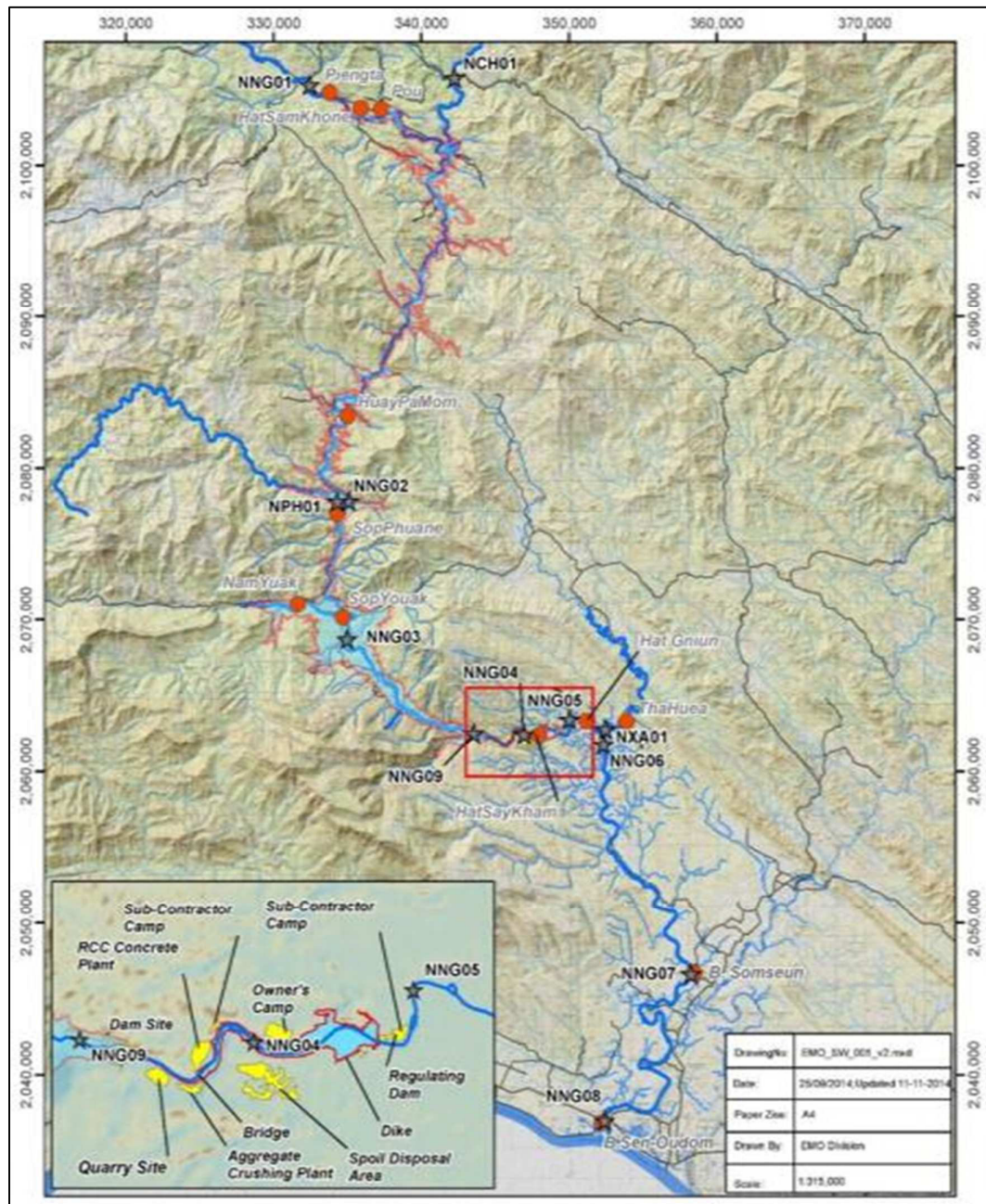


Figure 7-9 Surface Water Quality Monitoring Locations

Of the twelve total monitoring locations, six are located upstream of the Project Site, one at the Project Site, one immediately downstream of the Project Site and four further downstream, down to the confluence with the Mekong River. List of water quality monitoring locations are given in the Table 7-7.



Table 7-7: List of Water Quality Monitoring Locations

Site Code	Location station
NNG01	Nam Ngiep Upstream of Ban Phientga
NNG02	Nam Ngiep Upstream of Nam Phouan Confluence
NNG03	Nam Ngiep Downstream of Ban Sop-Yuak
NNG09	Nam Ngiep Upstream Main Dam
NNG04	Nam Ngiep Downstream RT Camp
NNG05	Nam Ngiep Upstream of Ban Hat Gniun
NNG06	Nam Ngiep Downstream of Nam Xao Confluence
NNG07	Nam Ngiep at Ban Somsuen
NNG08	Nam Ngiep at the Bridge of Road 13
NCH01	Nam Chiane at the Bridge of Road 1D
NPH01	Nam Phouan Upstream of Nam Ngiep Confluence
NXA01	Nam Xao Upstream of Nam Ngiep Confluence

The water quality parameters are monitored according to the following program

- Biophysical parameters fortnightly (conductivity, DO, pH, turbidity, temp, TDS)
- Biophysical, chemical and bacteriological monthly
- Ad Hoc and Emergency monitoring

The monitoring program is managed by United Analyst & Engineering Consulting Company by adopting Standard Testing Laboratory ISO/IEC 17025:2005 from the Thai Industrial Standards Institute, Ministry of Science and Technology.

The results of the monitoring carried out from October 2014 to September 2015 are summarised in the Figure 7-10 below which illustrate results on measuring key water quality parameters.

The trends show that NNP1 site is not contributing significant discrepancies of water quality conditions at the project site. Levels are about the same above and below the site. Trends also follow dry-wet season cycles. In some measurements, the Chemical Oxygen Demand (COD) and Total Coliform (20 times) and Faecal Coliform (100 times) exceeded Lao government water quality standard. However, this higher values are most probably not related to the Nam Ngiep 1 Project construction activities. Other remaining parameters met with Lao government surface water quality standards.

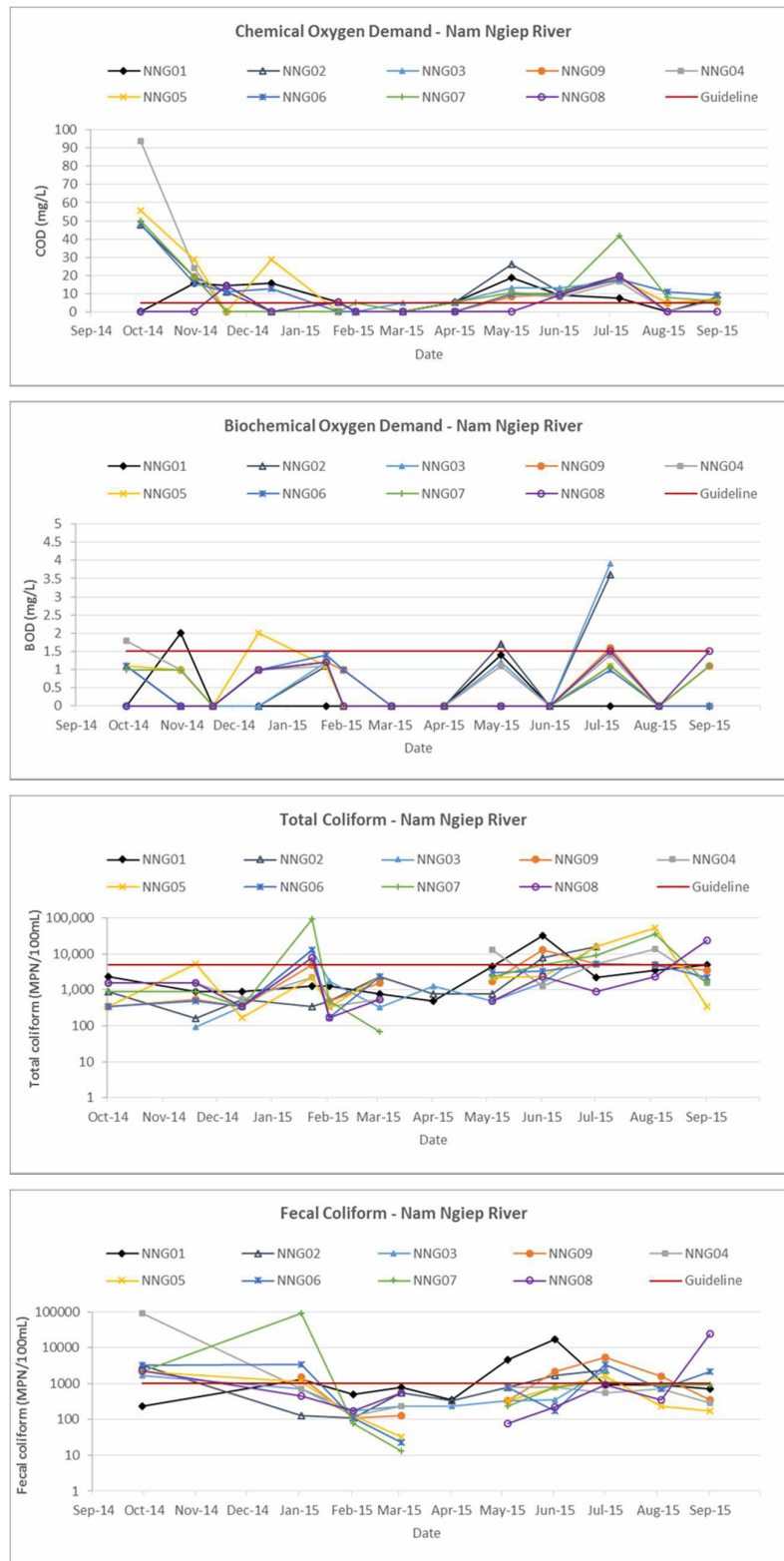


Figure 7-10 Results on WQM Program from October 2014 to September 2015

Although other parameters met with guidelines following the latest sampling event, LTA recommended that water quality parameters of COD, BOD and NH₃-N, Total and Faecal coliform



to be measured from the discharge water at workers' camps: as indicated in the previous LTA's Quarterly Report, in the first quarter 2015 these parameters exceeded Lao government standards at Sino-Hydro Camp. In addition, Colour exceeded Lao government guideline for drinking water sampling from RT and Sino-Hydro camps. pH value did not meet with Lao government drinking water quality standards, following sampling from EMO office and Sino-Hydro Camp.

The results of these measurements are reported in *Figure 7-11*

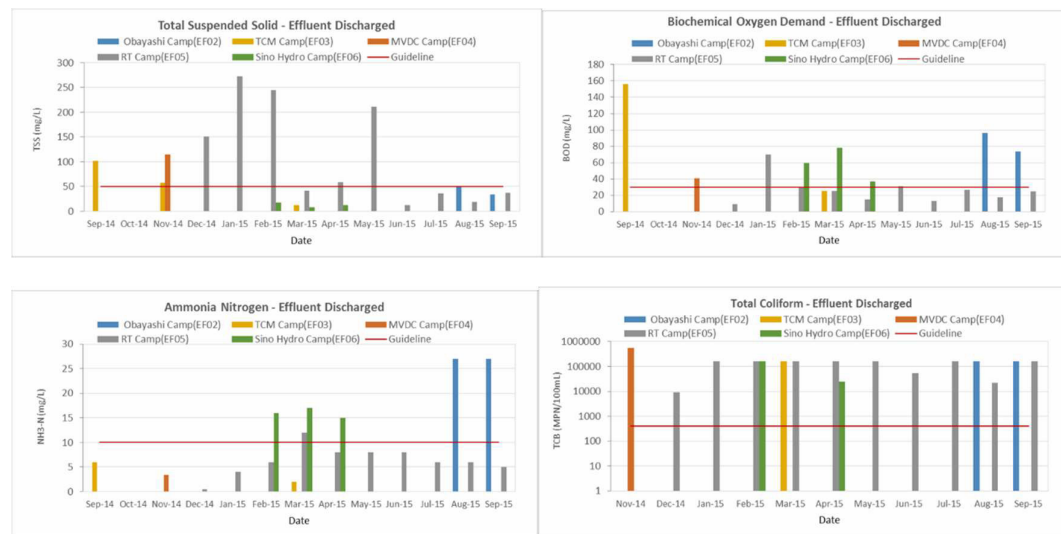


Figure 7-11 Results on Camp effluent discharge September 2014 to September 2015

The graphs above show that all the measured parameters are exceeded at list in the effluents of some of the camps, but the most evident is the Total Coliform analyses that show that the level of exceedance is 200 times and more in all the measures taken!



8 Environmental Plans

8.1 Biodiversity Offset Planning and Implementation

8.1.1 Scope and Progress

The scope of the Biodiversity Offset Plan is to identify suitable biodiversity areas where to implement biodiversity protection activities to compensate the loss of biodiversity related to the project implementation.

In compliance with the ADB Facility Agreement, the Biodiversity Advisory Committee (BAC) was established on 30 May 2015 to provide technical advice for the preparation and implementation of the Biodiversity Offset Management Plan and the biodiversity management within NNP1 watershed.

BAC comprises of 2 international and 1 local biodiversity expert

BAC had their 1st mission on 21-31 July 2015 with the objective to:

- Provide opinion and recommendation on biodiversity baseline survey
- Provide option and technical workshop on biodiversity offset concept (including offset site selection criteria)
- Provide opinion and recommendations on the biodiversity offset framework's

Biodiversity Baseline Consultant was appointed by NNP1PC since late April 2015. The field survey was commenced in the early June 2015 with camera trap installation, species (animal and plant) survey, and habitat assessment. The survey comprises the following activities;

- 104 cameras were successfully installed in middle of June. The first data retrieval was made in middle of July. Expected to continue camera trap recording until September
- Some species surveys like mammals, birds, and plant were completed by end of June while reptile and amphibians survey continued until middle of July
- GIS/Remote sensing in combination with ground truth survey was completed for habitat assessment at the end of June

The progress of survey works including the result of camera trapping was shared during the missions of NNP1PC Biodiversity Advisory Committee (BAC) and ADB Biodiversity Consultant in July 2015. It was recommended that the camera trap record was extended until mid of September 2015 to ensure a longer observation of certain species.

The Biodiversity Baseline Survey Report was submitted in draft on 1 August 2015 and the final version was submitted on 30 September 2015. This biodiversity baseline survey report is a key document for the development of a Biodiversity Management component of the NNP1PC WMP.

The NNP1 EMO also progressed with the procurement of a Biodiversity Consultant in August 2015. The interested consulting companies were evaluated by NNP1PC EMO and BAC as underqualified principally for CV profile of the proposed specialists/experts. It was then recommended by BAC to continue hiring the current Biodiversity Survey Consultant who is already familiar with the Project area and Lao context as an assurance of the quality of work. The work is expected to be in parallel with the NNP1 WMP development and to be coordinated with NNP1 Watershed Consultant.



The NNP1PC is achieving a good progress on the offset site selection process. The NNP1PC, ADB Biodiversity Consultant, and BAC members had a consultation workshop with PONRE of Xaysomboun and Bolikhamxay in regards to the concept of biodiversity offset and the information on proposed offset sites within the Provincial administrative area. It was recommended by BAC members that the ground survey is commenced as an initial assessment of biodiversity values within the proposed sites. The outcomes will serve as a key reference for making decisions on the offset site selection through a consensus building workshop planned in September 2016.

The preparation of the Watershed Management Plan started in May 2015 and, according to information received during the previous visit, was supposed to be completed in December 2015, but there have been poor progresses since several inputs (Integrated Spatial Plan of Xaysomboun Province) have been delayed. The new deadline for the WMP delivery has been shifted to September 2016, all the other deadlines are supposed to be shifted accordingly.

8.1.2 LTA's Recommendations

In accordance with the recommendations made by the Biodiversity Experts (IAP and ADB) the LTA agrees that:

- Watershed is not suitable for offset, but some interesting populations (e.g. Lao Newt, Northern White-cheeked Gibbon, Owston civet) deserving conservation interests, were found;
- The three areas assessed (Phou Sod, Phou Xe and Phou Sithone extension) are not suitable for the purpose of biodiversity offset;
- The new offset options are:
 - Nam Mouane (that represents the priority option, but has some constraints for access);
 - Locate the offset area in other provinces (e.g. Khoun Xe Nong Ma, Xe Sap);
 - Funding through Environmental Protection Fund;
 - Xaysomboun province parallel options on potential offsets outside watershed (in Xaysomboun or Bolikhamxay provinces) should be explored as well.

The Biodiversity Offset shall be developed as per the following steps:

- Step 1: survey 2 sites (expert Lao and International team) by March 2016;
- Step 2: Biodiversity Advisory Committee shall review TORs and draft reports;
- Step 3: by June 2016 the offset sites shall be valued and next steps agreed;
- Step 4: choose the offset site (by September 2016);
- Step 5: Institutional arrangements;
- Step 6: Proposed fund flow for the Biodiversity Offset.

8.2 Watershed Management Planning

8.2.1 Scope and Progress

The Watershed Management Plan is supposed to provide the overarching description of the existing conditions in the watershed (largely from existing information and from the ISP-



Integrated Spatial Planning), the institutional arrangements for the NNPIPC supported management program, identification of issues and proposed management activities.

The preparation of the Watershed Management Plan started in May 2015 and, according to information received during the previous visit, was supposed to be completed in December 2015, but there have been poor progresses since several inputs (Integrated Spatial Plan of Xaysomboun Province) have been delayed. The draft plan has been rejected by ADB. Comments have been that it is highly top down and developed with little or no community consultation, particularly in the watershed area that falls in the Houay Soup Resettlement Area

Biodiversity sub-plan team has been recruited, but it will be necessary to recruit Watershed Management specialists and relaunch the WMP that should be a unique integrated plan prepared by one integrated team that shall include also biodiversity and fisheries experts.

The new deadline for the WMP delivery has been shifted to September 2016; all other deadlines are supposed to be shifted accordingly.

8.2.2 LTA's Recommendations

In terms of watershed management, it is important at his stage to keep monitoring the water quality upstream of the construction site for at least one full hydrological year, to obtain data about the water quality of the river in natural conditions: without this it will be impossible to accurately estimate the impact of the project on the water quality of the river. We understand that the EMO is regularly monitoring the water quality.

Moreover, as recommended by the IAP, it is important to:

- to reduce, simplify and integrate the sub-plans and the consultancies;
- to include the inputs expected from the Integrated Spatial Planning of the Xaysomboun Province, which has been delayed;
- to include the inputs from the Biodiversity surveys, to be completed by March 2016;
- prioritize the activities in Watershed Action Plan against PONRE/WMO capacity;
- avoid duplications and clearly identifying roles and responsibilities;
- focus priorities e.g. monitoring illegal logging, protecting forest

8.3 Houay Soup Resettlement Area – Environmental Issues

The Project's resettlement site can be divided into three areas:

1. residential and agricultural land in 1,750ha already allocated to the Project (already clarified);
2. extended residential and agricultural land in 648ha (additional housing plots, catchment for the Gravity Fed Water Supply System, irrigation pond, agricultural land use), for which a land conversion and degazetting may be feasible and agreeable with MoNRE, reaching the same status as for the 1,750 ha;
3. forest area of 3,715ha in the PFA, which shall be usable by the PAPs.

NNPI received formal land use right for 648 ha inside National Protection Forest (NPF) on 15 August 2015 and is requesting endorsement by MoNRE on PAP's sole use of 3715 ha for livelihood activities. MoNRE issued written acceptance of this proposal in December 2015, and a formal decree is under preparation.



Master plan for Houay Soup was acknowledged by GoL in September 2015.

Construction shall start during the next dry season and shall include: access road, 22 kV distribution line, 6 wells, 44 houses (number depending in principle on the final choice by Hatsaykham PAPs), village hall, health centre, pre- primary school, paddy fields and solid waste disposal.

8.3.1 LTA's Recommendations

The EMO and SMO shall strictly monitor the implementation of the construction activities to make sure that all the necessary activities are completed in time to allow the resettling of Hatsaykham PAPs in 2016 and 2LR in 2017, before reservoir impoundment starts.

8.4 Other Environmental Issues

8.4.1 230 kV Transmission Line

The field work for the transmission line have started: Right of Way clearing has been conducted for 24 km and some foundation works have been completed. According to the contractor by early 2017 foundations are supposed to be completed, tower erection is expected to be completed by the end of 2017 and stringing by the second quarter of 2018.

8.4.2 Reservoirs Clearing

The preparation of a Biomass Removal Plan for Hydropower Projects is required by the Decree on EIA (Article 13f, Decree No. 112/PM, 16 Feb 2010). In order to get the Environmental Compliance Certificate for Hydropower Projects, the Project Developers must follow the different phases specified in this step-by-step version of the Environmental Guidelines for Biomass Removal (EGBR) for the preparation of the Biomass Removal Plan (BRP). NNP1PC already recruited a Consultant to develop the BRP. The plan was finalized in the middle of July 2015 incorporating several reviews and comments from NNP1PC, ADB and MONRE.

The plan was approved by MONRE on 29 July 2105 and submitted to ADB on 31 July 2015. NNP1PC has appointed the Biomass Clearance Contractor. The clearance schedule is expected to start in the dry-season of 2015-16 and be completed before the wet season of 2018. NNP1 will also procure the consultant to develop and monitor ESMMP and SSESMP for the clearance work as well as UXO survey/clearance contractor. According to the schedule of the activities provided by the Biomass Clearance Contractor the following deadline are envisaged (see Table 8-1)

Table 8-1 Work Schedule for biomass removal activities

Time frame	Key milestones
October- November 2015*	Mapping and GIS data overview
November - December 2015*	Implementation Plan
November - December 2015	Meeting with GOL and Stakeholder on plan
December 2015*	Team Mobilization and camp set up in Zone 1
January 2017	Team Mobilization and camp set up in Zone 2,3
December 2015 – January 2016	Survey & Demarcation Blocks (Zone 1)
From January 2017	Survey & Demarcation Blocks (Zone 2 & 3)
January – December 2016	Cutting and stockpiling in Zone 1



Time frame	Key milestones
January 2017 – May 2018	Cutting and stockpiling in Zone 2 & 3
Mar-May 2016, Jan-Jun 2017 and Jan – Apr 2018	Burning operation
January – June 2018	Monitoring and reporting
June 2017	Demobilization of camp in Zone 1
June 2018	Demobilization of camp in zone 2& 3

*The deadline has been shifted to March 2016

8.4.3 LTA's Recommendations

As far as Transmission Line construction is concerned, LTA recommends that EMO monitors that the corridor clearance takes place only inside the corridor designated area.

Referring to the Biomass clearing, the plan looks well-structured and rationally organized and the EMO has the experience of the similar activities carried out in Nam Theun 2. However some discussions are still necessary to adequately define the areas to be cleared from vegetation taking into account: the need to remove as much as possible all the biomass that is going to be submerged by the water during the reservoir impoundment (to reduce relevant GHG emissions and the decay of the water quality), the constraints related to the accessibility to the clearing sites (it is mandatory to avoid the opening of any new access to the area) and the need of preserving some vegetation in the buffer zone area to reduce the risks of slope instabilities induced by the periodical water level variation in the reservoir.

A positive point is the fact that NNP1PC intends to reuse the removed biomass for biochar² to improve soil fertility in the Houay Soup resettlement site. This is a very good solution and opportunity to reuse the biomass and to reduce/avoid the use of chemical fertilizers. However, the quantity of biomass removed that is going to be used for such purpose is only a fraction of the whole biomass present in the submerged area. Therefore, other possible reuses of this biomass shall be evaluated.

² According to **International Biochar Initiative** „Biochar is a solid material obtained from the carbonization of biomass. Biochar may be added to soils with the intention to improve soil functions and to reduce emissions from biomass that would otherwise naturally degrade to greenhouse gases. Biochar also has appreciable carbon sequestration value. These properties are measurable and verifiable in a characterization scheme, or in a carbon emission offset protocol. Biochar can be an important tool to increase food security and cropland diversity in areas with severely depleted soils, scarce organic resources, and inadequate water and chemical fertilizer supplies. Biochar also improves water quality and quantity by increasing soil retention of nutrients and agrochemicals for plant and crop utilization. More nutrients stay in the soil instead of leaching into groundwater and causing pollution”



9 Social Issues

9.1 Status of Activities

The LTA Report No. 3 identified the following critical issues in the implementation of social safeguards:

- Issuance of cut-off date;
- Approval and issuance of the compensation unit rates;
- De-gazetting of additional 648 hectares to increase the resettlement area to 2,393 hectares;
- Construction of houses for Hatsaykham PAPs scheduled to start on October 2015;
- Submission of updated IEE for Houaysoup,
- PAPs' decision between resettlement in Houaysoup and self-resettlement;
- Difficulty in the implementation of the Public Health Action Plan (PHAP) after the resignation of the DM for Social Development and Monitoring and;
- Inadequate medical facilities and qualified medical staff in the construction site and in the labourers' camps.

The following Table 9-1 shows the status of the above issues at the time of the December 2015 LTA site visit.

Table 9-1 Status of Outstanding Social Issues as of LTA Mission of December 2015

No	Critical Social Issues	Status as of December 2015
1	Issuance of the cut-off date	Not Resolved: A cut-off date was issued on 11 April 2014. NNP1C will clarify if the PRLRC will issue another cut-off date for each zone after the completion of asset registration.
2	Approval and issuance of compensation unit rates	Partly Resolved: The PRLRC finalized the compensation unit rates in August 2015 and disseminated it. But PAP's approval of the unit rates is hindered by three concerns: (i) non-compensation of upland area uncultivated for more than three years, (ii) 3 million Kip flat rate compensation of a grave and (iii) non-compensation of land above 320 meters a.s.l. except those meeting the criteria set by the government. National law sets the compensation provisions on first two items. ADB SPS enables full compensation for land above 320 m a.s.l. provided this land is rendered inaccessible or unviable due to impoundment.
3	De-gazetting of additional 648 ha to increase the resettlement area to 2,393 ha	Resolved: The NNP1PC got the approval of Department of Land Management and Administration under the MONRE (MONRE Decision 4466/2015) for the de-gazetting and the land's allocation for the resettlement site.
4	Construction of houses for Hatsaykham PAPs scheduled to start on October 2015	Not Resolved: The construction can only start after the compensation is paid, which can only be done after ADB's approval of Zones 3 and 5 REDP. ADB is yet to



No	Critical Social Issues	Status as of December 2015
		receive their final versions. The final choice survey, which will tell the number of households opting for the resettlement site, is still being done.
5	Submission to ADB for endorsement of updated IEE for Houaysoup, including access road, is required not later than July 2015	Resolved: The IEE was submitted to ADB on 26 October 2015 and as approved on 12 November 2015.
6	PAPs' decision between resettlement in Houaysoup and self-resettlement	Partly Resolved: One indicative choice survey was done in Zone 3 and 5 in September and another in November 2015. The indicative choice survey for 2LR is scheduled to be completed by 31 March 2016.
7	Difficulty in implementing the PHAP due to the resignation of the DM for Social Development and Monitoring.	Not Resolved: The position of DM for Social Development and Monitoring is still vacant.
8	Inadequate medical facilities and qualified medical staff in the construction site and in the labourers camps	Partly Resolved: The Lao Labor Law has 11 standards for health and safety and compliance varies among contractors on each standard.

9.1.1 Resolved Issues

At the time of the LTA mission of December 2015, two of these issues were already resolved. One is the de-gazetting of additional 648 hectares as addition to the resettlement area. The Department of Land Management and Administration gave its approval through MONRE Decision 4466/2015.

The other is the submission to ADB for endorsement of an updated IEE for Houaysoup, including access road. ADB's endorsement was obtained on 12 November 2015, much later than the target date of 31 July 2015.

9.1.2 Partly Resolved Issues

Three issues are partly resolved indicating the effort exerted towards their resolution:

- First is the approval and issuance of compensation unit rates. The PRLRC has finalized and disseminated the compensation unit rates. But PAP's approval of the unit rates is hindered by three concerns. The first two are legally-mandated requirements: non-compensation of upland area uncultivated for more than three years and 3 million Kip flat rate compensation of a grave. The third item is the compensation for land located above 320 meters a.s.l. Compensating land in this location is limited to the following: (i) remaining portion that is less than 20% of the land parcel; and (ii) land parcel that is rendered inaccessible or unusable by project structures and activities. The PAPs in 2UR who plan to self-relocate prefer that all their landholdings in the project site be compensated, including those above 320 m a.s.l., because they will be unable to use these from their new domicile given the distance. However, the project does not yet know the locations of their new domiciles because no self-relocation plans per household have yet been prepared. Even a format for these plans have not yet been developed. The GoL will not allow the affected households to move just anywhere. It must approve the new location based on certain criteria (e.g. presence of receptive relatives and ownership of land).



- The second partly-resolved issue is about the PAPs’ decision between resettlement in Houaysoup and self-resettlement. This decision is necessary for two reasons: to give the project a concrete basis in crafting the REDP sub-plan and to configure the actions to ensure that all resettlers, regardless of their choice, will have their livelihood restored if not enhanced relative to pre-project levels. This decision is emerging in Zone 3 and 5 where a two-round (September and November 2015) indicative choice survey was completed and the final choice survey is in progress.

In 2LR, the indicative choice survey is still slated to 31 March 2016. The target of its final choice survey will be 6 months after the Hatsaykham’s resettlers move to the resettlement site. The PRLRC planned to meet the PAPs to facilitate asset registration and help them make a decision. The 2UR registration team is beefing up the 2LR team for faster completion of asset registration. The two-month advance progress of dam construction exerts more urgency to complete this activity.

- The third partly-resolved issue refers to medical facilities and qualified medical staff in the construction site and in labours’ camps. The Lao Labour Law has 10 standards for health and safety contained in Articles 123-126. Based on the data provided by the SMO and interviews of staff of two sub-contractors (Song Da 5 and Right Tunnelling Co. Ltd. Thailand), compliance varies among firms on various provisions. The highest compliance is on the requirement of one medicine cabinet per labour unit with less than fifty employees. All the five firms eligible under this requirement complied having reported to have a First Aid Kit (see Table 9-2). Even the seven non-eligible firms have a kit.

Table 9-2 Contractors and Subcontractors Compliance with Health and Safety Standards in 2013 Lao Labor Law

No	Standard	Number of Eligible Firms	Compliant Firms	Non-Compliant Firms	No Data
1	One employee responsible for health and safety per 100 employees or less ¹	12	5	2	5
2	At least one employee responsible for health and safety per labor unit working in construction ²	12	7	1	4
3	One health and safety unit per labor unit with more than 100 employees ²	6	1	5	0
4	Training of employees responsible for health and safety ³	12	2		10
5	One medical practitioner per labor unit located in suburbs or remote area with fifty or more employees ²	7	1	6	0
6	One medicine cabinet per labor unit with less than fifty employees ²	5	5	0	0
7	Detailed record and report to the Labor Administration Agency for accident requiring four or more days off work ³	No incident to warrant a report in 2 contractors			10
8	Report to the Labor Administration Agency within three days for accident and occupational disease causing major injury or death ³	No incident to warrant a report in 2 contractors			10
9	Once a year medical examination for all employees ³	12	2	0	10
10	Twice a year medical examination for all employees in dangerous areas ⁴ or night work ³	10	2	0	10
¹ Nine firms reported to have first-aiders but these are not necessarily employees responsible for health and safety. Data are from SMO					



- ² Labor unit: legally registered production, business or service units in the economic and social sector registered according to laws and regulations (Article 3 Lao Labor Law), Data from SMO. .
- ³ Data from interview of administrative officer of two contractors (Song Da 5 and Right Tunnelling Co. Ltd. Thailand) on 10 December 2015 during the LTA mission.
- ⁴ Dangerous areas is not defined but hazardous work refers to all types that entails elements of dangerous risks in the health of the body, the mind, the psychological make-up or personal safety of the employee (Article 3).

Another legal requirement where compliance is relatively high is on having employee responsible for health and safety per labour unit working in construction. Seven firms out of eight where data are available have such employee. Five firms have even more than one. For instance, Songda5 has 62 looking after 877 employees while TMC has 4 for 85 employees. PKCC has none.

The highest number of non-compliance is on the requirement of one medical practitioner per labour unit located in suburbs or remote area with fifty or more employees. Only one firm has a doctor (Sino-Hydro). Cases requiring the attention of medical practitioner are brought to the district and provincial hospital. The district hospital received 10 cases in one year from among the project workers. No information was obtained from the provincial hospital but Songda5 alone sent 30 patients in the last three months. . .

The Borikan District Hospital is better equipped and better staffed than an average hospital in Laos. This is seen in its number of beds per 1000 population (2.28 beds versus 1.50 national average) and number of physicians per 1000 population (1.14 physicians versus 0.20 national average). While adding the 1,943 workers and 131 camp followers to its service coverage will not put the Borikan District Hospital at par or below national average on these capacity indicators, they increase the demand on the hospital and bring down the pre-project level supply-demand ratio (see Table 9-3). Although patients, except the poor, pay for services in public hospitals under Ministerial Decree No. 52 (1995), the amount is equivalent to only 63% of the expense. The government, external donors and social health protection coverage are the sources of the rest. The average outpatient in a national hospital pays 68,152 Kip out-of-pocket for the medicine, ancillary supplies and services obtained. This means that the total cost of the service is 108,179 Kip with 40,026 Kip paid by other sources. This proxy value indicates the amount that these sources pay or every outpatient sent to the Borikan District Hospital.

Table 9-3 Number of Hospital Beds and Physicians Per 1000 Persons in Borikhan District Hospital: December 2015

Item	Number of Hospital Beds	Number of Physicians
Medical Care Capacity Indicators in Borikhan District Hospital ¹	10 hospital beds	5 physicians
National Ratio (2012) ²	1.50 beds/ 1000 persons	0.20 physician/1000 persons
Borikhan District Hospital Ratio Based on 2012 Population (43,823 persons) ³	2.28 beds/1000 persons	1.14 physicians/1000 persons
Borikhan District Hospital Ratio Based on 2012 Population (43,823) + Total Number of Project Workers (1,943) = 45766 persons) ⁴	2.18 beds/1000 persons	1.09 physicians/1000 persons
Borikhan District Hospital Ratio Based on 2012 Population (43,823) + Total Number of Project Workers (1,943) + Total Number of Camp Followers (131) = 45,897) ⁵	2.17 beds/1000 persons	1.08 physicians/1000 persons
¹ Data provided by the hospital staff interviewed on 10 December 2015. ² http://data.worldbank/indicator/SHMED.BEDS.75 and http://data.worldbank/indicator/SHMED.PHYS.75 ³ Population data from Laos National Statistical Center Internal Report ⁴ Data on number of workers are from Obayashi Corporation. 2015 Workers List (31 November 2015). Tabulated Data Submitted by to NNPIPC: December 1, 2015 ⁵ Data on number of camp followers are provided by the SMO staff interviewed on 10 December 2105		



9.1.3 Unresolved Issues

The first of the three unresolved issues is the issuance of cut-off date. While a cut-off date was issued on 11 April 2014, NNPIC will still clarify if the PRLRC will issue another cut-off date for each zone.

The second issue is on the construction of houses for Hatsaykham's PAPs. Its start was scheduled on October 2015. One policy principle of involuntary resettlement safeguards in ADB 2009 Safeguard Policy Statement is to pay compensation and provide other entitlements before physical and economic displacement. Further, requisite to the release of payment which can be used for compensation is ADB's approval of the updated Zones 3 and 5 REDP which final version it has yet to receive. The final choice survey in Zone 3 and 5 is still underway. The information that it will produce on the number households who will move to the resettlement site is needed to know the number of houses to be constructed.

The third unresolved issue is the difficulty in implementing the PHAP due to the resignation of the DM for Social Development and Monitoring. The position is still vacant.

9.1.4 LTA's Recommendations

Two of the unresolved issues and two of the partly resolved issues are on resettlement. The unresolved issues are the cut-off date and housing construction in the resettlement site. The partly resolved issues are on the approval and issuance of the compensation rates and the PAPs decision between the resettlement site and self-resettlement.

The main hindrance to the issuance of the cut-off date is the incomplete asset registration. In 2UR, the revised estimate of the full-supply water level requires a corresponding estimate of the inundated assets. In 2LR, 48 households refused the registration of their assets. The project's planned actions for 2UR are to re-peg the revised full supply water level line and carry out the final asset registration based on the pegged spots. In 2LR, the plan is for senior local officials to have a dialogue with the PAPs on the need to register their assets and decide on the compensation choice. The LTA is optimistic that these actions will resolve the issue on the cut-off date.

The action to resolve the issue on the housing construction in the resettlement is the submission of the draft REDP sub-plan for Zone 5 to ADB. The compensation to be paid will be based on the sub-plan. The LTA recommends to strictly keep the deadline and to beef up internal capacity with outside expertise if needed to complete the documents on time.

On the issue on compensation rates, the issues raised by the PAPs will not be fully resolved given the limitations of the national law and ADB policies as well as the project's capacity to pay. The task is to deepen the understanding of the PAPs on the following: legal limitations in setting the unit rates, valuation and computation methods used, contribution of over-and-above benefits to meeting their aspirations and making use of the grievance mechanism. The steps taken to carry out these tasks include various information dissemination activities, VDC meetings, study tours and the transference of staff activities to Paxan and Thathom. The LTA encourages NNP1PC to carry further this transference of staff and functions, including procurement, to the project site to increase efficiency and speed. It also recommends the strengthening of the grievance mechanism in expectation of the number of cases that may arise given the level of dissatisfaction over the compensation. The issue of PAPs decision between the resettlement site and self-resettlement is expected to be resolved by the result of the choice surveys.

The remaining outstanding issues are on health: One is the difficulty in implementing the PHAP due to the resignation of the DM for Social Development and Monitoring. Hiring the Team Leader



for Health partly addresses the first issue. He has two staff under him. The LTA recommends that the Health Team will update the PHAP in the light of past accomplishments and changes in the ground situation, including the self-resettlement of a substantial number of households. In the updated plan there is a need to translate the objectives of each subprogram to quantifiable targets and in turn into actionable activities and resource allocation. This recommendation is envisioned to ease implementation, monitoring and evaluation.

Another issue is the inadequate medical facilities and qualified medical staff in the construction site and in the labourers, as was raised in the May 2015 mission. The LTA requires that the project and its contractors will meet the standards set in the Lao Labour Law. The project must also estimate the spill over demand that is taken care of by the district and provincial hospitals. Based on the demand, it can implement corresponding and appropriate support measures based on the type of cases brought to these hospitals from labour camps. For instance, snake bites were among the cases brought to the provincial hospital. The incidence of snake bites is due to two reasons: inability of the foreign workers to easily discern the presence of snakes camouflaged in their environment due to unfamiliarity and lack of knowledge to move in a way to warn the snakes of their presence. But the provincial hospital may have limited capacity to handle snake bites.

9.2 Social Management Action Plan Implementation

The objective of the Social Management Action Plan (SMAP) is to secure Hatsaykham from the negative impacts of the project's construction activities. To attain this objective, the plan sets to accomplish 16 tasks by carrying out 23 activities. These activities are translated into 64 sub-activities. The sub-activities rather than the activities are assessed for completion because these are more concrete and directly verifiable. Their degree of completion is used as indicator of the attainment level of the tasks and of the entire plan. The completion of the sub-activities is established using information gathered from key informants and group interviews and on-site observation.

9.2.1 Tasks Scheduled for Completion on 2014-2015 Period

Based on the plan's timeline, six of the 16 tasks were scheduled to be completed within the 2014-2015 period. These tasks are as follows: (i) village capacity development set-up, (ii) police capacity set-up and development, (iii) code of conduct set up, (iv) workers' camp initial set-up, (v) camp regulations, and (vi) facilities for camp followers. The advance of these six tasks as of December 2015 is shown in the Table 9-4.

Table 9-4 Tasks of Social Management Action Plan with Scheduled Completion within 2014-2015 - Status as of December 2015

No	Tasks	Number of Sub-activities	Status of Sub-Activities					Estimated Completion Rate ¹
			Done	Not Done	Partly Done	Not Applicable	No Data	
1	Village capacity development set-up,	6	4	2				67%
2	Police capacity set-up and development,	4	3	1				75%
3	Code of conduct set up	7	5		1	1		92%
4	Workers' camp initial set-up		3		1	1		88%
5	Camp regulations,	8	5		1		2	92%
6	Facilities for camp followers	6	2	1		3		67%



No	Tasks	Number of Sub-activities	Status of Sub-Activities					Estimated Completion Rate ¹
			Done	Not Done	Partly Done	Not Applicable	No Data	
Estimated Average Completion Rate							80%	
¹ Completion rate is estimated by assigning a value to the status: Done (1.0), Not Done (0), Partly Done (0,5) and multiplying the average by 100 to get the rate expressed in percentage. Sub-activities rendered not applicable and have no data are excluded.								

Six sub-activities are laid down to complete the first task (village capacity development set-up). Only four of these are done. Village authorities were not trained on the rights of women and children and there was no workshop with NGO as planned. The four sub-activities comprising the second task (police capacity set-up and development) are all done. But the implementation of the first sub-activity is modified by building four instead of three bedrooms in the police station, installing one kitchen and leaving out the detention room.

The third task (code of conduct set up) has seven sub-activities. Five are done while one is partly done. While the workers got to learn and signed the code of conduct, it was observed that in two workers' camps it was not posted in common areas as planned. One sub-activity was not applicable. It was the prohibition of project vehicles to stop within 500 m from Hat Gniun school except in emergency cases. But due to presence of houses and shops in the designated area, vehicles had to stop for various reasons.

Among the five sub-activities comprising the fourth task (workers' camp initial set-up), three are done, one is partly done and one is not applicable. The planned leisure facilities for workers were done in six camps but still under construction in two. The SMO deemed that sub-activity of providing SSESMMMP-CP for the camps and follow it in constructing the camps is under the EMO and must not be implemented as part of the SMAP.

The fifth task (camp regulations) has eight sub-activities, five of which are done. The plan to have a logbook to register every visitor and record the required details was done in one of the two camps visited but not in the other. Two sub-activities were noted to be done in one camp but there was no information on the others. One sub-activity is on drug testing of workers and another on the placement of female workers' representative.

The last task (facilities for camp followers) has six sub-activities. Two are done and one is not done. There is no emergency facility for workers as planned. Three of the sub-activities are not applicable. Two are on the cost sharing among the contractor, camp followers and developers for emergency cases and damages resulting from the camp followers' behaviour. The cost arising from emergency cases and damages involving camp followers are not borne by the contractors. The third sub-activity which is not applicable is the support the school of Hat Gniun to cope with increased number of students. There is no surge in enrolment in this school.

The review of the component sub-activities shows that none of the six tasks is entirely completed. But the completion rate varies among the tasks. The highest completion rate is on policy setting and dissemination. The setting up of the code of conduct and camp regulations have 92% completion rate, respectively. The lowest completion rate is on capacity (village capacity) and physical (camp followers facilities) development at 67%, respectively. The overall completion rate of the six tasks is 80 percent.



9.2.2 Tasks Scheduled for Completion in 2018 and Overall Completion Rate

The rest of the 16 tasks are scheduled for completion at the end of 2018 or right before the project's commercial operating date³. Apart from the six tasks scheduled for completion within the 2014-2015 period, six other tasks are translated into sub-activities. The sub-activities of the remaining four are not included in the SMAP⁴. The implementation of the sub-activities composing the six tasks scheduled to be completed at the end of 2018 nonetheless has begun (Annex 2). But the number of sub-activities implemented varies among the tasks (see Table 9-5). For instance, none of the sub-activities on villagers skills training has begun. The average completion rate on these six tasks is calculated at 49 percent. For all the 12 tasks with sub-activities provided in the SMAP, the completion rate is 65 percent.

Table 9-5 Tasks of Social Management Action Plan with Scheduled Completion at the End of 2018 - Status as of December 2015

No	Tasks	Number of Sub-activities	Status of Sub-Activities					Estimated Completion Rate ¹
			Done	Not Done	Partly Done	Not Applicable	Unclear	
1	Liability of contractors	1	1					100%
2	Code of conduct implementation	7	2	4	1			36%
3	Villagers' skills training	5	0	3		2		0%
4	STD high risk group interventions	6	2	1		3		33%
5	SMO procedures	3	1			2		100%
6	SMO staff and training	4		1	1		2	25%
Estimated Average Completion Rate								49%
¹ Completion rate is estimated by assigning a value to the status: Done (1.0), Not Done (0), Partly Done (0.5) and multiplying the average by 100 to get the rate expressed in percentage. Sub-activities rendered not applicable and unclear are excluded.								

9.2.3 Result of the Implementation of SMAP and Other Measures

The result of the implementation of the SMAP and other contractor-initiated measures cannot be quantified yet due to absence of base line data. But the data gathered during the mission on following indicators can portray the situation: (i) number of camp followers per 1000 worker (67 camp followers); (ii) annual number of bar fights per 1000 workers (12.3 bar fights), (iii) annual number of thefts inside the camps per 1000 workers (3.5 thefts), (iv) percentage of annual theft cases solved (81.8 percent) (v) annual number of injuries and sickness among workers per 1000 (6.6 injuries and sickness), (vi) annual number of workers brought to the district hospital per 1000 (5.1 cases), (vii) incidence of malaria per 1000 workers (0) and (viii) number of sex workers per 1000 workers (13 women) and (ix) annual number of complaints received by LLU representatives (0)⁵. Among the measures that the contractors initiated are the distribution of impregnated

³ Nam Ngiep 1 Power Company- Social Management Action Plan. Nam Ngiep Hydropower Project (Lao Democratic Republic). March 2015.

⁴ These tasks are code of conduct monitoring, workers camp monitoring, STD prevention monitoring and villagers resilience to adverse impact. Nam Ngiep 1 Power Company- Social Management Action Plan. Nam Ngiep Hydropower Project (Lao Democratic Republic). March 2015

⁵ Based on the data from the SMO (number of camp followers and sex workers), Hat Gniun Police Post (number of bar fights and theft), Borikhan District Hospital (number of patients from workers' camps), Obayashi Corporation



mosquito nets, providing spousal and family accommodations to keep workers in the camp after work hours and strict enforcement of worker's contract provisions.

9.2.4 LTA Recommendations

The first recommendation is to update the SMAP based on the changes in the operating environment. The update requires the identification of new and emerging impacts as well as the persistent impacts. These impacts as much as possible must be translated into quantified data which will serve as the baseline of the updated plan. The data will be gathered through the records of the contractors and the government offices, estimates given by persons working for the contractors and the government, records of the SMO and physical observations. The baseline data is needed to set quantifiable targets and to ensure that the same indicators will be used in monitoring progress. The indicators used and data gathered in this mission can serve as the initial component of the set of indicators and baseline data. The updating will also be an opportunity to strengthen the plan by doing the following: (i) eliminate the sub-activities which are no longer applicable, (ii) ensure that all sub-activities are concrete and actionable, (iii) translate the tasks into quantifiable targets, (iv) merge the activities and sub-activities because their difference is not readily discernible, and (v) sharpen the dovetailing between tasks and sub-activities through the targets.

The second recommendation is to form and convene a Joint PAP-Contractor Committee instead of the Joint PAP-Workers Committee envisioned in the SDP⁶. The contractors are in better position to address the impacts of their operation on the communities than the workers. One of the tasks of the JPCC is to monitor SMAP implementation. A monitoring sheet can be prepared using the indicators derived from the targets. The sheets will be filled up periodically and the data will be compared to the baseline data to track the progress and problems in implementation.

The third recommendation is to strengthen the village skills training component in the SMAP and move the implementation of its component activities much earlier. The purpose is to enable the PAP to take advantage of the opportunities provided by the construction period in employment and market. When the PAP in the 2UR were asked to explain the 59% wage component of their income as shown in the SDP, they reported that many of them work in construction when there is an opportunity but they do not know how to be employed in the project.

9.3 Compliance to Labour Standards

Compliance to core labour standards and national standards is looked into for two reasons: (i) the project is within the scope of the application of 2013 Lao Labour Law (Article 6); (ii) ADB Social Protection Policies and Framework (2001) prescribes that compliance to the country's labour laws and core labour standards must be ensured (Paragraph 15 iv); and (iii) the Equators Principles (2013) stipulates that compliance to relevant host country's laws and applicable International Finance Corporation's (IFC) Performance Standards on Environmental and Social Sustainability (2012) must be addressed (Principle 3). Provisions on core labour standards are contained in IFC Performance Standards No. 2 (Labor and Working Conditions). Three of the seven private sector banks financing the project are Equators Principles Financial Institutions (EPFI)⁷. Information

(number of injures and sickness among workers), LLU representative (complaint on labor practices) and Song Da 5 Joint Stock Company and Right Tunnelling Co Ltd (number of malaria cases).

⁶ Nam Ngiep 1 Power Company. Social Development Plan for Nam Ngiep 1 Hydropower. Project No.4192. June 2014.

⁷ The EPFI are Bank of Tokyo Mitsubishi (UFJ), Mizuho Bank and Sumitomo Banking Corporation.



from employees’ records, results of group and key informant interviews and observation of physical indicators is used to assess compliance

9.3.1 Core Labour Standards Compliance

The core labour standards are as follows (i) freedom of association and recognition of the right to collective bargaining, (ii) the abolition of all forms of forced or compulsory labour, (iii) the elimination of discrimination in respect of employment and occupation, and (iv) the elimination of child labour.

These standards are contained in the Lao Labour Law (2013) and in eight International Labour Organization (ILO) conventions⁸ (see Table 9-6). The Lao government ratified five of these conventions which become part of the country’s laws.

Table 9-6 Compliance to Core Labour Standards of the Contractors - December 2015

Core Labour Standards	ILO Convention on Core Labour Standard Ratified by Lao Government	Articles in Lao Labour Law Upholding Core Labour Standards	Evidence of Compliance
Freedom of association and right to collective bargaining		Article 60 Rights in Membership in Organization Article 164 Agencies Representing Employees Article 169 Collective Bargaining	<ul style="list-style-type: none"> • Appointment of labour representatives in 6 of 8 firms • Formation of union among workers of one contractor
Elimination of all forms of forced and compulsory labour	C029 Forced Labour Convention	Article 5 Principles of Labour Affairs Article 59 Unauthorized Use of Forced Labour Article 141 Prohibition for Employers	<ul style="list-style-type: none"> • Absence of impregnable physical barrier in camps and work site • Absence of armed personnel hindering free movement of workers
Abolition of child labour	C138 Minimum Age Convention C 182 Worst Forms of Child Labour	Articles 101 Acceptance of Youth Employees Article 102 Unauthorized Use of Youth Employees	<ul style="list-style-type: none"> • Youngest Age of Lao Worker; 18 years old for male and female • Youngest Age of Foreign Worker: 23 years old for female and 19 years old for male
Elimination of discrimination in respect of employment and occupation	C100 Equal Remuneration Convention C111 Non-discrimination in Employment and Occupation	Article 69 Rights and Obligations of Foreign Labour Article 96 Gender Equality in the Workplace	<ul style="list-style-type: none"> • No discrimination case or complaint was ever received by LLU representative and in labour representative in two camps • Women comprising 6.3 % of the workers

The result of the assessment indicates high compliance among contractors to the core labour standards. On freedom of association and right to collective bargaining, labour representative was present in 6 of the 8 firms reported and unions are being formed. In elimination of forced and compulsory labour, no coercive barriers to the movement of workers in the camps and worksites were observed.

⁸ The eight conventions are: freedom of association and right to collective bargaining (Convention No. 87 & No. 98), elimination of all forms of forced and compulsory labour (Convention No. 29 & No.105), abolition of child labour (Convention No. 138 & No. 182) and elimination of discrimination in respect of employment and occupation (Convention No. 100 & No. 111)



No worker born after 1997 appeared in the employees' records indicating absence of child labour. The youngest among Lao workers is 18 years old for both men and women workers⁹. Among the foreign workers, the youngest is 23 for women and 19 for men. However the age of the youngest foreign worker appears non-compliant to Article 43 (Conditions for Foreign Labour Working in the Lao PDR) of the 2013 Lao Labour Law which prescribes that a foreign labour working in the Lao PDR must be over the age of twenty years old¹⁰.

The percentage of women in the project's workforce, although small at 6.3%, can be interpreted as an indication that there is no discrimination based on gender (see Table 9-7). Women are represented in all nationalities working in the project except among the Japanese. The Lao nationals compose 30.9 percent indicating non-discrimination against local labour. Around 11% of the Lao workers are women. Further, the LLU representative and the labour representatives in two firms never received complaint on discrimination in any form.

Table 9-7 Distribution of Workers by Country of Origin and Gender - December 2015

Country of Origin	Men	Women	Total	Percentage
China	69	9	78	4.0%
Japan	18	0	18	0.9%
Laos	535	66	601	30.9%
Thailand	83	12	95	4.9%
Vietnam	1080	33	1,113	57.3%
Others	36	2	38	2.0%
Total	1,821	122	1,943	100.0 %
Percentage Distribution by Gender	93.7 %	6.3%	100%	

Source: Obayashi Corporation. Workers List (31 November 2015). Tabulated Data Submitted to NNP1PC on December 1, 2015.

9.3.2 Compliance to Workers' Protection Provisions of Lao Labour Law

Five key provisions on the protection of labour were looked into to further assess the project's compliance with the 2013 Lao Labour Law. The project fully complied with two and partly complied with another two (see Table 9-8). It fully complied with the provisions to formulation of internal regulations (Article 63) and the requirement to disseminate it (Article 65). But it partly complied with the requirement for workers to have work contract (Article 5)¹¹. LLU representative received reports that there are foreign workers in the project brought in to Laos without work contract. It also partly complied is the requirement to have a labor representatives designated from among workers (Article 166)..It was noted earlier that two of the eight firms on the report from the main contractor have none. The compliance of the content of the internal regulations of project workers with the specifications of Article 64 is not ascertained. The LTA did not receive a copy of the international regulations.

⁹ The Workers List (31 November 2015) submitted by Obayashi Corporation to NNP1C shows a Lao worker (Item Nom PK 533) with indicated age as 10 years old and date of birth on 10 June 2005. The worker's picture indicates a much older person but this case has to be checked if it is a recording mistake.

¹⁰ The Concession Agreement and other agreements between the government and the NNP1C have to be examined to determine if an exception to this provision was granted under Article 68 of the Lao Labor Law where the use of foreign labor is subject to the contract between the project owner and the government otherwise the Lao Labor Law applies.

¹¹ See Footnote 9.



Table 9-8 Compliance with Key Workers Protection Provisions of 2013 Lao Labour Law - December 2015

No	Key Provisions in 2013 Lao Labour Law on Protection of Workers	Degree of Compliance
1	Article 5 Operations based on an employment contract between employee and the employer ensuring both parties benefit without discrimination.	Partly Complied. The LLU received reports that there are foreign workers who a brought to Laos before their contract is fixed. But no complaint was received.
2	Article 63 Internal Regulations of Labor Units. The internal regulations of labor unit are considered legislation that the employer must devise to implement the labor law	Complied. Based on the interviews of employees of two contractors and the LLU representative, the contractors complied on this regulation. ¹
3	Article 64 Content of Internal Regulations. The internal regulations of the labor unit shall include the following: the times for commencing and completing the work of the labor unit and the location or duties; the times for breaks, lunch breaks and necessary breaks during work hours...	No Information. No contractor provided a copy of its internal regulations.
4	Article 65. Dissemination of Internal Regulations. Internal regulations must be positioned for dissemination placed in a location clearly visible to employees, can be easily read or handed out as pamphlet.	Complied. Based on the interviews of employees in two contractors and LLU representative, attaching the Internal Regulations in the employees contract is a standard procedure. ¹
5	Article 166 Employee Representative. Labor units comprising ten or more employees, must have an employee representative or trade union.	Partly Complied. Six of the 13 contractors have employee representatives, two has none and there is no information on five ²
¹	Interview with the employees of Right Tunneling Co Ltd and Song Da 5 Joint Stock Company as well as the LLU representative was done on 11 December 2015.	
²	SMO provided the data on the names of Workers Representatives of eight contractors.	

9.3.3 LTA Recommendations

The LTA recommends that the project forms and convenes a tripartite monitoring committee instead of a Contractors Compliance Committee prescribed in the SDP. The purpose of the committee is to monitor compliance to labor standard, assist the contractors to comply and find solutions to problems in non-compliance. A compliance monitoring sheet can be prepared to be filled up periodically by the contractors. The monitoring sheet can serve as a tool for the committee to validate compliance. The SMO may serve as the secretariat to collect and store the sheets.

9.4 ADB Project DMF Target Outputs on Social Safeguards:

The project's Design and Monitoring Framework (DMF) contains six target outputs on social safeguards. The progress of their attainment is tracked to ensure their completion with the project.

9.4.1 Attainment Level on Target Outputs

Two of the target outputs are already attained (see Table 9-9). One is the employment of at least 500 Lao workers. Around 601 workers are currently employed 11.6 percent of them are from the direct impact area (see Table 9-10). The other is training of at least 20 local government staff on social policies. The SMO reported that government staff are continuously trained during meetings and not under a formal training course. Two of the outputs are partly done. One is the



implementation of social mitigation measures. The various measures including on resettlement are in various stages of detailed planning and implementation. Another is the 12 female scholars per year. In 2014 only nine scholarships were granted to women because of limited number of applicants. The issuance of land titles is not yet done while the amount of locally purchased goods is unmonitored,

Table 9-9 Compliance with DMF Social Target Outputs - December 2015

No	DMF Social Target Outputs	Degree of Compliance
1	Appropriate social mitigation measures implemented	Partly done. Implementation of the various plans is still underway. In the case of the Social Management Action Plan, completion rate is estimated at 65 percent.
2	At least 500 Lao workers employed in construction during 2014-2018	Done. The project currently employs 601 Lao workers exceeding the target.
3	Issuance at 100% of replacement land titles in joint spousal names of displaced households	Not Done . Hampered by issues on compensation rates, PAPs' resettlement preference and conduct of preparatory activities. This will be done once replacement land is determined and issued.
4	Minimum of 12 scholarship per annum provided to female students from inundated area and host communities	Partly Done. In 2014, 19 scholars were sent to school but only 6 are females due to limited number of applicants .
5	At least 20 local government staff trained to implement social policies on 2014 and 2018	Done. Training is continuously done during meetings.

Table 9-10 Distribution of Lao Workers by Place of Origin and Gender - December 2015

Place of Origin	Men	Women	Total	Percentage
Direct Impact Area	44	26	70	11.6%
Outside the Direct Impact Area but Within the Impact Provinces (Bolikhamxay and Xaysomboun)	215	18	233	38.8%
Outside Impact Provinces	276	22	298	49.6
Total	535	66	601	100.0
Percentage Distribution by Gender	89.0%	11.0%	100.0%	
Source: Obayashi Corporation. 2015 Workers List (31 November 2015). Tabulated Data Submitted by to NNPIC. 1 December				

9.4.2 LTA Recommendations

The strengthening of the village skills training component of SMAP is again recommended to enhance the attainment of two target outputs: employment of at least 500 Lao workers and purchase of local goods. The amount of the purchase is not presently monitored but this can be one of the items that the PAP-Contractor Committee can do. This can be part of the monitoring sheet that the contractors will fill up periodically. Through the committee, a mechanism to match and link the suppliers and buyers can be designed and implemented so that the production of the PAPs can be more attuned to the needs of the labour camps.



10 Environmental & Social Budget Monitoring

10.1 Total Budget, 2015 Expenditures

To the LTA's knowledge, the total Environmental & Social Budget for the Project implementation stage is 56'647'047 USD.

The expenditures up to end November 2015 were 7.98 million USD, versus a 2015 budget of 20.11 million USD. A detailed comparison between actual expenditures and 2015 budget is shown in the Table 10-1.

Table 10-1 2015 E&S Expenditures versus Budget

Items		Amount (Million \$)		
		Actual Expenditures up to Nov. 2015	2015 Annual Budget	Remaining Budget
1	Resettlement Site Development	1.05	9.99	8.94
2	Compensation Cost	0.57	1.63	1.06
3	ESD Personnel & GoL Costs	4.42	5.52	1.10
4	ESD Others	1.95	2.97	1.02
ESD Total		7.98	20.11	12.13

The balance shown in the table above reflects the delays occurred along the year. It is especially depressing noting that internal and coordination costs have been relatively close to the budget, while expenditures for real PAPs' benefit were a minor fraction only. It will be essential reversing this trend in the remaining construction period.



Annex 1

Scope of LTA's Services – Phase 2 – Environmental & Social Aspects



Phase 2: Until Project Completion: Construction and Performance Test Monitoring and Certification

Tasks related to general and technical aspects are stricken out, as this annex refers to tasks related to environmental & social aspects only.

1. Project Implementation Status and Site Visits: Visit the site every 3 months during the construction period and early operation for the following monitoring duties:

- ~~(a) to follow the construction progress, assess progress in engineering, procurement, construction activities, review progress reports prepared by the Project Company/Contractor's engineer;~~
- ~~(b) to evaluate the quality of the completed work and review quality control reports;~~
- ~~(c) to monitor the actual expenditures against budgeted expenditures;~~
- ~~(d) to attend site construction progress meetings;~~
- ~~(e) to ensure the work is performed in accordance with the approved design;~~
- ~~(f) to review and verify all major variation orders;~~
- (g) to check Project compliance with the local laws, ADB Environmental and Social Safeguard Policies and Guidelines as well as any additional environmental and social standards required by other Lenders; and
- (h) to prepare a written report with photographs after each site visit and distribute the completed report within ten (10) days of such visit.

~~2. Change Orders:~~

- ~~(a) Review and consider for approval any construction variation or change order in excess of such threshold as may be specified in the financing documents and report these on a cumulative basis in the monthly reports and quarterly site visit reports.~~
- ~~(b) Assess the impact of proposed change on operational and maintenance costs, whether change in cost is reasonable, and the impact on project completion.~~

~~3. Procurement:~~ Review the implementation of the overall procurement procedures, preparation of procurement documents, procurement contracts and packages in accordance with the Contracts and the overall project implementation schedule.

~~4. Schedule and Cost Deviations:~~ Identify and report to the Lenders any changes or events that could lead to deviations of the Project schedule and costs from the agreed targets, due to unforeseen events such as: foundation conditions, accidents, disputes between contracting parties, design flaws, political events, unusual weather, equipment failures, factory strikes, construction labour disputes, and other similar events that might impact the Project.

~~5. Monitoring and Certification of Disbursements:~~

- ~~(a) Review the contractor's milestone or drawdown requests and supporting documentation.~~
- ~~(b) Certify progress claimed through the achievement of milestones on each cash drawdown request. The LTA's Certificate will be required for each drawdown.~~



- ~~(c) Monitor and report in the monthly reports on the disbursement of Project funds disbursement program, Project implementation schedule, and contractors drawdown schedule.~~

~~**6. Preparation of Punch Lists:**~~

- ~~(a) Towards the end of the Project construction period, participate in the final "punch" lists and facility review to record all work requiring completion and defects needing correction, and monitor the completion of all outstanding work to ensure the achievement of a fully completed project of high quality.~~
- ~~(b) Agree on the work items transferred from the Punch Lists to the Completion List.~~

~~**7. Performance Tests:**~~

- ~~(a) Review testing methodology and schedule based on the performance testing procedures specified in the Contracts, PPA and other documents.~~
- ~~(b) Working as the LTA, participate, as reasonably required, in such performance tests that relate directly to plant performance and reliability, including: (i) the site performance tests of the major equipment components; and (ii) testing of the complete plant upon completion.~~
- ~~(c) The results of all performance tests will be reviewed by the LTA and reported in a special independent overall performance test report, separate from the other reports within the time period requirements of the Contracts. The LTA will advise the Lenders when the plant is ready to commence performance testing.~~

~~**8. LTA Certificates and Construction Completion:**~~

- ~~(a) Provide written certificates to the Lenders confirming when the Project has achieved Mechanical Completion, Provisional Acceptance, Substantial Completion, and Final Acceptance (as such terms are defined in the Contracts).~~
- ~~(b) Confirm the acceptability of the Punch list and the Completion List created under the Contracts and provide any other written certificates contemplated by the Contracts and the Loan Agreements of the Lenders.~~
- ~~(c) Certify that the plant has been fully accepted and has entered commercial operation.~~

- 9. Reports:** The written reports to be prepared by the LTA include (a) monthly implementation progress reports during the targeted construction period based upon data supplied by the Project Company, (b) quarterly site visit reports and (c) special visit reports related with the Performance Test Report encompassing the site component and unit testing activities that will serve as a permanent plant reference document. All reports would include an Executive Summary. The Performance Test report will be submitted in draft form to the Lenders for their review and comments before issuing in final form. All other reports will be prepared and issued in final form, with incorporation of all relevant feedback in subsequent progress reports. Sufficient copies of all reports will be sent to the Lenders.



Annex 2

Implementation of Social Management Action Plan Status as of December 2015



Sub-Activity and Responsibility	Status and Remarks
I. Village Capacity (Resettlement Preparation and Camp Followers Team)	
1. Set up village development committee (VDC)	Done
2. Monthly Village Meeting for whole community to report progress /concerns	Done.
3. Monthly meeting (minuted) with representatives of village (including villages in zone 5) NNP1 and district authorities to report progress and concerns relating to village security/safety during construction available for this topic	Done.
4. Training for village authorities (zones 3 and 5) of Laws relating to the rights of Women and Children	Not Done
5. Study tour to other villages in Laos that have been affected by dam construction	Done
6. Workshop including NGOs with experience/ resources	Not Done
II. Police Capacity (Resettlement Preparation and Camp Followers Team)	
1. Renting of building in Hat Gniun to be provided as police office to the district police (encompassing 3 accommodation and 1 office room and 1 detention room)	Done. 4 bedrooms, 1 office and 1 kitchen were built. Detention room was not built.
2. Support security patrolling (6 police officers, at least 2 female) in Hat Gniun with daily patrols extending to Hatsaykham on a daily basis.	Done
3. Conduct training for village authorities and local police regarding classification difference between grievances and criminal offenses.	Not Done
4. Establish protocol and disseminate among involved security parties and inform villagers	Done. Disseminated in meetings
III. Code of Conduct (Contractor, Subcontractor, Company)	
1. Establish Code of Conduct.	Done.
2. Translate Code of Conduct into several languages	Done. Translated to seven languages
3. Disclose Code of Conducts, ensure that every employee and worker signs the Code of Conduct and publicly post it in the workers camps.	Partly Done. It was not publicly posted in workers' camp
4. Create barrier on T5 and restrict access.	Done. Barrier moved to P1 Road
5. Workers are not allowed to enter Hatsaykham except with written approval by the supervisor.	Done
6. Workers not allowed halting in a radius of 500m to the school of Hat Gniun except in emergency cases.	Not Applicable. Impractical due to the houses and shops around the school
7. Criminal offenses will be penalized in addition to the judicial process via immediate dismissal of the offender.	Done. Three workers involved in bar fights were dismissed
IV Worker Camps (Contractor, Subcontractor, Company)	
1. Provide SSESMP-CP for the workers camp and implement the construction of workers camps accordingly	Not Applicable. Part of EMO
2. Establish leisure facilities within the camps (sports related)	Partly Done: Facilities existing in 6 camps and under construction in 2 camps
3. Ensure gender-segregated facilities in the camps	Done
4. Install at least 2 security guards at any time for each camp.	Done
5. Regular patrolling, at least every 2 hours through the camp, including during the night shift.	Done
V Camp Regulations (Contractor, Subcontractor, Company)	
1. Drinking of alcohol is not permitted on working days between midnight and 5pm within the camp and at no time in the construction area.	Done. Exception is made in one camp if special permission is given by the management



Sub-Activity and Responsibility	Status and Remarks
2. Workers with signs of intoxication will be tested on substance abuse; mobile drug testing facilities shall be available at the medical health center by 2014Q4	No information. Done on one camp but no information on others
3. Closing of camps between 10pm and 5/6am, except for work purposes together with supervisor or emergency cases to be reported to the camp manager; the latter case has to follow protocol and information noted in the OC monthly progress report.	Done
4. Every non-member of the camp shall be registered with name and affiliation in a log-book on entering (noting date and time of entrance) and leaving the camp (noting date and time of leaving), to be available for contractor and developer for inspection. Access is prohibited for non-camp members between 10pm and 5am. Log-books have to be stored safely until the end of the construction period.	Partly Done. At least one camp had no log book.
5. At least one female labour representatives shall be elected in each camp, be provided with necessary training, and be involved in any case where female workers or employees need support.	No information. Done on one camp but no information on others
6. All workers will wear identification badges (on helmet) at all time except within their accommodation.	Done
7. For the first two incidences of workers' non-compliance with code of conduct and camp regulations, warnings will be given; a third incidence leads to the immediate dismissal of the worker.	Done. In one camp, non-compliance resulted to dismissal
8. Criminal offences will lead to the immediate dismissal of the worker.	Done
VI. Facilities for Camp Followers (Contractor, Subcontractor, Company)	
1. Establish an economic zone at least 1km away from any village or hamlet	Done
2. Once the health facilities are available for the workers, emergency cases can be taken to these facilities	Not Done
3. Costs will be jointly shouldered by contractors, camp followers, and developer; a system will be established via consultations between the different parties, including. provisions in kind	Not Applicable. Contractors are obliged to shoulder only the cost of workers in emergency cases
4. Security in this zone has to be supported by regular patrols of the district police	Done
5. Costs will be jointly shouldered by contractors, camp followers, and developer; a system will be established via consultations between the different parties, incl. provisions in kind	Not Applicable. Contractors are obliged only to shoulder the cost of damages cause by workers
6. Support the school of Hat Gniun to cope with increased student numbers due to influx of camp follower children	Not applicable: No surge in student number
VII Liability of Contractors (Contractor, Subcontractor, Company)	
1. Present additional measures to be included in the contract between NNP1 and contractor that make the contractor/Subcontractor liable for expenses related to such cases per person; in case such expenses cannot be collected from the offender. Subcontractor has to shoulder all costs related to damages resulting from their workers during the time workers stay within the construction area (encompassing the stretch from the dam site to Hat Gniun).	Done Contractors shoulder the cost of damages cause by workers
VIII Implementation of Code of Conduct (Contractor, Subcontractor, Company)	
1. Investigate availability of suitable training/ communication packages that may have already been developed with relevant NGOs and implement a joined program	Partly Done. Packages identified but not yet implemented
2. District level discussions on existing resources for training/ monitoring	Done. But discussion is done at the provincial level
3. Train construction workers on code of conduct and risk of unprotected sexual activity	Done



Sub-Activity and Responsibility	Status and Remarks
4. Train for all NNP1 staff on how to prevent the transmission of STDs including HIV/AIDS	Not Done
5 Train for all NNP1 staff on knowledge of legal and social ramifications of human trafficking, abuse of alcohol & drugs.	Not Done
6. Agree audit plan with contractors on compliance with Code of Conduct	Not Done. Currently under discussion
7. Audit of compliance with code of conduct	Done. Performed by the LLU monthly
IX Villagers' Skills Training (Resettlement Preparation and Camp Followers Team)	
1. Designate Village Focal Point (VFP) volunteers in each village to follow up on issues raised and coordinate with NNP1 and district level associations such as DCCA (District Committee for the control of AIDS)	Not Applicable. No volunteers
2. Seek out training opportunities for TOTs / facilitation courses to develop skills in VFPs in each village	Not Applicable. No volunteers
3. Develop curriculum for life skills training	Not Done
4. Regular life skills training sessions for target groups of young people	Not done
5. Set up regular sports and activity session for youth	Not Done
X. STD High Risk Group Interventions (Resettlement Preparation and Camp Followers Team)	
1. Improve sexual health services at the provincial hospital (contained in PHAP)	Not Done
2, Train peer support workers for sexual health advice	Not Applicable. Commercial sex workers stay only for few days putting them beyond reach of the program
3. Peer Group meeting 3 months/ meeting /village) Peer education and counselling program for commercial sex workers	Not Applicable. Commercial sex workers stay only for few days putting them beyond reach of the program
4. Outreach visits to support commercial sex workers	Not Applicable. Commercial sex workers stay only for few days putting them beyond reach of the program
5. Condom distribution program; Visit guesthouses, entertainment venues, pharmacies etc to encourage them to have condoms for sale.	Done
6. IEC materials for display in offices, construction workers accommodation. (Prevention and treatment options)	Done
XI. SMO Procedures	
1. Prepare a protocol so that staff is guided on how to proceed (sensitivity, suggestion of hospital check up, etc.)	Not Applicable. This action is recommended to be put under Human Resource Unit
2. If female persons are alleged victims, then at least one female SMO officer or a member of the LWU needs to be included in any conversation with that person	Done
3. Define for which cases medical check-ups are obligatory to be provided by the Project even if no external injuries are visible SMAP team follow up any	Not Applicable. This action is recommended to be put under Human Resource Unit
XII. SMO Staff & Training	
1. Hire at least one camp follower and one health officer working full time on the implementation of all necessary measures outlined in the SMAP as well as the Projects SDP	Partly Done. Health officer hired by not the camp follower officer
2. Ensure staff knowledge on the developed procedures	Unclear
3. Conduct training for staff on how to document, report and react to incidents	Not done. No formal training done
4. Ensure staff understanding of limitations to facilitate actions	Unclear.



Annex 3

Photographs



	
<p>Song Da 2: wastewater treatment plant</p>	<p>Collapsed bank of one of the Song Da 2 wastewater treatment plant</p>
	
<p>RT waste water treatment ponds</p>	<p>V&K wastewater treatment plant</p>
	
<p>Wastewater treatment system at Owner's camp</p>	<p>Wastewater treatment system at Owner's camp: detail</p>



Waste water pond of the Song Da Camp



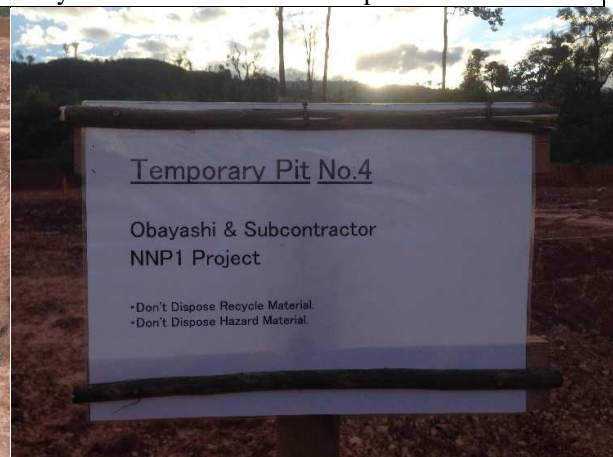
Wastewater treatment pond at Obayashi camp



Water sprayed directly on the soccer field from the Obayashi wastewater treatment pond



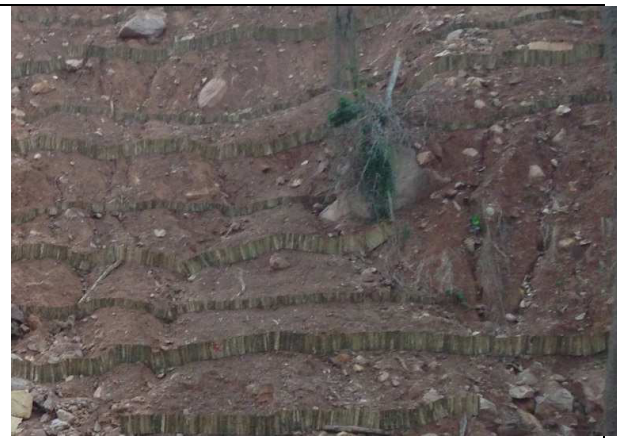
Waste selection in the temporary pit



Temporary pit at the landfill designated site



Silt fences downstream the dam axis



Silt fences: detail



Quarry: panorama



Quarry: drilling blasting holes



Quarry: berms



The crushing plant: note the dust



Crushing plant: detail



Nam Ngiep 1 Hydropower Project

Response to the Lenders' Technical Adviser's Report Number 5, February 2016

A	12 March 2016				
REV	DATE	AUTHOR	CHECKED	APPROVED	MODIFICATION DETAILS
<u>Accessibility</u>		Document No. NNP1-C-B1106-DG-001-A			
<input checked="" type="checkbox"/>	Public				
<input type="checkbox"/>	Internal				
<input type="checkbox"/>	Confidential				

This document is NNP1 property and shall not be used, reproduced, transmitted and/or disclosed without prior permission.

Nam Ngiep 1 Power Company's Response to the Implementation Progress Report No. 5 Environmental & Social Aspects, February 2016 of the Lenders' Technical Adviser

Introduction

This document contains the response of Nam Ngiep 1 Power Company to the findings and recommendations of the Lenders' Technical Adviser (LTA) expressed in their Report No. 5 of February 2016.

The Nam Ngiep 1 Power Company is committed and obligated to strictly comply with the environmental and social safeguards of its Lenders and the Government of Lao PDR. In particular, in accordance with the loan agreements, a team of experts i.e. the Lenders' Technical Adviser or LTA will monitor the compliance of the Company with ADB Safeguards and other legal requirements.

In the period from 7-13 December 2015, the LTA conducted their fifth monitoring mission to the Nam Ngiep 1 Hydropower Project. The findings and recommendations of the LTA are publicly available and their reports can be downloaded from the website of Nam Ngiep 1 Power Company, <http://namngiep1.com/>

The Nam Ngiep 1 Hydropower Project is located on the Nam Ngiep River, which flows about 160 km from the mountainous area of Xieng Khuang Province in the centre of Lao PDR through Xaysomboun Province to the plains of Borikhamxay Province until its confluence with the Mekong River. The Project consists of a 148 m high main dam and a smaller 20 m high re-regulating dam downstream of the main dam. The Project will have two powerhouses, one at the main dam with an installed capacity of 272 MW and the other powerhouse at the re-regulating dam with an installed capacity of 18 MW. The main dam will form a 70 km long and 67 km² large reservoir which will inundate four villages in the lower part of the reservoir and impact agricultural land belonging to three villages in the upper part. The re-regulating pond formed by the small dam will inundate one village.

The construction works started in August 2014 and the overall progress of work is about 32%. The inundation of the reservoir is planned to start in May 2018 and the Project will commence generation of electricity by January 2019.

The Company is working closely with the Government of Lao PDR at all levels, international organisations and local people to adhere to the Company's obligations under the Concession Agreement, national legal framework, Lenders' environmental and social safeguard policies and international best practices. The ultimate goal is to avoid and minimise the Project's footprint on the environment, and in line with the policies laid down in the National and Provincial Socio-Economic Development Plans, contribute to the long-term sustainable development of the country and in the Provinces where the Company operates.

For further reading and understanding about the environmental and social management of the Project, please visit the Company Website <http://namngiep1.com/> where detailed information about the design and progress of implementation of the environmental and social management plans and programmes are available.

Response Matrix

	LTA Recommendations/Required Actions	NNP1 Response
1.1.1	EMO Compliance Team LTA strongly advise to prepare a new organization chart that identifies the staff based at the Project site, in Paksan, in the affected villages and in Vientiane. Moreover, to adequately achieve the compliance monitoring goals the EMO should be provided with proper testing equipment and an adequate laboratory to make more effective the monitoring activities	<ul style="list-style-type: none"> - All the members of the EMO Compliance Team are based in Pakxan and work at the Owner's Site Office (OSO). The organization chart will be included in the Environmental QMR Quarter 4, 2015. - The Water Quality Lab is being designed and will be established at the OSO; equipment and instruments are being procured to enhance the monitoring activities. The lab is planned to be constructed by July 2016 and fully operational by the end of 2016 following necessary testing and training.
1.1.1	the environmental team shall stay permanently at site to monitor the compliance of the environmental measures	<ul style="list-style-type: none"> - EMO Compliance Team has office space at the OSO and carries out daily inspection of the construction sites jointly with staff of the Technical Division and Obayashi Corporation.
1.1.4	Capacity building for the EMU LTA fully agrees with the comments already given by the IAP, recommending that the company 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 Theun-Hinboun projects	<ul style="list-style-type: none"> - NNP1PC has informed the EMU of their future involvement in the Watershed Management Program. NNP1PC Watershed Management Team has joined and presented watershed activities during EMU missions. - NNP1PC discussed with EMU (MONRE) on the need for workshop with Nam Theun 2 and Theun-Hinboun Expansion Projects, and it was a positive discussion. NNP1PC will continue on this matter.
5.2	It is also very important that EMO continues (as is partially already doing) trying to involve as much as possible EMU in the monitoring activities and in the site. Such involvement should include also the activities related to the Biomass Removal Plan	<ul style="list-style-type: none"> - The EMU has joined environmental monitoring activities in the past and this good practices will be continued. - The biomass removal field activities will commence in February 2016. The first meeting with GOL was conducted on 14-15 January 2016, the second meeting will be held in Xaysomboun Province on 29 January, where the EMU is invited

	LTA Recommendations/Required Actions	NNP1 Response
1.1.5	Compliance of the Contractor it' is an important good news that OC has established an E&S by appointing the relevant specialists and by hiring experts on specific issues, however it shall be underlined that if OC trusts its own experts, they should follow their indication	- Noted. The EMO will continue to supervise/monitor, so that the expert's advice are fully addressed by the contractors.
1.1.5	NNP1PC should stress the need for Obayashi to regularly check the subcontractors' performance on environmental aspects, particularly wastewater treatment and waste management, and record construction related grievances and social problems of the local population of the near-by villages	- Noted. Efforts have been made in the past, the EMO will continue to work with the Technical Division to improve the water treatment systems and waste management at all construction areas and workers' camps.
1.6	Where there is a non-compliance by Obayashi or its subcontractors, notices will be issued by NNP1PC and further actions shall be taken by NNP1PC against the Civil Contractor and its subcontractors if they are not promptly following the EMO indications referring to Environmental issues identified, discussed and agreed actions	- Noted. Joint site inspections are conducted every second week. The EMO Compliance Team also works at site with the Technical Division and Obayashi Corporation on a daily basis, this practice will be continued. - The EMO follows-up weekly on noncompliance notices. In case EMO identifies a noncompliance, EMO will either issue an Observation of Non-Compliance (ONC) or a Non-Compliance Report (NCR) depending on the severity of the noncompliance. ONCs/NCRs are closed once the Contractor has implemented the agreed corrective actions to the satisfaction of the EMO. This practice will continue.
6.1.2	NNP1PC should stress the need for Obayashi to: <ul style="list-style-type: none"> - Implement as soon as possible EMO recommendations; - To regularly check the subcontractors' performance on environmental aspects, particularly wastewater treatment and waste management, - Record construction related grievances and social problems of the local population of the near-by villages, - To make sure that the professional advices required on some specific issues (i.e waste water treatment systems, solid waste management, etc.) are duly implemented 	- Noted. It has been normal practice and will continue.
6.2.1	NNP1PC shall request information about environmental organisation of all the subcontractors as soon as possible, before relevant field activities start	- Noted. The information will be included in the Environmental QMR Quarter 1, 2016.

	LTA Recommendations/Required Actions	NNP1 Response
1.2 and 7.3.2	<p>Wastewater treatment The EMO should push the Contractor to strictly implement the design prepared by the expert on one hand and on the other should check more frequently and in different hours the effluents to verify the treatment systems effectiveness.</p> <p>All waste water coming from toilets, kitchens and all other water using activities performed at the camps should be treated by proper water treatment systems.</p> <p>The Contractor has not followed adequately the instructions of the expert. Most of the wastewater treatment system do not work properly mainly because the ponds' bottoms have not been provided with an adequate watertight membrane (as recommended in the expert's report, thus allowing the seepage of the polluted water into the underground water circulation system. Moreover, the water coming out at the end of the process is dispersed into the local environment (soccer fields, sprayed on the roads, on the slopes that need to be revegetated, etc.) without making any analysis to assure that the required standards are met.</p> <p>Owner's Waste Water treatment system: Contractor has not duly followed the expert's indications. The result is that the WWTS is not working well.</p> <p>The filtration bed has not been built adequately: sewage pipes should not be located on the surface of the filtration bed, but should be covered with geotextile, surrounded by gravel and buried underground into a proper drainage trench</p>	<ul style="list-style-type: none"> - Noted. EMO will check and make sure that the upgraded Waste Water Treatment Systems follow the designs suggested by the expert. - Effluent discharges have been and will continue to be monitored by the EMO Compliance Team. - The dispersing of waste water into the local environment will be suspended until the quality is checked and proved within the national standards. <p>These issues will be addressed in the Environmental QMR Quarter 1, 2016.</p>
1.2 and 7.3.3	<p>Solid waste management Reduce the amount of undifferentiated solid wastes by implementing a proper separate collection system that will allow to recycle most of the wastes: paper, aluminium cans, plastic, iron and other metals, used tires</p> <p>Recycling shall be enhanced by joint initiatives between EMO and SMO, trying to find with the local communities possible re-uses of wastes like used tires, food wastes etc.</p> <p>The sanitary landfill design prepared by the expert meets the requirements, but it's construction shall not be delayed anymore. LTA strongly recommends to finalise the landfill design and proceed with the construction as soon as possible. It is of clear evidence that wet season conditions have complicated the leachate</p>	<ul style="list-style-type: none"> - Noted. Solid Waste separation training was conducted to all workers' camps and project teams; a waste bank has been established for local villages and a pressing machine has been installed. The food waste program is running well and will be expanded to involve more villagers. These practices will be continued and enhanced to make sure that the solid waste is properly managed. - The design of the NNP1 landfill has been completed and NNP1PC is evaluating the bids for the construction works. - The location of the landfill for the resettlement area has been selected and the landfill has been designed

	LTA Recommendations/Required Actions	NNP1 Response
	management at the landfill site, therefore the landfill should be finalized before the next rainy season comes	
1.2 and 7.3.4	<p>Slope stability A careful revision of the slope stability in the project area should be carried out to identify potential unstable areas and to identify the relevant stabilization measures (if and where needed).</p> <p>Some loose soil stabilization measures were implemented since the LTA's previous visit which have partially improved the safety of the working areas and partially reduced the visual impact (silt fences downstream the dam axis). These remedial measures should be carefully monitored because in the LTA's opinion their long lasting stability is not guaranteed. Moreover, there are several locations with loose rocks and boulders on steep slopes that deserve attention to prevent the risk of rock falling and to reduce safety risks for people moving around in the roads located below</p>	<ul style="list-style-type: none"> - Noted. NNP1PC (Technical Division and EMO) regularly inspects and observes slope stability in the project area in order to implement measures to stabilize unstable slopes
1.2 and 7.3.6	<p>Quarry Sites The Contractor shall prepare and submit to NNP1PC the quarry exploitation and final recovery plan as soon as possible, as well as the spoil disposal area filling procedures that shall include also a final recovery plan for the area.</p> <p>Borrow pits should be avoided as much as possible and whenever necessary should be located in the future reservoir area. If it's necessary to locate some borrow pits in other areas not permanently covered by the main reservoir or by the re-regulation reservoir a final recovery and rehabilitation plan should be prepared by the Contractor and submitted to NNP1PC</p>	<ul style="list-style-type: none"> - Noted. EMO will discuss with the Technical Division and Obayashi Corporation on closure plan development and will include the result in the Environmental QMR Quarter 1, 2016.
1.2	<p>Site rehabilitation A final recovery plan is necessary for the construction areas that will be abandoned at a certain point of the construction activities and that are not located below the Full Supply level of the main reservoir or of the re-regulation reservoir</p>	<ul style="list-style-type: none"> - Noted. EMO will discuss with the Technical Division and Obayashi Corporation the rehabilitation plan of construction area and will include the result in the Environmental QMR Quarter 1, 2016.
7.3.5	<p>The Contractor has identified a main spoil disposal area (close to the wastes landfill), such area looks suitable from geological, morphological and hydrological point of view, but the Contractor should provide a design of the operation phases of such area together with a final recovery plan</p>	<ul style="list-style-type: none"> - Noted. EMO will discuss this issue with the Technical Division and Obayashi Corporation and will include the result in the Environmental QMR Quarter 1, 2016.

	LTA Recommendations/Required Actions	NNP1 Response
1.2 and 7.3.7	<p>Dust from Crushing Plant The Civil Contractor shall consider all the necessary measures to suppress the dust emission in the crushing plant to acceptable level as per the existing regulations.</p> <p>Considering that the use of waster sprinklers is the most common, effective and fast system to reduce the dust emissions, it is worth recommending that the installation of such device shall include also an adequate de-silting system to reduce the sediment load concentration in the water before it is discharged into the natural water circulation system.</p>	<ul style="list-style-type: none"> - Noted. Water sprinkler has been installed at the crushing plant to suppress the dust emission - Workers have been trained on using PPE at the site. - Dust emission has been regularly monitored by the Environmental Monitoring Team at the workers' camp and villages near to the aggregated plant.
1.3	<p>Biodiversity Offsets In accordance with the recommendations made by the Biodiversity Experts (IAP and ADB) the LTA agrees that:</p> <ul style="list-style-type: none"> - Watershed is not suitable for offset, but some interesting populations (e.g. Lao Newt, Northern White-cheeked Gibbon, Owston civet) deserving conservation interests, were found; - The three areas assessed (Phou Sod, Phou Xe and Phou Sithone extension) are not suitable for the purpose of biodiversity offset; - The new offset options are: <ul style="list-style-type: none"> ▪ Nam Mouane (that represents the priority option, but has some constraints for access); ▪ Locate the offset area in other provinces (e.g. Khoun Xe Nong Ma, Xe Sap); ▪ Funding through Environmental Protection Fund; ▪ Xaysomboun province parallel options on potential offsets outside watershed (in Xaysomboun or Bolikhamxay provinces) should be explored as well. <p>The Biodiversity Offset shall be developed as per the following steps:</p> <ul style="list-style-type: none"> - Step 1: survey 2 sites (expert Lao and International team) by March 2016; - Step 2: Biodiversity Advisory Committee shall review TORs and draft reports; - Step 3: by June 2016 the offset sites shall be valued and next steps agreed; 	<ul style="list-style-type: none"> - It was agreed during IAP, ADB and LTA mission in May 2015 that the Biodiversity Offset Site has to be outside of the NNP1 Watershed Area. Therefore, the offset site survey was conducted for Phou Sod, Phou He and Phou Sithone extension areas. Based on the results of the surveys, it was concluded that none of these sites are suitable for as offset site. - Based on agreement with the Bolikhamxay government, and in accordance with recent suggestion by IAP and ADB; the biodiversity survey will be commenced in February 2016 in Nam Mouane Watershed area. If it is found that this site is not suitable as an offset site, then NNP1PC will discuss again with GOL to decide and agree on further surveys at other candidate sites including sites outside Bolikhamxay and Xaysomboun provinces. - We noted the recommended steps for development and implementation of the Biodiversity Offset Management Plan.

	LTA Recommendations/Required Actions	NNP1 Response
	<ul style="list-style-type: none"> - Step 4: choose the offset site (by September 2016); - Step 5: Institutional arrangements; - Step 6: Proposed fund flow for the Biodiversity Offset. 	
8.2.2	<p>Watershed Management It is important at this stage to keep monitoring the water quality upstream of the construction site for at least one full hydrological year, to obtain data about the water quality of the river in natural conditions: without this it will be impossible to accurately estimate the impact of the project on the water quality of the river. We understand that the EMO is regularly monitoring the water quality.</p> <p>Moreover, as recommended by the IAP, it is important to:</p> <ul style="list-style-type: none"> - to reduce, simplify and integrate the sub-plans and the consultancies; - to include the inputs expected from the Integrated Spatial Planning of the Xaysomboun Province, which has been delayed; - to include the inputs from the Biodiversity surveys, to be completed by March 2016; - prioritize the activities in Watershed Action Plan against PONRE/WMO capacity; - avoid duplications and clearly identifying roles and responsibilities; - focus priorities e.g. monitoring illegal logging, protecting forest 	<ul style="list-style-type: none"> - NNP1PC has noted the recommendations. The biodiversity management sub-plan is being consolidated into the Watershed Management Plan (WMP). NNP1PC is supporting Integrated Spatial Planning for Xaysomboun Province and this will be integrated into the Watershed Management Plan. The biodiversity survey in NNP1 watershed was completed in Sep 2015 and the biodiversity management will be included in the WMP. - Watershed Action Plan has been discussed and prioritized during the meeting on Jan 14 to 15 2016. - Roles and responsibilities of the concerned parties will be discussed as part of WMP development. - The illegal logging and forest protection are likely priority issues in the Watershed Management Plan.
7.5	<p>Ambient Water Quality The trends show that NNP1 site is not contributing significant discrepancies of water quality conditions at the project site. Levels are about the same above and below the site. Trends also follow dry-wet season cycles. In some measurements, the Chemical Oxygen Demand (COD) and Total Coliform (20 times) and Faecal Coliform (100 times) exceeded Lao government water quality standard. However, these higher values are most probably not related to the Nam Ngiep 1 Project construction activities. Other remaining parameters met with Lao government surface water quality standards.</p> <p>Although other parameters met with guidelines following the latest sampling event, LTA recommended that water quality parameters of COD, BOD and NH3-N,</p>	<ul style="list-style-type: none"> - Noted. The effluent discharge is and will continue to be monitored at all workers' camps.

	LTA Recommendations/Required Actions	NNP1 Response
	Total and Faecal coliform to be measured from the discharge water at workers' camps	
8.4.3	Transmission Line Construction LTA recommends that EMO monitors that the corridor clearance takes place only inside the corridor designated area	- EMO Compliance Team is regularly monitoring the construction of the transmission line and will make sure that the clearance is within the designated area.
8.4.3	<p>Biomass Clearing The plan looks well-structured and rationally organized and the EMO has the experience of the similar activities carried out in Nam Theun 2. However some discussions are still necessary to adequately define the areas to be cleared form vegetation taking into account: the need to remove as much as possible all the biomass that is going to be submerged by the water during the reservoir impoundment (to reduce relevant GHG emissions and the decay of the water quality), the constraints related to the accessibility to the clearing sites (it is mandatory to avoid the opening of any new access to the area) and the need of preserving some vegetation in the buffer zone area to reduce the risks of slope instabilities induced by the periodical water level variation in the reservoir.</p> <p>A positive point is the fact that NNP1PC intends to reuse the removed biomass for biochar to improve soil fertility in the Houay Soup resettlement site. This is a very good solution and opportunity to reuse the biomass and to reduce/avoid the use of chemical fertilizers. However, the quantity of biomass removed that is going to be used for such purpose is only a fraction of the whole biomass present in the submerged area. Therefore, other possible reuses of this biomass shall be evaluated</p>	- Noted. Discussion is being held with provincial aurorities on the reuse of the remaining biomass. This includes the collection of valluable timber, bio-char for resettlement area, and firewood for local communities.
9.1.4	Housing construction in the resettlement Site Two actions are planned to resolve the issue on the housing construction in the resettlement: Conduct of indicative choice survey in 2LR by 31 March 2016 and submission of the draft REDP sub-plan to ADB on specific dates. The result of the choice survey will indicate the number of houses to be constructed and ADB's approval of the sub-plan will warrant the release of funds part of it for the preparation of the resettlement site. The LTA recommends to strictly keep the deadline and to beef up internal capacity with outside expertise if needed to complete the documents on time	- NNP1PC is fully aware of the importance and urgency of making sure that the construction of the resettlement housing can be completed as planned; and that the underlying REDPs duly and timely completed. In this regard, the completion of the indicative choice survey is important because it will provide a strong indication of the number of houses that need to be constructed. Such information is necessary in order to complete the relevant REDP. However, in order for the PAPs to be able to make a choice, the asset registration and the comparative compensation have to be completed – and this is a

	LTA Recommendations/Required Actions	NNP1 Response
		<p>delicate process which is hard for NNP1PC to control and keep within fixed time frames. This process also needs to be completed in order to finalize and submit the relevant REDP Sub-Plans to ADB.</p> <p>It is not a process that can be forced through by adding more resources. The approach that NNP1PC is implementing involves group meetings and a careful household by household consultation process led by the Management of the Company's Environmental and Social Division to ensure that all PAPs have a clear understanding of the concepts, compensation policy and relevant principles including applicable laws and regulations. In turn, this also serves to make sure that NNP1PC pays full attention to issues and concerns raised up by PAPs.</p>
9.1.4	<p>Compensation Rates The issues raised by the PAPs will not be fully resolved given the limitations of the national law and ADB policies as well as the project's capacity to pay. The task is to deepen the understanding of the PAPs on the following: legal limitations in setting the unit rates, valuation and computation methods used, contribution of over-and-above benefits to meeting their aspirations and making use of the grievance mechanism. The steps taken to carry out these tasks include various information dissemination activities, VDC meetings, study tours and the transference of staff activities to Paxan and Thathom. The LTA encourages NNP1PC to carry further this transference of staff and functions, including procurement, to the project site to increase efficiency and speed. It also recommends the strengthening of the grievance mechanism in expectation of the number of cases that may arise given the level of dissatisfaction over the compensation. The issue of PAPs decision between the resettlement site and self-resettlement is expected to be resolved by the result of the choice surveys</p>	<ul style="list-style-type: none"> - NNP1PC recognizes the need to improve internal procedures including procurement as well as to prepare for effective management of grievances. - In order to further strengthen coordination and communication internally as well as externally, NNP1PC is setting-up the following four Task Forces: 1) Task Force for development of Houay Soup, 2) Task Force for development of infrastructure at 2UR, 3) Task Force for negotiation of villagers of Zone 3, and 4) Task Force for negotiation of villagers of Zone 2LR - NNP1PC has successfully reached agreements with the PAPs on compensation unit rates of most items particularly on agriculture land and rice provision. The unit rate for agriculture land for zone 3 and 5 is 1,200 LAK/m² of which 500 LAK/m² is used to buy new agriculture land in Houay Soup while 700 LAK/m² is paid cash to the PAPs. The rice provision to PAPs is also reviewed and revised from 0.7 kg of un-milled rice to 0.7 milled rice based on negotiations and agreement with the PAPs. Other items that are not covered by the compensation policy are still under technical discussion and approval process. Once

	LTA Recommendations/Required Actions	NNP1 Response
		<p>the remaining compensation unit rates have been agreed, this will be disseminated to PAPs in all villages.</p> <ul style="list-style-type: none"> - The grievance mechanism has been set-up at village and district levels. This includes approved grievance manual, establishment of grievance committee and training to committee members. The manual and relevant forms are made available to the grievance committee in all affected villages. Grievance officers from NNP1PC help and assist the PAPs with filling the forms. The NNP1PC Grievance Team is being strengthened with more staff and improvements to the community relations work.
9.1.4	<p>Health One is the difficulty in implementing the PHAP due to the resignation of the DM for Social Development and Monitoring. Hiring the Team Leader for Health partly addresses the first issue. He has two staff under him.</p> <p>The LTA recommends that the Health Team will update the PHAP in the light of past accomplishments and changes in the ground situation, including the self-resettlement of a substantial number of households. In the updated plan there is a need to translate the objectives of each subprogram to quantifiable targets and in turn into actionable activities and resource allocation. This recommendation is envisioned to ease implementation, monitoring and evaluation</p>	<ul style="list-style-type: none"> - The new Deputy Manager for the Social Development was recruited and started his assignment on 15 February 2015. - The Health team noted that the PHAP and the community Development Plan need to be updated to reflect the new working environment. It is expected that the plan will be finalised by the end of May 2016. In addition to the revision of the above plans, the objectives and quantifiable targets will be developed and updated for better monitoring
9.1.4	<p>Medical Facilities Another issue is the inadequate medical facilities and qualified medical staff in the construction site and in the labourers. The LTA recommends that the project and its contractors will meet the standards set in the Lao Labour Law. The project must also estimate the spell over demand that is taken care of by the district and provincial hospitals. Based on the demand, it can implement corresponding and appropriate support measures based on the type of cases brought to these hospitals from labour camps.</p>	<ul style="list-style-type: none"> - NNP1PC is absolutely committed to complying with the Lao Labour Law. - NNP1 will pay attention to the issues raised and will monitor if the Project is causing any significant increased pressure on the district health services. The monitoring activity will be part of the updated Social Development Plan
9.2.4	<p>Social Management Action Plan Update the SMAP based on the changes in the operating environment. The update requires the identification of new and emerging impacts as well as the persistent impacts. These impacts as much as possible must be translated into quantified data which will serve as the baseline of the updated plan. The data will be gathered through the records of the contractors</p>	<ul style="list-style-type: none"> - NNP1PC will update the SMAP as part of the upcoming updates of the Community Development Plan, which is scheduled to be finalized by 30 May 2016.

	LTA Recommendations/Required Actions	NNP1 Response
	<p>and the government offices, estimates given by persons working for the contractors and the government, records of the SMO and physical observations. The baseline data is needed to set quantifiable targets and to ensure that the same indicators will be used in monitoring progress. The indicators used and data gathered in this mission can serve as the initial component of the set of indicators and baseline data. The updating will also be an opportunity to strengthen the plan by doing the following: (i) eliminate the sub-activities which are no longer applicable, (ii) ensure that all sub-activities are concrete and actionable, (iii) translate the tasks into quantifiable targets, (iv) merge the activities and sub-activities because their difference is not readily discernible, and (v) sharpen the dovetailing between tasks and sub-activities through the targets</p>	
9.2.4	<p>Village skills training The third recommendation is to strengthen the village skills training component in the SMAP and move the implementation of its component activities much earlier. The purpose is to enable the PAP to take advantage of the opportunities provided by the construction period in employment and market.</p> <p>Also recommended to enhance the attainment of two target outputs: employment of at least 500 Lao workers and purchase of local goods</p>	<ul style="list-style-type: none"> - NNP1PC recognizes the importance of implementing a proactive approach to encourage and attract local labour to the employment opportunities that the Project is offering. - For example, in accordance with the request from Xaysomboun Provincial Governor, NNP1PC has instructed the Biomass Removal Contractor to hire local labour as much as possible. The Contractor and NNP1PC have consulted with the villages in Zone 2LR, and the villages can mobilize 300 workers for the biomass removal during 2016. The Contractor has 150 positions and the work will therefore be rotated among the available workers
9.3.3	<p>Joint PAP-Contractor Committee Form and convene a Joint PAP-Contractor Committee instead of the Joint PAP-Workers Committee envisioned in the SDP The contractors are in better position to address the impacts of their operation on the communities than the workers. One of the tasks of the JPCC is to monitor SMAP implementation. A monitoring sheet can be prepared using the indicators derived from the targets. The sheets will be filled up periodically and the data will be compared to the baseline data to track the progress and problems in implementation.</p> <p>The amount of the purchase is not presently monitored but this can be one of the items that the PAP-Contractor Committee can do. This can be part of the monitoring sheet that the contractors will fill up periodically. Through the</p>	<ul style="list-style-type: none"> - NNP1PC will take this recommendation into consideration and consult with representatives of the contractors and the PAPs as part of the updating of the Labour Management Plan

	LTA Recommendations/Required Actions	NNP1 Response
	committee, a mechanism to match and link the suppliers and buyers can be designed and implemented so that the production of the PAPs can be more attuned to the needs of the labour camps	
	<p>Tripartite Monitoring Committee Form and convene a tripartite monitoring committee instead of a Contractors Compliance Committee prescribed in the SDP. The purpose of the committee is to monitor compliance to labour standard, assist the contractors to comply and find solutions to problems in non-compliance. A compliance monitoring sheet can be prepared to be filled up periodically by the contractors. The monitoring sheet can serve as a tool for the committee to validate compliance. The SMO may serve as the secretariat to collect and store the sheets</p>	<ul style="list-style-type: none"> - NNP1PC will take this recommendation into consideration and consult with representatives of the contractors and the PAPs as part of the updating of the Labour Management Plan
<p>1.4.1 9.1 and 9.1.3</p>	<p>The PRLRC can only issue the zone-by-zone cut-off date upon completion of the on-going asset registration.</p> <p>Not Resolved: A cut-off date was issued on 11 April 2014 but the PRLRC will issue another cut-off date for each zone after the completion of asset registration.</p>	<ul style="list-style-type: none"> - The Project's Provincial Resettlement and Livelihood Restoration Committee (PRLRC) declared an eligibility Cut-Off Date for all compensation phases on 11 April 2014. However, as it took the PRLRC more time than anticipated to finalise compensation unit rates, the PRLRC declared 21 of August 2015 as the revised and updated Cut-Off-Date. - The use of the term Cut-off Date among government officials is not always consistent and is not always in line with the official definition of the term applied in the Project. In the Project, the Cut-off Date means the date announced by the PRLRC of commencement of the census of PAPs in the project area and this is the date of eligibility for entitlements and other assistance. There may be different Cut-off Dates for different zones/areas, but there is only one valid Cut-off Date per zone/area. Unfortunately, the Cut-off Date is sometimes confused with the date of completion of the asset registration – this may be a translation issue or because of unawareness of the significance of the official definition; therefore, when the LTA has encountered the mentioning of a second Cut-off Date, it is most likely intended to mean the <i>date that marks the completion of the asset registration for that zone</i>.

List of Acronyms

ADB	Asian Development Bank
CA	Concession agreement
ESMMP-CP	Environmental and social management and monitoring plan construction period
EMO	Environmental Management Office
EMU	Environmental Management Unit
GOL	Government of Lao PDR
IAP	Independent Advisory Panel
LTA	Lenders' technical adviser
MONRE	Ministry of Natural Resources and Environment
NNP1	Nam Ngiep 1 hydropower project
NNP1PC	Nam Ngiep 1 Power Company
OC	Obayashi Corporation
OSO	Owner's Site Office
PAP	Project affected people
PONRE	Provincial office of natural resources and environment
REDP	Resettlement and Ethnic Development Plan
SMO	Social Management Office
TD	Technical Division
WMP	Watershed management plan