

Environmental and Social Monitoring Report

Project Number: 41924-014

August 2015

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

Lenders' Technical Advisor Quarterly Implementation Progress Report No. 3

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

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as Intercreditor Agent
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Nam Ngiep 1 Hydropower Project

Quarterly
Implementation Progress Report No. 3
Environmental & Social Aspects

NNP1/Ph.2/008

July 2015

AF-Consult
Hydropower Plants



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Foreword

The present Quarterly Implementation Progress Report No. 3 – Environmental & Social Aspects is prepared following the site visit carried out by the LTA between May 4 and 9, 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 May 2015 site visit included:

- Ettore Romagnoli, International Environmental Expert
- Karen Jacob, 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 Lenders Technical Advisor's Services.



1 Executive Summary

1.1 E&S Organisations

1.1.1 EMO

The present staffing of the EMO is shown in Figure 4-1. This is the same organizational chart sent to the LTA on 9th March by NNP1PC, which changed and rationalized the previous organizational structure, integrating the “Data/Document control/Admin” section of the EMO with the “Information and Data” section of SMO into one section reducing the key position from 17 to 18.

Most of the key position have been filled: Deputy Managing Director (Mr. Prapard Panaram), EMO Manager (Mr. Viengkeo Phetnavongsay), EMO Senior Environmental Specialist (Dr. Souane Thirakul), EMO Deputy Manager Watershed Management (Dr. Hendra Winastu), EMO Deputy Manager Inspection/monitoring (Mr. Clifford Massey), EMO-SMO Manager Data Base/ Document/ Administration (Dr. Simon Sottas), EMO Team Leader for Inspection (Ms. Souksakhone Sihlath), EMO Team Leader for Monitoring (Mr. Dohuaer Xiailiavue), EMO Team Leader for Waste Management (Ms. Nantarat McWilliam).

The following key positions are still vacant: Biodiversity Team Leader, Watershed Management Team Leader, Biomass Clearance Team Leader and the whole Biomass Clearance Team.

Action Required: The LTA’s general impression is still that the whole EMO structure is over staffed; probably the number of people working in the EMO could be significantly reduced, creating a smaller, more efficient group. This is particularly true because the EMO is spending most of its time in the office instead of being at site monitoring 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 EMO should also be provided with proper testing equipment and an adequate laboratory to make more effective the monitoring activities. Accordingly, it is recommended to improve the site inspection frequency and effectiveness by means of proper testing equipment.

During the previous LTA’s site visit in January it was noticed that the EMO is also shy with the Civil Contractor, not really insisting in the application of the agreed environmental management measures. After the May 2015 visit the LTA has partially changed his opinion: it seems now that there is a different attitude towards the Contractor between the EMO and the TD of the NNP1PC. During the final wrap-up meeting with the Contractor it was noticed that the EMO is acting in the direction of trying to push Contractor to apply sound environmental measures, but the TD instead of supporting the EMO in some cases is more on the Contractor’s side.

1.1.2 SMO

As of the May 2015 mission, the SMO Senior Social Manager position has been filled-up by Mr. Sivixay Soukkharath. However, at the moment his engagement to the Project is only on a part-time basis since he is still involved in another hydropower project. With the numerous



pending issues and delays in the social safeguards requirements, having a part-time SMO Manager who spends only three days in a week with NNP1 is a difficult situation to cope, with consequent delays and problems.

Another issue is the departure of the Deputy Manager for Social Development and Monitoring, who has resigned. The SMO has not filled-up the vacant positions and key staff, qualified Deputy Managers who are key to lead the social safeguards and development activities are leaving the project. This is the third managerial position vacated in the SMO. The first departure was the SMO Senior Social Manager whose contract was not renewed last December 2014 and the second was the Deputy Manager for Relocation and Livelihood.¹ Hiring qualified, competent and experienced key staff is being difficult and will cause further delay of the required resettlement activities.

A feedback among the SMO staff was that their work hours were extended by an extra half hour daily; therefore, in effect they are being required to work overtime every day with no additional remuneration. The staff complained that they were not consulted of this change. It was a directive issued to them. This is an issue of non-compliance with national law which limits working hours to 8 hours a day for 6 days a week², as well as with IFC Performance Standard on Labour and Working Condition which under the Working Conditions and Management of Worker Relationship states: *"The client will provide workers with documented information that is clear and understandable, regarding their rights under national labor and employment law and any applicable collective agreements, including their rights related to hours of work, wages, overtime, compensation, and benefits upon beginning the working relationship and when any material changes occur."* Another issue related to work hours discussed during the Mission is the pay of NNP1PC staff and consultants who were asked to render overtime, including work during weekends, in order to complete the asset registration for the 230kV transmission line. While the issue of overtime pay for NNP1PC staff has been resolved after much debate, the issue of the overtime pay of consultants remains outstanding. NNP1PC maintains that the labor law requires that overtime pay should be given to staff only and not to consultants. IFC PS2 requires that overtime is paid at a premium according to national law. Lao Labor Law (op cit, Article 18) does not distinguish between types of employee.

Action Required:

- LTA recommends an independent review and audit of what is really happening within the SMO organization. Why are key staff departing the project? Why are key positions still vacant? How long will it take for NNP1PC to fill-up the vacated and vacant positions? This is one of the key causes for the delays in fulfilling the social safeguards requirements and social development activities.
- Imposition of additional working hours without consultation and without additional compensation is against the international labour policy. NNP1PC should clarify this feedback.
- IFC Performance Standard #2 requires that NNP1PC set-up a Grievance Redress Mechanism *"for its staff, including contractual workers (and their organizations, where they exist) to raise workplace concerns. The client will inform the workers of the grievance mechanism at the time of recruitment and make it easily accessible to them. The mechanism should involve an appropriate level of management and address concerns promptly, using an understandable and transparent process that provides timely feedback to those concerned,*

¹ As of writing this report, Dr. Simon Sottas, Deputy Manager for Documentation and Database has officially resigned effective 4 June 2015.

² Amended Labor Law, No. 06/NA, December 2006, Article 16



without any retribution. The mechanism should also allow for anonymous complaints to be raised and addressed. The mechanism should not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration procedures, or substitute for grievance mechanisms provided through collective agreements.”

1.1.3 EMO/SMO Collaboration

During the site visit it was noticed that there is limited collaboration between EMO and SMO.

Action Required: NNP1PC to 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 forestry and watershed management in the Houaysoup resettlement site, fisheries monitoring, and community issues arising from environmental impacts from construction. Good coordination at field level and with the Bolikhamxay Resettlement Management Unit (RMU) in Paksan will improve if the weekly meetings between RMU and Project can continue.

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.

As already mentioned in the previous report, the LTA fully agrees with the comments already given by the IAP during their last visit at site, 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 the Theun-Hinboun projects, and include the expanded mandate of MONRE to oversee integrated environmental conservation interests of water, forest, and biodiversity protection at the regional and district levels.

It is also very important that EMO continues (as it is partially already doing) trying to involve as much as possible EMU in the monitoring activities and in the site visits. However it would be also very important to verify what is happening at central level (with MONRE) to the funds already paid by the company and why such funds have not been distributed to the PONRE, affecting the EMU independent monitoring capability.

There is good coordination between the RMU of Bolikamsay and the project according to the District Governor of Bolikhan. However, this is not the case with Xaysomboun. The Vice-Governor complained that they don't clearly understand the role of the RMU and its relationship with PONRE and the District government. RMU likewise complained that PONRE has been overstepping RMU's role because NNP1PC coordinates more with PONRE rather than with the RMU of Xaysomboun.

Another complaint raised by the Hom District Vice-Governor about NNP1PC staff is the time spent in the project area. He said that the staff usually arrive late on Monday afternoon and leave on Friday after spending 2-3 hours in the project area. The effect of this is that the time spent in the project area by the project staff is not effective particularly at this time, when there are many issues to be clarified and discussed with the communities.



Action Required: Although some of the complaints are valid, there seems to be some “malicious intent” on the side of the RMU’s complains about PONRE and NNP1PC. This still needs to be further investigated. However, feedbacks and complaints of the Vice Governor, such as clarifying the roles of PONRE, RMU and the District government offices are valid. Another important complaint to be addressed by NNP1PC is the work schedule of the staff at the project area. The staff should be based in the project area where they can be daily available and accessible to district GoL and to the communities. This has proven effective in Bolikhamxay where the SMO are already in Pakxan.

1.1.5 Contractors’ Organisations

An E&S department exists within the civil contractor Obayashi, but its’ staff has limited capacity.

Action Required: NNP1PC should stress the need for Obayashi to (i) hire qualified E&S staff on site; (ii) for such staff to regularly check the subcontractors performance on environmental aspects, particularly wastewater treatment and waste management, and (iii) record construction related grievances and social problems of the population of the near-by villages. This will supplement the EMO and SMO team’s tasks to monitor the compliance with established SSESMPs and manage social concerns.

1.2 Site Specific 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. This is also required by the project's Concession Agreement (CA).

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

1. Referring to the **wastewater treatment** systems EMO on one side should push the Contractor to involve a qualified wastewater treatment engineer to properly design and dimension the wastewater treatment systems, and on the other should check more frequently and in different hours the effluents to verify the treatment systems effectiveness. It is strongly recommended that all camps are provided with underground pipes sewerage systems and properly sized septic tanks and relevant clarified water dispersing systems (which is not the case of the RT camp and of the Sino-hydro camp).
2. As far as **solid wastes management** is concerned, the first thing is to reduce the amount of undifferentiated solid wastes by implementing a proper separate collection system that will allow to recycle more 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. It is strongly recommended to realize the land fill in the selected area, but reviewing the design according to the recommendations given in the previous LTA’s report and reminded in the relevant section of this report. The land fill 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.



3. Tunnel **excavation wastewater**: the Contractor shall not release 2/3 of the water with high turbidity content directly into the Nam Ngiep River and the EMO shall monitor the implementation of such recommendation. The Contractor shall provide the characteristics of the chemical additive used in the water clarification plant, so that the EMO can verify any impact from their use in the area and evaluate if there are some residues of those chemical into the “cake” and in the water released back to the river.
4. A careful revision of the **slope stability** in the project area should be carried out to identify potentially unstable areas and to assess if and where relevant stabilization measures are needed.
5. 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.

1.3 Environmental Plans

1.3.1 Present Status

The updated BOF (Biodiversity Offset Framework) was discussed at central level on 4 March 2015 and endorsed by MONRE on 12 March 2015. The final updated BOF was submitted to ADB on 13 March 2015.

Referring to the Biodiversity Baseline Survey the following activities are reported: survey design has been prepared by ERM (the Consultant) in consultation with NNP1PC and ADB, several discussions/workshops were made for the detailed plan, expected TOR for biodiversity baseline survey and report development. The consultant is on board since April 2015 and the actual field works is supposed to commence in May 2015 (starting from village interview and camera trapping installation).

Action Required: As far as Biodiversity Offset is concerned: biodiversity survey shall identify and define the remaining biodiversity values within the watershed; parallel options on potential offsets outside watershed (in Xaysomboun or Bolikhamxay provinces) should be explored; consequently the survey and Biodiversity Advisory Committee shall be mobilized as soon as possible.

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 recruit the Watershed Management team as soon as possible, 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, expected to be completed by January 2016, and to include the inputs from the Biodiversity surveys, to be completed by August 2015.

1.4 Social Issues under NNP1PC Responsibility

1.4.1 Social Safeguard Plans

- a. Issuance of cut-off date: still not formally announced to the PAPs, although this has been discussed among the RMU, district and village authorities. During the meeting with the



Xaysomboun Provincial Vice-Governor, it was stressed that it shall be formally announced. The ADB Mission suggested and the Xaysomboun Provincial Vice-Governor agreed that the cut-off date will be revised based on the completion of the Asset Registration and formally announced to PAPs. For 2LR, Asset Registration is expected to be completed by October 2015 and for 2UR by December 2015. In the meantime, PAPs continue planting crops and are building new, expanding or repairing their houses. This was observed during the consultation meetings in the villages. Some households have repaired their roofs, which may be necessary in some cases, and some have extended their houses. If these houses have not yet been covered by the asset registration, by the time these new buildings are registered, the compensation amounts will have doubled or tripled compared to the baseline survey data gathered so far.

- b. Delayed approval and issuance of the compensation unit rates: 2LR PAPs are complaining that the latest rates are not acceptable because these are the same presented to them during the first consultation where they pointed out the rates they were expecting. Xaysomboun province says this is not the case. The project's Joint Steering Committee (JST) instructed the PRLRC to finalise rates not later than the end of May 2015. 2UR PAPs said that no consultation on compensation unit rates has taken place with them since the last meeting in 2014 when the compensation process was presented. Cognizant of the need to acquire the required lands in Houaysoup in order to develop the resettlement site in time for the relocation of Hatsaykham in early 2016 and for compensation payments to be paid for affected lands in Hatsaykham and the 230 kV transmission line alignment, Bolikhamxay Governor RMU has proposed to NNP1PC that they make a formal request to the Bolikhamxay Provincial Governor to use the same unit rates as for the access roads. If Bolikhamxay goes ahead before Xaysomboun, a potential issue is that the Xaysomboun rates might be higher, as requested by the PAPs of 2LR and 2UR. NNP1PC and Bolikhamxay RMU have discussed that in case of a discrepancy or gap between the final unit rates and Bolikhamxay rates, the gap will be paid by NNP1PC. However, if there is overcompensation, PAPs need not return the excess amount. The matter remains open.

1.4.2 PAPs Resettlement

- a. De-gazetting of an additional 648 hectares increasing the total resettlement area to 2,393 hectares to cover residential and agricultural farmlands for the PAPs to be resettled: DoLA has agreed in principle and will confirm the de-gazetted area after field verification of boundaries.
- b. Construction of houses for PAPs of Hatsaykham is scheduled to start in October 2015. UXO clearance is still on-going but is expected to be completed before the start of the construction of the resettlement houses.
- c. The mission reminded that the updated IEE for Houaysoup, including access road, is required to be submitted and endorsed by ADB not later than July 2015. The IEE is a requirement before any land preparation and construction activity can start. It should also be noted that consultation meetings shall be carried out with PAPs on the layout of the village and the location of their houses and farmlands, which shall be acceptable and approved by the PAPs to be resettled in Houaysoup. NNP1PC requested that they prepare a mini IEE for the improvement of the existing dirt road ahead of the Houaysoup IEE so that preparation works can start immediately.
- d. Based on the studies conducted by the local authorities and NNP1PC, Xaysomboun Vice-PG and Hom District authorities were informed that alternate resettlement sites were not feasible. PAPs need to decide based on the two choices offered in the entitlement matrix as presented in the REDP and Annex C: to be resettled in Houaysoup Resettlement Area or to self-resettle.



Many 2LR PAPs cannot make a clear decision on what resettlement option to take. They are all waiting for the compensation unit rates. Following the release of the unit compensation rates and the completion of the asset registration, an Indicative Choice survey should be conducted.

1.4.3 Critical Issues

The two most critical issues mentioned above are the issuance and announcement of the cut-off date and the approval and issuance of the compensation unit rates. Without these, resettlement activities, particularly the relocation of PAPs to Houaysoup, cannot be implemented.

The resignation of the DM for Social Development and Monitoring may create difficulties in the implementation of the Public Health Action Plan, which includes health survey and health education particularly the prevention of the spread of diseases such as STDs, malaria, intestinal diseases, etc.

Medical facilities and qualified medical staff in the construction site and also in the labourers camps are still inadequate. This is non-compliant to IFC Performance Standard 2 - Labour and Working Condition. This is the second time this issue has been raised and NNP1PC and the civil Contractor, Obayashi still continue to ignore it.

1.5 Budget Monitoring

The breakdown of the E&S budget according to the approved 2015 yearly budget is shown in the Table 1-1.

Table 1-1 2015 E&S Budget

	Items	Amount (\$)
1	Resettlement	10,140,000
2	ESD, EMU, PRMLCRC, RMU	5,520,000
3	Compensation	1,630,000
4	Environmental Management	1,070,000
5	Environmental Funds	730,000
6	Livelihood restoration	310,000
7	Other costs	710,000
	TOTAL ESD	20,110,000

If this budget is maintained and actually used, the total spent on environmental and social matters up to the end of 2015 would be about 61% of the total budget, which could be deemed reasonable, considering that more than 50% is allocated to resettlement. It shall be noted however that the LTA has not seen a detailed planning for the activities to be carried out in 2015.

1.6 Concluding Remarks

For the environmental monitoring activities at site, some progress has been achieved since the previous LTA's site visit, in terms of wastewater management and also in terms of waste management; however there are many things to do to improve the environmental performance of the projects. At this stage it is very important to improve and fix the management of wastewater, by having an experienced environmental engineer (a Contractor's employee or a consultant) to verify the effectiveness of the wetland wastewater treatment systems. Also the landfill design, even if improved compared to the previous site visit, should be further revised and improved as



per comments given in the following Chapter 7. 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 operation 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 shall be issued 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 and discussed, and to 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 local communities, and enabling contractors to defer and evade responsibilities.

Since December 2014 up to May 2015, the SMO Manager and two Deputy Managers have resigned. Another DM is also planning to resign within June 2015. NNP1PC should take serious action about this alarming situation. The social safeguard requirements and the required activities and processes are more than a year delayed. The departure of key SMO staff will further delay the accomplishment of the resettlement and social activities.



2 Environmental & Social Documents Received

2.1 ADB Documents

The LTA is regularly checking / retrieving the environmental and social documents included in the ADB website.

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 and taken into account for the preparation of the present report:

- Priority areas for erosion and sediment control – wet season 2015;
- EMO Environmental Compliance (PowerPoint presentation);
- Environmental Monitoring Programs: Water Quality, Dust Emission, Noise and Vibration Monitoring (PowerPoint presentation);
- EMO – Waste Management (PowerPoint presentation);
- Occupational Health and Safety (PowerPoint presentation);
- Earth System: “Environmental Audit: Biodiversity Impacts of the 230 KV Transmission Line (Dam site to Tower 54)”;
- Earth System: “IEE Addendum: Investigation of Re-alignment”
- NNP1 Response to Report Number 4 of the Independent Advisory Panel on the Nam Ngiep 1 Hydropower Project, Lao PDR - Fourth Site Visit, 7-14 December 2014
- NNP1PC Comments on LTA Quarterly Report No.2 on E&S Aspects dated April 2015
- Quarterly Social Monitoring Report 2015Q1 (as of March 31, 2015)
- Corrective Action Plan on the Fatal Accident of the Supplier’s Dump Truck
- Corrective Action Plan on the Accident at the Diversion Tunnel

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 did not yet start any activity at site.

Specifically referring to the environmental issues the following information were received:

- Song Da 5 RCC Worker camp general layout and waste water treatment system;
- RT Camp layouts;
- Reformation plan for the TCM temporary camp;
- Map of the proposed spoil disposal areas;
- Layout and design of the Waste Disposal area.



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
3 May (Sun)	Arrival in Vientiane
4 May (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 -14.00: Finalization of the schedule and logistical arrangements 14.00-16.00: Travel to Paksan of the LTA Environmental Specialist
5 May (Tue)	8.30-10.30: meeting, together with the IAP Environmental Expert, with EMU Bolikhamxay in Paksan 12.00-14.30am: meeting, together with the IAP Environmental Expert, with EMO team in Paksan 14.30-18.00: trip to Xaysomboun
	8:30-10:30 Meeting at Hom District 13:00-17:00 Visit and meetings with the 2LR villages
6 May (Wed)	8:30-11.30: meeting with Xaysomboun Provincial Governor 11:30-16:00: return to Paksan
	8:30-10.30: meeting with Xaysomboun Provincial Governor 11:00-12:00 meeting with XSB RMU 14:00-17:00 travel to Paksan
7 May (Thu)	8:00-17:00: Site visit together with the IAP, the EMO Manager and senior officers, NNP1PC Technical Department representatives and a representative of Obayashi to the construction site
	7:30-15:00 meetings with 2UR villages 15:30-17:00 meeting with District Governor of Thathom 17:00-20:00 travel to Paksan



Date	Activities
8 May (Fri)	<p>8:00-8.30am: meeting with EMO to discuss some issues before the following meeting with Obayashi</p> <p>8.30 – 10.30: meeting with Main Contractor management to discuss the environmental issues findings of the site visit</p> <p>10:30-14.30: participation to the meeting between the IAP and ADB biodiversity and watershed team and the EMO</p> <p>14:30-17.30 Travel to Vientiane</p>
	<p>8:00-11:00 interview camp followers at Hat Gnium and Hatsaykham</p> <p>13:00-15:00 meeting with Governor and RMU of Bolikhamsay</p> <p>15:30-17:30 travel to Vientiane</p>
9 May (Sat)	<p>8:00-10.00am: office work</p> <p>10.30 – 13.00: meeting with ADB Environmental Specialist and with NNP1PC to discuss some of the environmental open issues related to the construction activities</p> <p>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.</p>

Persons met:

NNP1PC - Management	<p>Mr. Yoshihiro Yamabayashi (Managing Director)</p> <p>Mr. Tsutsui Shoji (Deputy Managing Director of Technical Power Plant)</p> <p>Mr. Prapard Pan-Aram – Deputy Managing Director Environmental & Social Department (ESD)</p>
NNP1PC - Technical Division	<p>Mr. Yamane Yuichi– Planning Division Manager, Technical Dept.</p> <p>Mr. John Cockcroft – Senior Advisor (Construction and Contract Management)</p>
NNP1PC - Environmental and Social Divisions	<p>Dr. Souane Thirakul – Senior Environmental Specialist</p> <p>Mr. Viengkeo Phetnavongxay – EMO Manager</p> <p>Mr. Clifford Massey – Deputy Manager, Compliance & Monitoring</p> <p>Mr. Hendra Winastu – Deputy Manager, Watershed Management</p> <p>Ms. Souksakhone Sihalath – Team Leader, Environment Inspection</p> <p>Mr. Douaher Xailiavue – Team Leader, Environment Monitoring</p> <p>Ms. Nantararat McWilliam – Team Leader, Waste Management</p> <p>Ms. Sengdavanh Phongpaseuth – Document Control</p> <p>Mr. Sivixay Soukharath - SMO Senior Social Manager</p> <p>Other members (names not recorded)</p>
IAP - Independent Advisory Panel	<p>Mr. Anthony Zola – Resettlement Specialist</p> <p>Mr. Songwit Chuamsakul - Social Specialist</p> <p>Dr. Richard Frankel – Environment Specialist</p> <p>Dr. Kathy McKinnon – Biodiversity Specialist</p>
ADB - Asian Development Bank	<p>Ms. Kurumi Fukaya (Investment Specialist/Project Team Leader)</p> <p>Ms. Jocelyn Munsayac (Social Specialist)</p> <p>Mr. Seji Noda (Environment Specialist)</p> <p>Ms. Elizabeth Mann – Social Specialist</p> <p>Mr. Matt Corbett – Environment/Watershed Management Specialist</p> <p>Mr. William Robichaud – Biodiversity Specialist</p>



3.3 Planning for the Next Quarter

The next site visit by the LTA environmental and social team still has to be precisely defined. Tentative program is as follows

- Participation of Mr. Ettore Romagnoli to the Workshop on Watershed Management in the second half of September. A short report will be prepared after the visit.
- Site visit by the technical and E&S team of the LTA in early December, to coincide with ADB/IAP visit. The 5th LTA Quarterly Report (General and E&S Parts) 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 visits;
- preparing the report indicated above after the site visits.

Figure 4-1 NNP1Environmental and Social Management Office Organisational Chart in place during the site visit.



This is the same organizational chart sent to the LTA on 9th March 2015 by NNP1PC, which changed and rationalized the previous organizational structure, integrating the “Data/Document control/Admin” section of the EMO with “Information and Data” section of SMO into one section reducing the key positions from 18 to 17.

Most of the key EMO positions have been filled: Deputy Managing Director (Mr. Prapard Panaram), EMO Manager (Mr. Viengkeo Phetnavongsay), EMO Senior Environmental Specialist (Dr. Souane Thirakul), EMO Deputy Manager Watershed Management (Dr. Hendra Winastu), EMO Deputy Manager Inspection/monitoring (Mr. Clifford Massey), EMO-SMO Manager Data Base/ Document/ Administration (Dr. Simon Sottsas)³, EMO Team Leader for Inspection (Ms. Souksakhone Sihath), EMO Team Leader for Monitoring (Mr. Dohuaer Xiailiavue), EMO Team Leader for Waste Management (Ms. Nantararat McWilliam).

The following key position are still vacant: Biodiversity Team Leader, Watershed Management Team Leader, Biomass Clearance Team Leader and the whole Biomass Clearance Team.

4.1.3 LTA’s Recommendations

The LTA’s general impression is still that the whole EMO structure is over staffed; probably the number of people working in the EMO could be reduced, creating a smaller, more efficient group.

The Project replied that it is of a different opinion: *“the Compliance Inspection and Environmental Monitoring Teams are carrying out inspections for all the project area, including the transmission lines and later on resettlement site construction with many contractors and locations. The EMO will consider the LTA comment and adjust it if seen necessary”*. The LTA remains of his opinion particularly because the EMO is spending most of its time in the office instead of being at site monitoring 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 areas to verify that the environmental management measures are properly applied by the Contractors and their Subcontractors. EMO should also be provided with proper testing equipment and an adequate laboratory to make more effective the monitoring activities.

During the previous LTA’s site visit in January it was noticed that the EMO is also shy with the Civil Contractor, not really insisting in the application of the agreed environmental management measures. After the May 2015 visit the LTA has partially changed his opinion: at the moment it looks more that there is a different attitude towards the Contractor between the EMO and the TD of the NNP1PC. During the final wrap-up meeting with the Contractor it was noticed that the EMO is trying to push the Contractor to apply sound environmental measures, while the TD in some cases is more on the Contractor’s side. Therefore the LTA recommends that compliance monitoring, compliance inspection team should always include a TD staff member so that any shortfalls identified by the EMO can be directly notified by TD to the Contractors without internal delays.

For what refers to the Data/Document/Administration group, according to information received before the site visit (March 9th) this section has been merged with the similar section of the SMO, reducing one key position (the Deputy Manager position), but not reducing the whole staff. This group (referring to the environmental portion) looks over staffed since it is supposed to take care only of the environmental data/document/administration: in similar cases these aspects are managed by three/four persons (for the environmental component). It is also not understandable

³ As of writing this report, Dr. Simon Sottsas, Deputy Manager for Documentation and Database has officially resigned effective 4 June 2015.



why with such a big number of personnel it takes so long to NNP1PC to prepare the quarterly reports. While writing the present report (mid of May) the LTA has not yet received the final 2014 4th quarterly report, almost six months after the end of that quarter!

4.2 SMO

4.2.1 General

The SMO Senior Social Manager position has been filled-up by Mr. Sivixay Soukkharath. According to the IAP Team Leader, Mr. Sivixay is highly qualified to lead the SMO team. However, at the moment he is working with NNP1PC on a part time basis only, because he is still working for another hydropower project and is only able to be with NNP1PC 2-3 days a week. Therefore at the moment he is acting more on an advisory than on a managerial role, while day-to-day managerial activities are undertaken by Mr. Chakrit Duanjai. What is worrying about this situation is the delayed activities of the social component. A full-time SMO Senior Manager who can provide strategy and guidance to cope with the delays is much needed by the project.

The DM for Relocation and Livelihood for 2UR has been filled with the recent hiring of Mr. Bounmy Chidpanga. With the hiring of Mr. Bounmy, it is foreseen that activities in 2UR will move. It is unfortunate that Mr. Pottier, DM for Resettlement Infrastructure was only in place for a month before resigning prior to the Mission's arrival, while the DM for Social Development and Monitoring has resigned from the project effective end of May 2015. As of writing this report, the DM for Data/Document/Administration has also resigned effective 4 June 2015.

4.2.2 Staffing

Based on the revised chart provided in June 2015 after the site visit, the SMO is 40% understaffed with only 60 out of 104 posts filled. Three out of five SMO deputy manager positions and the entire grievance team are vacant. These positions are critical and need to be filled up immediately otherwise all resettlement and social activities will be delayed while construction is in full swing and on time. NNP1PC should also indicate in the organizational chart which are actual staff positions and which are consultants.

The LTA understands that project offices will be established at the District and affected villages so that the PAPs and local authorities will have access to the SMO staff. Also, the office in Paksan will be maintained and some staff will remain in this office to provide support to the staff in the project site. Few staff will also remain in Vientiane.

The comment of the RMU of Xaysomboun should be noted. According to them the work style of most of the staff, going in the communities on Monday evening and departing in Friday morning is ineffective because some villagers are only available for meetings during Friday and the weekend. He suggested that this work schedule be improved so that meaningful discussions with the communities could be attained.

4.3 EMO/SMO Collaboration

During the previous site visit it was noticed that there was still a limited collaboration between EMO and SMO. It was 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 seems to be improved. Specifically:

- Resettlement: SMO and EMO are currently working together on establishing an Integrated Natural Resource Management Plan for the Houaysoup resettlement site. In case alternative self-resettlement locations get established, close coordination of EMO and SMO will take place to address issues like watershed management and land use as well as biodiversity impacts;
- Fisheries: EMO and SMO have established a joined Fisheries Working Group, led by the SMO DM Social Development and Monitoring to integrate the different fisheries components related to the Project.
- Water quality monitoring: EMO is providing regular monitoring reports and would provide warning to SMO in case water pollution occurs in areas critical 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 so far no water analyses laboratory has been established by the EMO. Samples are taken once a month and sent to Thailand for analyses!
- Soil erosion: Erosion Control Measures were recommended for all sensitive construction areas and the Contractor has begun to implement them.
- 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 MONRE, EMU

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.

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 NNP1PC. The EMU monitoring reports would include findings, deviations (if any) from the EMP and the CA commitments, and villagers' 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 May 5th the LTA together with IAP and NNP1PC EMO had a meeting with the PONRE officers in Bolikhamxay and specifically with EMU People. During the meeting the following issue were discussed:

- Communication between EMO and EMU: the EMU has regularly received the EMO reports but, due to lack of funds, cannot carry out regular and independent inspections at site. NNP1PC pay the established amount to MONRE to implement the EMU activities, but funds have not been distributed from the central to the local level. Therefore EMU asked if it is possible to deliver the agreed funds directly to PONRE to allow the EMU to implement the capacity building activities and to begin the monitoring, which is not possible according to Lao law. Moreover the EMU asked if it is possible to join the monthly site inspection with EMO.
- EMU monitoring on biodiversity issues: there are two EMU officers designated to follow up the biodiversity survey.
- Training: during the previous meetings the IAP suggested that a workshop on the lesson learned in other similar hydropower projects in Laos would have been useful to help the capacity building of the EMU. So far such workshop has not been organized yet, but the training on compliance and monitoring was organized by MONRE (using the Nam Ngiep 1 case study) and three officers (two from the province and one from the district) participated.

5.2 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 the 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. The meeting would be an appropriate time to discuss how best to make use of NNP1PC 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 already partially doing) trying to involve as much as possible EMU in the monitoring activities and in the site visit. However it would be also very important to verify what is happening at central level (with MONRE) to the funds already paid by the company and why such funds have not been distributed to MONRE, affecting the EMU independent monitoring capability. NNP1PC should coordinate on this with MONRE and develop a transparent mechanism for funds utilization.



6 Contractors' E/S Organisations

6.1 Civil Contractor

An E&S department exists in papers within the civil contractor Obayashi, but its' staff has limited capacity.

So far (as verified during the visit) a person without the adequate competences (he is an infrastructure engineer) has been appointed as responsible for the environmental issues on the Contractor's side. His lack of competence was clear both during the site inspection, when he was often not able to answer to the questions raised by the IAP and the LTA, and during the wrap – up meeting with Obayashi, when all answers to the requests of clarification from the LTA and the IAP were given directly by Obayashi Project Manager.

6.1.1 LTA's Recommendations

NNP1PC should stress the need for Obayashi to:

- hire qualified E&S staff on site;
- implement as soon as possible EMO recommendations;
- 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.

6.2 Other Contractors

An Environmental, Health and Safety Officer is shown in the organisation chart of the Transmission Line Works Contractor and an HSE group at site is foreseen in the organisation chart provided by the Hydraulic Metal Works Contractor, in both cases without further details. Nothing related to environment is shown in the organisation chart of the EMWC. NNP1PC shall request full details of the environmental, health and safety organisations as part of the ESMMP-CPs, before the contractors start field activities.



7 Site Specific Environmental & Social Aspects

7.1 Reported Inspections / Non-Conformances

According to NNP1PC March 2015 monthly progress report two non-compliance issues were considered open (requiring corrective action), and assessed as Level 1 non-compliance issues. There were no Level 2 and Level 3 non-compliance issues identified/assessed and still open at the report issuing date. In addition, two issues: Overall construction camp sites, and Songda camp & industrial area– were pending as no actions have yet been initiated.

Table 7-1 Open Non-Compliances by End March 2015

Site	NON COMPLIANCES		
	Level 1	Level 2	Level 3
Road A	0	0	0
PKC Camp	0	0	0
Quarry1	0	0	0
Road P1	0	0	0
MV-DC Camp	0	0	0
TCM Camp	0	0	0
Song DA Camp & Industrial area	1	0	0
RT Camp	0	0	0
V&K Camp	0	0	0
PKC Sub-contractor temporary camp	0	0	0
PAKC Camp	0	0	0
Sino hydro camp	0	0	0
Regulation dam	0	0	0
Road T5	0	0	0
Batching plant	0	0	0
Diversion Tunnel	0	0	0
Road P2	0	0	0
Road T1	0	0	0
Road T4	0	0	0
Road T11	0	0	0
Road T8	0	0	0
Road T9	0	0	0
Road T13	0	0	0
Spoil Disposal N#6	0	0	0
Spoil Disposal N#7	0	0	0
Overall construction and camp sites	1	0	0
GRAND TOTAL	2	0	0

7.2 Findings from the Site Visit

7.2.1 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).



Four construction workers camps were visited during the May 4-9 LTA mission. These are the Sino Hydro camp (the Chinese workers camp); Right Tunnelling (the Thai workers camp); Songda camp (Vietnamese workers camp) and the TCM Camp (Lao-Cambodian workers camp). The findings of the visit are summarised in the Table 7-2. Corrective actions needed and other comments are discussed in the following Paragraphs 7.2.2 and 7.2.9.

Table 7-2 Conditions of Construction Camps

Camp	Observations
Sino Hydro Chinese Camp	<ul style="list-style-type: none"> Facilities including bedrooms are relatively clean. It has its own untreated water supply system directly pumped from underground water. Wastewater (all together grey and black water) is collected through a pipe system into a collection tank and then partially re-used for irrigating flowers and vegetables in the camp and partially discharged on the slopes nearby the camp.
Right Tunnelling Thai Camp	<ul style="list-style-type: none"> Has a medical clinic with a nurse on duty. There is an open canal ditch that collects wastewater drained from the kitchen and bathrooms. This drains into an open dug pond at the back of the camp where compared to the previous site visit the improvements have been the “treatment” of the water with chlorine and the “aeration” of the treated water. The concrete pool beneath the fuel tank is not big enough to contain all the fuel in case of tank breakage. The waste and polluted water collection system and the relevant de-oiling in the workshop area should be checked and modified to allow a proper separation of oil and grease, before releasing the water into the grey sewerage system.
Songda Vietnamese Camp	<ul style="list-style-type: none"> It has a small clinic with some medicines and there is a nurse. Sleeping rooms have four double deck beds. Each room has a septic tank underneath the floor where wastewater from the toilet is deposited. The wastewater treatment system was under modification during the site inspection, with the construction of a wetland filtration system.
Thai-Lao- Cambodian Camp	<ul style="list-style-type: none"> This is the oldest among the workers camp since this sub-contractor worked on the access road. The work on the access road has decreased and so the number of workers living in this camp. Sleeping dormitories are still miserable, even if they have been slightly improved by providing a little bit more privacy. The women’s sleeping quarters are equally bad. The wastewater system has been significantly improved compared to the previous site visit. The wastewater is drained in a series of ponds where a wastewater wetland filtration system is implemented. This kind of wastewater systems could work, but should be designed and controlled by a sewerage systems expert. The clean-up of the previous system should be completed. The concrete pool beneath the fuel tank is not big enough to contain all the fuel in case of tank breakage.



7.2.2 Wastewater Treatment and Waste Disposal

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 NNP1PC EMO last three/four months efforts in pushing the Contractor to improve such facilities and some improvements have been verified at site:

1. in the TCM camp the wastewater treatment system has been improved adding a wetland filtration treatment system at the end of the process, which could be a good system but should be properly dimensioned and verified by an environmental engineer with experience on the matter. The EMO should verify the effectiveness of such system by properly monitoring the effluents (more times than once a month and also during the day in different hours);
2. in the Songda camp also the improvements of wastewater treatment system were under construction during the site inspection by realizing a wetland filtration treatment system (also in this case the comments made on the TCM camp applies). Moreover it was noticed that all the septic tanks are located under the toilet's floor inside the worker's quarters, without any possibility of inspection and sludge removal;
3. in the RT camp some improvements were noticed as well (chlorine and aeration systems were added to the system), but this system is still not acceptable;
4. in the Sino-hydro camp all the waste water (black and grey) is collected into an underground tank (most probably not a septic tank, but just an holding tank) and then reused for garden irrigation and in some cases for irrigating vegetables cultivated inside the camp by the workers! Of course this system is not acceptable.

Further improvements are recommended in Paragraph 7.2.8.

7.2.3 Waste management

Some improvement could be verified also on this issue:

- the EMO conducted an extensive work in identifying the recycling possibilities in the Paksan area and in Vientiane finding a potential recycling solution for most of the wastes and supervised the selling of some wastes from construction site;
- the EMO conducted also several training activities for the NNP1PC staff (EMO, SMO and TD) and a workshop on waste management at Ban Hatnguon, Ban Hatxaykham and Ban Thaheua;
- the “temporary” waste collecting area close to the TCM camp was cleaned up;
- a more detailed design of the landfill was provided to the LTA including a leachate collection system.

The separate waste collection is well designed, but needs to be implemented by the Contractor. The landfill design is improved compared to the previous version available in January, but still doesn't meet the requirements because:



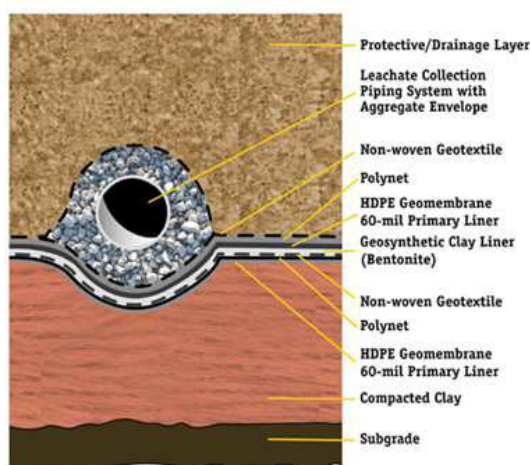
- the overall layout of the landfill is very complicated with many relatively small pits, which in the LTA's opinion make the management of wastes very difficult, the management of leachate more inefficient, the construction of the landfill more costly, the overall final recovery of the area more complicated, etc.
- the design doesn't include the spreading of a layer of clay as required by the IFI guidelines;
- there is no mention of the liner (during the discussions Obayashi said that is going to use a liner, but they are still looking for an adequate supplier),
- the leachate collection system looks quite complicated, the design of the leachate pipe is wrong⁴ and there is no mention of the treatment of the leachate effluents (according to the design it looks like the leachate is released after some ponds into the surface water system),
- rain water collection system: an open ditch to collect rain water is included in the design, but covers only a portion of the area and should be extended to isolate the whole landfill from the surrounding area. The water collected by that ditch is simply released along the north-eastern slope where the spoil disposal area is supposed to be realized.

7.2.4 Treatment System for the Diversion Tunnel Seepage Water

To reduce the suspended sediment load of the water coming out from the diversion tunnel during excavation activity, according to a practice common in Japan the Contractor has installed equipment that extracts the sediments from the water and releases clean water with a very low NTU value.

This equipment should limit and/or avoid the release of water with high turbidity into the Nam Ngiep River. One problem is that only a portion (1/3) of the water flow coming out from the tunnel is regularly treated, the remaining portion is simply released into the river without any treatment. It is not clear if this is because the equipment is undersized, or the seepage flow is higher than estimated: in any case, it would be necessary to have some initial settling facility to

⁴ This is how a leachate pipe should look like





concentrate sediment in a fraction of the water, which would then be sent to the treatment plant, while the rest of the water, already relatively clean, is released to the river.

For the processed portion, the sediments are extracted from the water using a chemical that helps the flocculation and allows to have a semisolid “cake” at the end of the process. No information is available on the chemical composition of the “cake”. Such composition is important to understand if that material shall be considered as an excavation waste and disposed in the spoil disposal area, or as a chemically polluted material, to be disposed as an hazardous waste.

7.2.5 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. However there is a need for further interventions (particularly downstream of the dam axis), because 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.

7.2.6 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.

7.2.7 Quarry

The quarry for aggregate production 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 and slopes, 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.

7.2.8 LTA’s Recommendations

In general terms it is 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 to the **wastewater treatment** systems, the EMO on one side should push the Contractor to involve a qualified wastewater treatment engineer to properly design and dimension the wastewater treatment systems, and on the other should check more frequently and in different hours the effluents to verify the treatment systems effectiveness.

It is strongly recommended that all camps are provided with underground pipes sewerage systems and properly sized septic tanks (see Figure 7-1) and relevant clarified water dispersing systems (which is not the case of the RT camp and of the Sino-hydro camp).

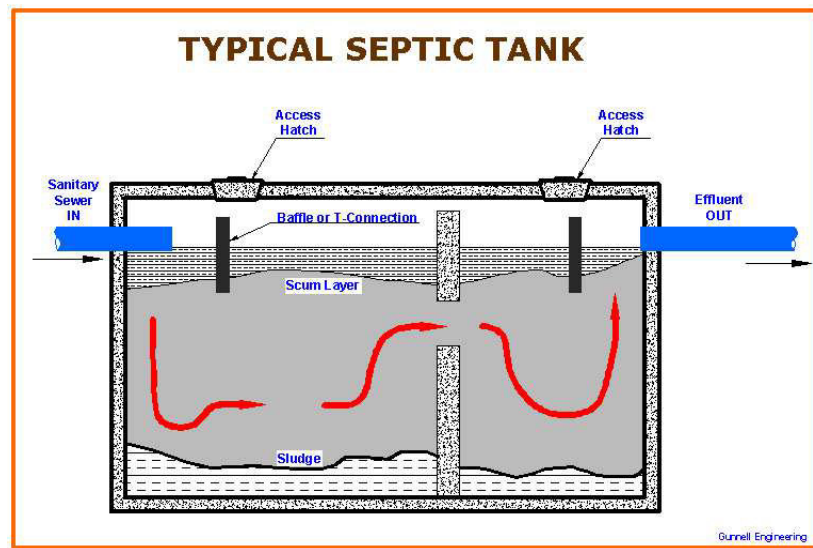


Figure 7-1 Typical Septic Tank

Referring to **solid wastes management**, the first thing is to reduce the amount of undifferentiated solid wastes by implementing a proper separate collection system that will allow to recycle more 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. NNP1PC should also explore the possibility of segregating the organic waste and using anaerobic composting for its treatment.

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 already given in the previous LTA's quarterly report that is worth reminding again:

- Location restrictions — Ensure that landfills are built in suitable geological areas away from faults, wetlands, flood plains, or other unsuitable areas. This comment can be considered implemented, because the area looks suitable.
- Composite liners requirements — Include a flexible membrane (geomembrane) overlaying two feet of compacted clay soil lining the bottom and sides of the landfill, to protect groundwater and the underlying soil from leakage. This comment is under consideration by the Contractor who is evaluating the type of liner to be used.
- Leachate collection and removal systems — Such collection systems, arranged on top of the composite liner, will remove leachate from the landfill for treatment and disposal. These systems should be revised in the design as per given comments.
- Operating practices — Compacting and covering waste frequently with several inches of soil help reducing odour; controlling litter, insects and rodents, protecting public health.
- Groundwater monitoring requirements — Testing groundwater through wells, to determine whether waste materials have leaked from the landfill. The EMO replied that such monitoring system is not necessary. The LTA is of a different opinion: the efficiency of the landfill should be monitored also in terms of avoidance of underground water pollution. Monitoring the underground water downstream the landfill would be very useful to intervene with corrective actions whenever pollution occurs.



- Closure and post closure care requirements — Covering landfills and providing long-term care of closed landfills. The design doesn't include any description of these procedures.
- Corrective action provisions — Controlling and cleaning up landfill releases and achieves groundwater protection standards.

It is strongly recommended to realize the land fill in the selected area, but reviewing the design according to the recommendations above. The land fill design and plan shall also include the design of the progressive filling of the land fill area, and a plan for its final recovery.

Tunnel excavation wastewater: the Contractor shall not release 2/3 of the water with high turbidity content directly into the Nam Ngiep River and the EMO shall monitor the implementation of such recommendation. The Contractor shall provide the chemical characteristics of the additive used in the plant, so that the EMO can understand if the “cake” can be disposed as an excavation waste or some special treatment is required. It will be also necessary to know if there are some residues of the additive used, which may affect the quality of the water released back to the river.

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.

7.2.9 Workers' Health Monitoring, Control of Sexually Transmitted Diseases

Occupational Health and Safety which used to be under SMO has been reassigned to the Technical Division. SMO will provide support on awareness raising, education and public campaigns on health and safety.

7.3 Accident Follow-up

SMO prepared two (2) corrective action plans for the latest accidents occurred:

- CAP for the fatal accident of the supplier's dump truck (see Annex 3)
- CAP for the accident at the diversion tunnel (see Annex 4)



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.

Activities related to biodiversity offset have been reported as follows in the presentation made by the EMO team during the initial meeting:

- The updated BOF (Biodiversity Offset Framework) was discussed at central level on 4 March 2015 and endorsed MONRE on 12 March 2015. The final updated BOF was submitted to ADB on 13 March 2015. The action plan included in the above document is shown in the Table 8-1.
- The updated BOF sets new milestone for biodiversity and watershed program.
- Referring to the Biodiversity Baseline Survey the following activities are reported:
 - survey design has been prepared by ERM (the Consultant) in consultation with NNPIPC and ADB,
 - several discussions/workshops were made for the detailed plan, expected TOR for biodiversity baseline survey and report development,
 - the consultant is on board since April 2015 and the actual field works is supposed to commence in May 2015 (starting from village interview and camera trapping installation).
- Offset site selection will be made only once the offset needs and residual impact assessment will be completed through the Biodiversity Baseline Survey. The Biodiversity Offset Management Plan will be developed once the offset site is identified.
- The Biodiversity Advisory Committee (BAC) will be established to provide technical advice for the biodiversity offset and management program. Offset management committee (BOMC) will also be established to prepare and implement the Biodiversity Offset Management Plan. Currently NNPIPC is defining the contract with the BAC members (2 international and 1 local experts).



Table 8-1 Biodiversity Offset Action Plan

No.	Task	Start	End
1	Survey and Biodiversity Offset Needs Assessment		
1.1	Rapid survey for Spatial Condition	Mar-15	July-15
a	Recruitment of consultant for the Survey	Mar-15	Mar-15
b	Survey	Apr-15	July-15
1.2	Species survey	Mar-15	Mar-16
a	Recruitment of consultant for the survey	Mar-15	Mar-15
b	Survey	Apr-15	Mar-16
1.3	Residual impacts study	Mar-15	Sep-15
a	Recruitment of consultant for the survey	Mar-15	Mar-15
b	Survey	Apr-15	Sep-15
c	Consensus building on residual impacts and offset needs followed by workshops* on residual impact and offset needs assessment	Aug-15	Aug-15
1.4	Watershed study	Mar-15	Mar-16
a	Recruitment of consultant for the watershed study	Mar-15	Mar-15
b	Study	Mar-15	Mar-16
2	Development and implementation of NNP1 Watershed Management Plan		
a	Consultant recruitment	Mar-15	Mar-15
b	Planning	Mar-15	Mar-16
c	Implementation	Mar-16	
3	Development and implementation of the Biodiversity Management Sub-Plan of the NNP1 Watershed Management Plan		
a	Consultant recruitment	Mar-15	Mar-15
b	Planning	Mar-15	Mar-16
c	Implementation	Apr-16	
4	Offset site selection	Jul-15	Sep-15
5	Development and Implementation of the Biodiversity Offset Management Plan		
a	Consultant recruitment	Jul-15	Jul-15
b	Planning	Sep-15	Jun-16
c	Workshop	May-16	May-16
d	Implementation	Jul-16	

The LTA has received confirmation that NNP1PC is following the time schedule foreseen in the Action Plan, with the primary target to select the offset site toward July-August 2015.

8.1.2 LTA's Recommendations

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

- biodiversity survey shall identify and define the remaining biodiversity values within the watershed;
- parallel options on potential offsets areas outside the watershed (in Xaysomboun or Bolikhamxay provinces) should be explored as well;



- the survey and Biodiversity Advisory Committee shall be mobilized as soon as possible.

As much as possible, the areas to be selected for the biodiversity offset shall be of:

- High Biodiversity Value (according to expert opinion, KBAs, IBAs, conservation plans Lao PDR);
- Viable and Effective Management Unit (size, manageability, no overlap development);
- Sustainable (GoL, PONRE & community commitment, leverage other support);
- within Bolikhamxay and/or Xaysomboun provinces.

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 NNP1PC supported management program, the identification of issues and the proposed management activities.

According to information received during the visit, Watershed Management Plan will be prepared by a single team consisting of an NNP1PC recruited consulting team and a MONRE appointed consultant starting in June 2015 and to be completed in December 2015 (see Table 8-2).

Table 8-2 Milestones for the activity in 2015 towards formulation of NNP1 WMP

Time frame	Key milestones
March - April 2015	<ul style="list-style-type: none"> • Consultant mobilization for study and planning
May 2015	<ul style="list-style-type: none"> • Progress on watershed study (initial findings, concept notes, recommendation for analysis)
June 2015	<ul style="list-style-type: none"> • Status of community land use planning
July 2015	<ul style="list-style-type: none"> • Result sharing on watershed study with related stakeholders • Progress update on planning process of NNP1 WMP incorporating watershed study findings for option development
August 2015	<ul style="list-style-type: none"> • Incorporating the consensus from biodiversity assessment • Initial draft report on watershed study
October 2015	<ul style="list-style-type: none"> • Result sharing on watershed study incorporating the socio economic baseline information • Progress update on planning process of NNP1 WMP incorporating the result of community land use planning
November 2015	<ul style="list-style-type: none"> • Conclusion, recommendation and final reporting for watershed study • Consultation on progress and initial draft of NNP1 WMP
December 2015	<ul style="list-style-type: none"> • First draft of NNP1 WMP followed by series of workshops and discussion with relevant stakeholders



Time frame	Key milestones
January - February 2016	<ul style="list-style-type: none"> Draft NNP1 WMP incorporating overall management plans, Biodiversity Management Sub-plan (BMSP), and consultation to get consensus and endorsement from GOL
March 2016	<ul style="list-style-type: none"> Approved NNP1 WMP and satisfactory acceptance under Project obligations
April 2016	<ul style="list-style-type: none"> Start the implementation of NNP1 WMP and BSMP

8.2.2 LTA's Recommendations

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: 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:

- recruit the Watershed Management team as soon as possible;
- reduce, simplify and integrate the sub-plans and the consultancies;
- include the inputs from the Integrated Spatial Planning of the Xaysomboun Province, expected to be completed by January 2016;
- include the inputs from the Biodiversity surveys, to be completed by August 2015;
- prioritize the activities in Watershed Action Plan against PONRE/WMO capacity;
- avoid duplications and clearly identify roles and responsibilities;
- focus priorities e.g. monitoring illegal logging, protecting forest

8.3 Houaysoup Resettlement Area – Environmental Issues

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

1. residential and agricultural land in 1750 ha already allocated to the Project (already cleared);
2. extended residential and agricultural land in 648 ha (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 3,715 ha in the PFA, which shall be usable by the PAPs.

Following MoNRE's suggestion, the areas described in point [2] should be excluded from the PFA and converted to agricultural and residential land and degazetted for the use by PAPs of the Project.

Meanwhile, as stated by MoNRE, 3,715 ha of forest shall remain within the PFA, with the possibility for the PAPs of Houaysoup to use it for different purposes as outlined above, with a focus on NTFP, grazing, cultural practices and other purposes. Degazetting is therefore not feasible and not any longer envisaged for this area. As an alternative to ensure tenure security in compliance with the requirement of Project standards (including ADB's SPS), the area shall be integrated and subsumed under the Project's Watershed Management Area, which allows via



administrative procedures to secure the controlled land use of the forest area for the PAPs of the new village of Houaysoup. GOL has indicated that it would allow the new village to utilize land and water resources within the PFA and this opportunity could in fact be extended beyond the original requested 6108 ha – the entire PFA could be utilized. There are current GOL forest programs that assist villages to improve forestry practices in Production Forest Area, without the necessity to change land classification.

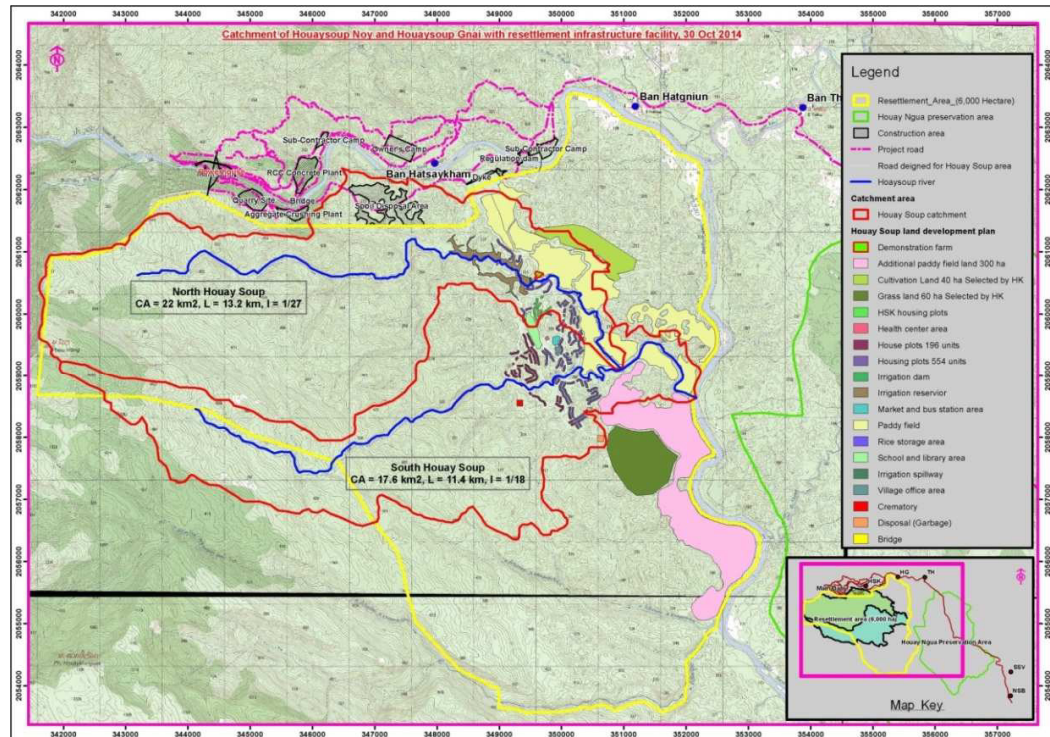


Figure 8-1 Houaysoup Area

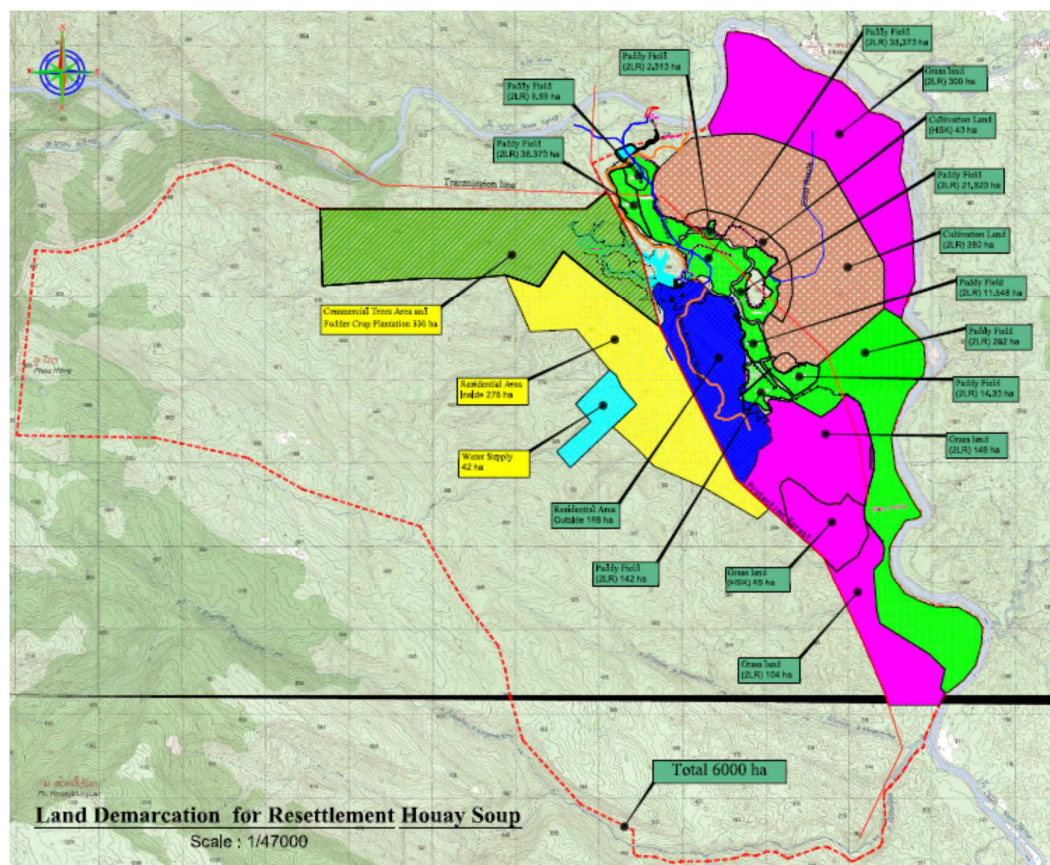


Figure 8-2 Land Demarcation for Resettlement of Houaysoup

8.3.1 LTA's Recommendations

The EMO and SMO shall consider the outcome of the revised IEE and of the Houaysoup Integrated Natural Resources Management Plan (INRMP). The EMO and SMO should work together to define how much of this land is required for resettled families and to identify appropriate activities within the area made available for resettlement site and agricultural land development, including watershed management, sustainable forest management, NTFP collection and agroforestry.

8.4 Other Environmental Issues

8.4.1 230 kV Transmission Line

The Department of Forest Resources Management (DFRM) officially confirmed on 27 February 2015 that DFRM authorized the proposed 230 kV transmission line route in terms of the boundary of NBCA (See Figure 8-3) .

The transmission line has been re-aligned to minimise impact on a commercial eucalypt plantation, and the NN1PC has commissioned an investigation of the potential environmental and social impacts of this re-alignment in line with ADB Safeguard Policy (2009) requirements. (See Figure 8-4).

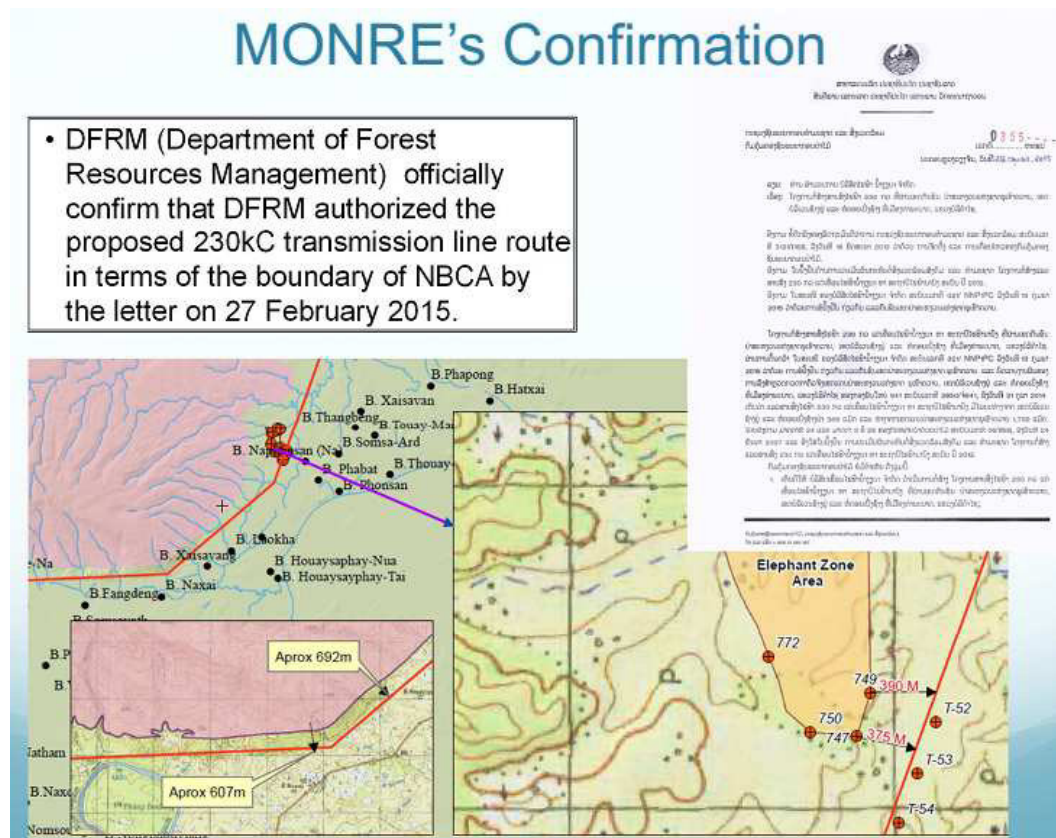


Figure 8-3 Approval of the Transmission Line Alignment

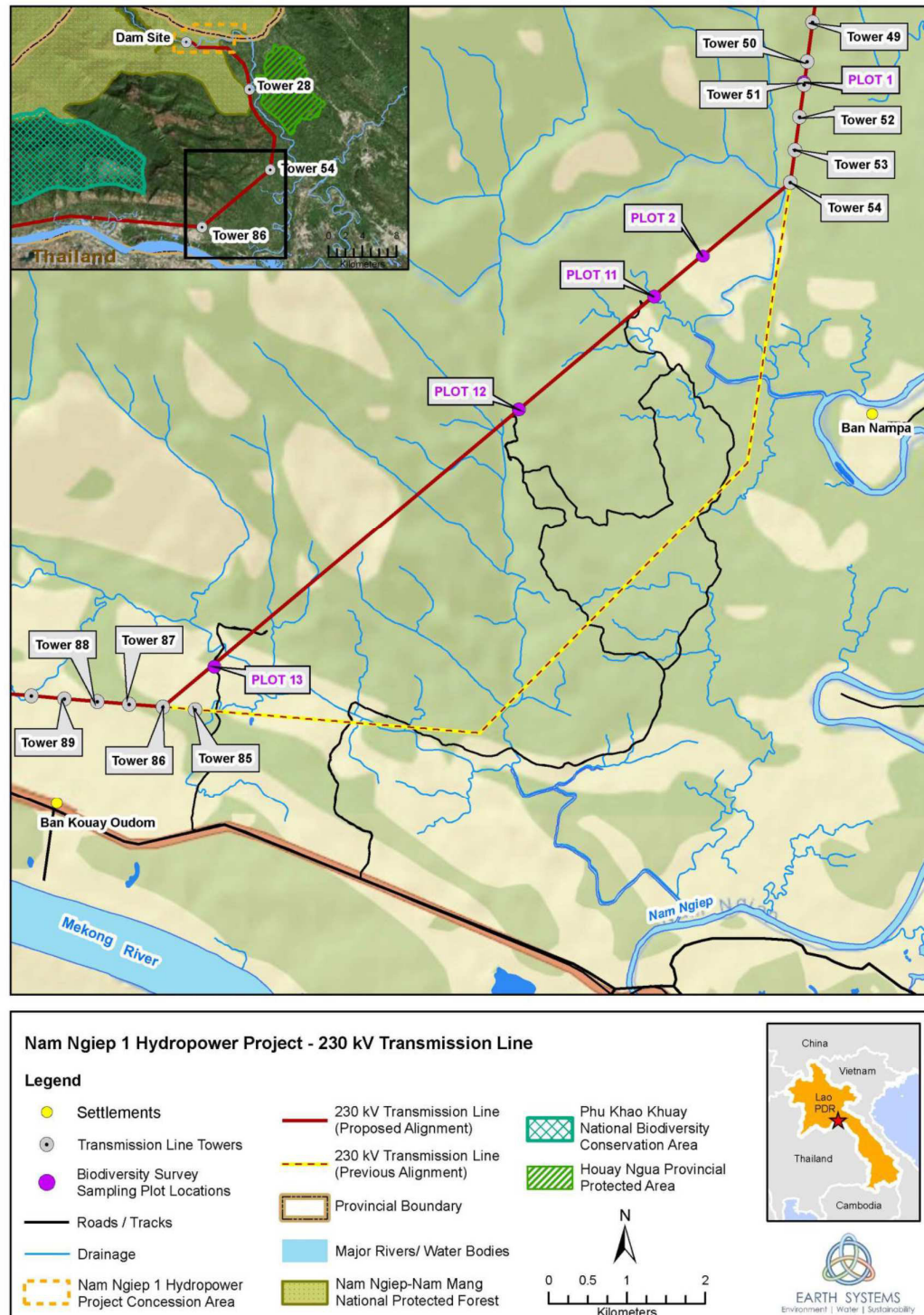


Figure 8-4 Line re-alignment

The findings of the investigation show that the line alignment finally approved:

- does not pass through any areas of very high biodiversity significance such as NBCA areas or Ramsar Wetland Sites;



- cause the loss of approximately 4 ha of natural habitat (not pristine and disturbed by human activity);
- cause the loss of approximately 68 ha of modified habitat;
- will unlikely cause significant impact on areas of critical habitat;
- may affect one globally threatened tree species;
- is not expected to affect globally threatened fauna.

8.4.2 Reservoirs Clearing

The preparation of a Biomass Removal Plan for Hydropower Project 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 Project, 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).

EMO has developed this plan based on the past experience learned in Nam Theun 2.

According to the schedule of the activities provided the following deadline are envisaged (see Table 8-3).

Table 8-3 Biomass removal schedule

Time frame	Key milestones
PHASE I (Preparation)	
April - July 2015	Approval of the Biomass Clearance Plan and recruitment of the Biomass Clearance team
April - August 2015	Procurement of field equipment
June - October 2015	Contracting progress for Biomass Clearance
PHASE II (Biomass Clearance)	
June-July 2015	Set- up main camping site
July - December 2015	Briefing and training of Biomass team
July 2015 – April 2018	Reconnaissance Survey & Boundary demarcation
October 2015 – July 2018	Cutting operation
February 2016 – September 2018	Burning operation
November 2015 – October 2018	Monitoring /assessment and monthly report
PHASE III (Floating Log/Debris Removal)	
March 2018 – April 2018	Working site preparation
May 2018 – June 2018	Working team orientation and training
June 2018 – December 2021	Field reconnaissance survey & planning
July 2018 – December 2021	Water operation
August 2018 – December 2021	Land operation
October 2018 – December 2021	Burning and dumping operation
November 2018 – December 2021	Field monitoring/assessment & monthly report



According to the table above, the Biomass Clearance Plan is expected to be approved by July 2015. The contract for the biomass clearing is expected to be in place by October 2015, which in the LTA opinion is consistent with the project construction / commissioning schedule and should not cause delays in the commercial operation.

8.4.3 LTA's Comments

As far as the Transmission Line is concerned, problems mentioned in the previous LTA Quarterly Implementation Progress Report - Environmental & Social Aspects, are now solved.

Referring to the Biomass clearing, the plan look well-structured and rationally organized and the EMO has the experience of the similar activities carried out in Nam Theun 2. We would only recommend to have the cutting and burning operation of Phase II completed some 2-3 months earlier, to have all work in the reservoir completed before the planned date for the starting of the reservoir filling.

Another positive point is the fact that NNP1PC intends to re-use the removed biomass for biochar⁵ to improve soil fertility in the resettlement site (particularly in Houaysoup). This is a very good solution and opportunity to reuse the biomass and to reduce/avoid the use of chemical fertilizers.

⁵ 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 under NNP1PC Responsibility

9.1 Status of Activities

- The Social Management Action Plan is being implemented. Activities addressing construction related issues include:
 - Education of construction workers on protection against the spread of sexually transmitted diseases and HIV / AIDS
 - Public campaigns in the communities on health and prevention on the spread of diseases
 - Free distribution of condoms by sub-contractors to minimize / prevent STDs
- Establishment of a Police Station at Ban Hat Gniun for drug and crime control and to maintain peace and order in the project area. The District of Bolikhan provided the police force.
- The Scholarship Program Manual is being finalized and this has been discussed with the RMU and with the Department of Education at the province and district levels. Twenty-one (21) persons will be provided with scholarships which is planned to be financed after the Lao New Year.
- Assistance to Vulnerable Households: the program is in place; assistance to a vulnerable household member was provided by the Project through the Health Team (follow-up of a surgery operation in Vientiane).
- Data collection on female-headed households located along the transmission line has started. The SMO Gender and Ethnicity team has also started gathering gender-related data on several community activities. This is the same team that had prepared the two corrective action plans for the fatal dump truck accident and the sexual assault case. The sex-offender has been caught and is now with the police of Bolikhan district.

9.2 PAP Resettlement

- 2UR: NNP1PC has hired a Deputy Manager for Resettlement and Livelihood for 2UR. He is a Lao specialist. He will work in 2UR together with other SMO staff. A project office for this area will be established in the next quarter (Q3 2015).
- Assessment of resettlement alternate sites. PRLRC organized the investigation of the alternative resettlement sites suggested by the PAPs of 2LR. The findings showed that these are not feasible alternative sites and might cause more problems that they can solve: to the LTA's understanding, none of the alternative sites could accommodate all PAPs to be resettled, and developing multiple resettlement sites will increase infrastructure construction difficulties and costs. PAPs need to decide based on the two choices offered in the entitlement matrix as presented in the REDP and Annex C: to be resettled in Houaysoup Resettlement Area or to self-resettle. Self-resettlement would mean that the PAPs will be paid in full for all their losses. The timing of the conduct of the Indicative Choice Surveys for all zones were discussed and it was agreed that it should be done after the asset registration for each zone. This will allow NNP1PC to show two packages to the PAPs: the Houaysoup package and the



self-resettlement package. It was explained to 2LR PAPs during the village meetings that PAPs who have numerous structures or large parcels of land may still get about 70 to 80% of the cash compensation even if they still choose to resettle to Houaysoup.

- The choice of where to resettle will be the PAPs own responsibility, not of the project. However, NNP1PC should be reminded about the criteria for self-resettlement and NNP1PC's responsibility for those resettling in the project impact area as stated in the REDP and the Annex C of the CA.
- Livelihood activities such as vegetable gardens, mushroom culture, catfish raising, and poultry raising have started in Ban Hat Gniun and Ban Hatsaykham.
- Topographic survey, detailed design for the replacement houses and UXO clearing underwater in preparation for the bridge construction are nearly completed. Bidding processes for detailed designs for roads, transmission line, water supply, waste disposal as well as the irrigation system could be completed within the 2nd quarter of 2015.

9.2.1 Critical Issues - Resettlement

Critical issues are:

- Issuance of the cut-off-date and compensation unit rates. Without the approval and the public issuance of these, resettlement activities cannot proceed.
- The preparation, submission and approval of the revised IEE, the REDP sub-plan for Zones 3 and 5 which would trigger the start of land acquisition, land preparation and replacement house construction for the resettlement of Hatsaykham in the Houaysoup resettlement area in February 2016.
- The REDP sub-plan for 2LR is also critical and needs to be prepared based on 100% asset registration and result of the indicative choice survey.
- SMO has conducted training on Grievance procedures to Grievance Committees at the village and district levels. A project level grievance mechanism manual needs to be prepared especially to guide district and village committees in Xaysomboun Province.

9.3 Other Social Programs

- Programs are in place for monitoring of / training and assisting on health and safety issues for the villages impacted by the construction activities.
- Data monitoring on health and socio-economic activities have been conducted. NNP1PC social experts are presently analysing the information gathered. The resignation of the DM for Social Development and Monitoring may create difficulties in the implementation of the global Public Health Action Plan.
- Another critical issue is the non-compliance to IFC Performance Standard 2 Labor and Working Condition as observed during the LTA January 2015 mission and this IAP-ADB-LTA mission, the inadequate medical facilities, medicines and professional staff in the construction site and labour camps to respond immediately to construction accidents and other unforeseen critical medical situation. The Contractor has been very slow responding to this non-compliance.



10 Environmental & Social Budget Monitoring

10.1 Total Budget, First 2015 Quarter Expenditures

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

The expenditures in the first 2015 quarter were 2.14 million USD, versus a budget for the first quarter of about 4.1 million USD and a total 2015 budget of 20.11 million USD, as indicated in the Figure 10-1. The difference between budget and actual expenditures for the first quarter is mainly due to the delays in the issuance of the cut-off-date and compensation unit rates, which in turn are delaying the development of the resettlement and compensation activities.

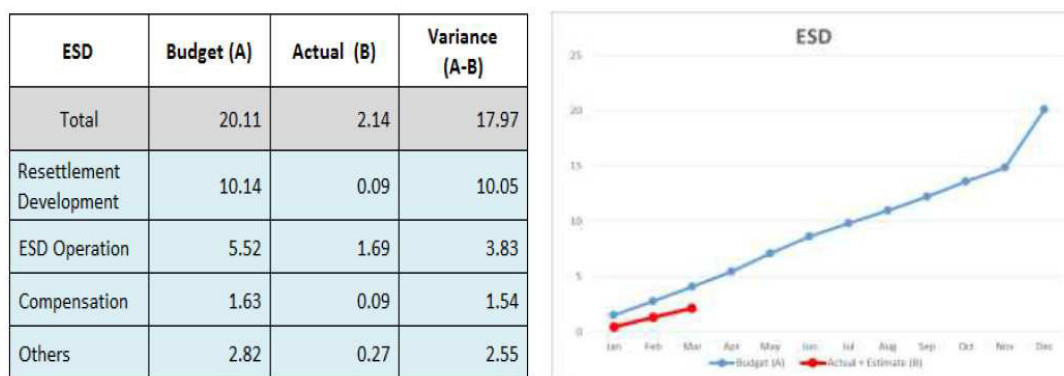


Figure 10-1 2015 First Quarter E&S Expenditures versus Budget

10.2 2015 Annual Budget

The breakdown of the 2015 E&S budget according to the approved 2015 yearly budget is shown in the Table 10-1.

Table 10-1 2015 E&S Budget

	Items	Amount (\$)
1	Resettlement	10,140,000
2	ESD, EMU, PRMLCRC, RMU	5,520,000
3	Compensation	1,630,000
4	Environmental Management	1,070,000
5	Environmental Funds	730,000
6	Livelihood restoration	310,000
7	Other costs	710,000
	TOTAL ESD	20,110,000

If this budget is maintained and actually used, the total spent on environmental and social matters up to the end of 2015 would be about 61% of the total budget, which could be deemed reasonable, considering that more than 50% is allocated to resettlement.



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

Photographs



Waste water wetland filtration treatment system in TCM camp.



The old waste water treatment pool in the TCM camp, to be rehabilitated



The fuel tank in the TCM camp



The dormitories in the TCM Camp.



Preparing the waste water wetland filtration treatment system in the SongDa camp.



Waste water pond of the Right Tunnelling Camp



The fuel tank in the Right Tunnelling (RT) Camp



De-oiling pond in the RT Camp workshop



Flowers and vegetables irrigated with the wastewater from the holding tank in Sino-Hydro camp



The temporary waste disposal area near the TCM camp, now cleaned –up and fenced



The waste disposal area under preparation (more or less as it was three months ago)



Waste water treatment plant of the water coming out from the tunnel excavation



The sludge coming out from the plant (the “cake”)



Slope stability on the left bank near the dam axis:
general view



Slope stability on the left bank near the dam axis:
detail



The soil disposal area (picture taken from the landfill)



Quarry



Annex 3

Corrective Action Plan – Fatal Accident of Supplier’s Dump Truck

Corrective Action Plan – Fatal Accident of Supplier’s Dump Truck

Document Number: CAP_NNP1_**
Date: **/01/2015
Providing Unit: NNP1
Recipient: ADB / PSOD

Gaps/ Issues Identified	Proposed Corrective Action Plan	Target Schedule of Implementation in 2014	Responsible Unit	Budget	Remark
<p>a) Safety Management</p> <ul style="list-style-type: none"> Appropriate personal protective equipment (PPE) were not worn. Truck whose maintenance condition had been unknown entered project site. No waiting zone and flagmen were placed. <p>[Facts]</p> <ul style="list-style-type: none"> The driver did not have sheet belt, helmet and adequate shoes on. No brake marks were found on the slope. Gear position was 3rd (higher) at time of incident. 	<p>1. Analyze root causes and prepare countermeasures</p> <p>[Root Causes]</p> <ul style="list-style-type: none"> Lack of knowledge and safety awareness of workers. Difficulty to check and control maintenance situation of suppliers' vehicles. Safety management activities of Contractor/Sub-Contractor for suppliers were not sufficient. <p>2. Hold EHS Committee Meeting among contractor, sub-contractor and NNPI</p> <ul style="list-style-type: none"> All of main construction works were suspended on 3 January 2015 and safety meeting was held among Contractor and all of sub-contractors to inform the accident and discuss corrective action plan. Reported to NNPI. 	<p>1. 3 January 2015</p> <p>2. 3 January 2015</p>	<p>1. Contractor / Sub-contractor / NNPIPC</p> <p>2. Contractor / Sub-contractor / NNPIPC</p>	n/a	<p>1. Report provided to ADB on 2 January 2015</p> <p>2. Upgraded version of report provided to ADB on 2 January 2015; Owner's assessment and report to be</p>

Gaps/ Issues Identified	Proposed Corrective Action Plan	Target Schedule of Implementation in 2014	Responsible Unit	Budget	Remark
	<p>3. Improve safety management activities for suppliers</p> <ul style="list-style-type: none"> - Confirm the following items for each supplier through sub-contractors. <ul style="list-style-type: none"> • Possession of the driver's license • Driver's experience • Vehicle number and age • Condition of maintenance and inspection - Give notice of the following items for each supplier through sub-contractors. <ul style="list-style-type: none"> • To wear seat belt, adequate PPE and shoes for driving. • Driving rule in the construction site. • To prohibit overloading. <p>4. Strengthen safety management for all CWC works by NNP1PC and Contractor</p> <ul style="list-style-type: none"> - Installation of security gates: <ul style="list-style-type: none"> • to check all vehicles related to construction works including driver's name, driving permit, sticker number, ID card, vehicle registration number and driver experience, vehicle condition, health condition, PPE (helmet, boots, safety belt); and 	<p>3.</p> <p>Implement continuously starting immediately (6 January 2015)</p> <p>4.</p> <p>Implement continuously starting immediately (6 January 2015)</p>	<p>3.</p> <p>Contractor / Sub-contractor</p> <p>4.</p> <p>NNP1PC /Contractor</p>		<p>provided by 30 January 2015</p> <p>3.</p> <p>4.</p>

Gaps/ Issues Identified	Proposed Corrective Action Plan	Target Schedule of Implementation in 2014	Responsible Unit	Budget	Remark
	<ul style="list-style-type: none"> to inform villagers/outside to keep out of the construction area. - Reinforcement of safety team of Contractor, Subcontractors and NNPI. - Enhancement of KY activities to predict the expected dangers at the site in advance. <p>[Note: 'KY' stands for Kiken (danger) Yochi (prediction) in Japanese]</p>				
b) Compensation of the family of the deceased in accordance with the Lao Labour Law	<p>5. Entitlements provided to the victim in accordance with national regulations and international standards as well as Project policy. The Project shall provide, if not covered by SSO (Social Safety Organization):</p> <ul style="list-style-type: none"> a. Payment in accordance with the Lao Labour Law and related regulations of 50% of the average 12-month insured earnings for the wife and 15% for each child b. Death benefit will be provided with the purpose to organise the traditional funeral ceremony for deceased employees, equal to 6 months of his insured earnings. 	5. Financial compensation to be provided by 28 February 2015;	5. Sub-contractor with follow-up by NNPIPC	3,900USD (TBC)- compensates both item a & b.	Have any payments already been made and if so, is there proper documentation?

Gaps/ Issues Identified	Proposed Corrective Action Plan	Target Schedule of Implementation in 2014	Responsible Unit	Budget	Remark
c) Addressing the vulnerability of the family of the deceased in accordance with the Project's Safeguard Regulations (to keep every impacted household above the poverty line)	<p>6. In addition to the above compensation, the vulnerability of the family will be addressed by:</p> <p>a. EITHER the offer of employment for an increased salary by the supplier for the wife of the deceased plus accommodation in Pakxan and food provisions for the family as well as school fees for the children</p> <p>b. OR a monthly allowance of 100USD based on the national poverty line (3 household members) for the following 5 years to be transferred monthly onto a bank account, with opening costs borne by the Project in case the family would like to return to their original village (in Khamkheut District outside the Project Area of Influence) and stay there with the wife's parents.</p> <p>The Project will contact the Family for monitoring purposes every 3 months in the first year and every 6 months in the last 4 years. Following 5 years, a re-assessment of the households' vulnerability will be conducted by the Project and if necessary additional measures implemented.</p>	6. Solution to be implemented latest by 28 February 2015	<p>6. Sub-contractor with follow-up by NNP1PC</p> <p>Monthly allowance proposed is a project (NNP1/OC) expense as addresses the aspect of vulnerability as provided in the social safeguards requirements of the ADB</p>	<p>(a) A figure of approx. 14,100\$ incl. salary (7,500\$) and equivalent of food, accommodation and school fees in kind (~6,600\$)</p> <p>OR</p> <p>6,000USD in allowances if option [b] is chosen (with the option of additional income through independent employment)</p>	<p>Decision outstanding as the family needs time to re-organize their situation.</p> <p>Requirement of a contract should option a be taken to ensure that basic requirements are followed</p>



Annex 4

Corrective Action Plan – Accident of Diversion Tunnel

Corrective Action Plan – Accident of Diversion Tunnel

Document Number: CAP_NNP1_005
Date: 26/02/2015
Providing Unit: NNP1
Recipient: ADB / PSOD

Gaps/ Issues Identified	Proposed Corrective Action Plan	Target Schedule of Implementation in 2015	Responsible Unit	Budget	Remark
<p>a) Safety Management</p> <ul style="list-style-type: none"> Thickness of shotcrete was not sufficient. Adhesion of shotcrete to the rock surface was poor. <p>[Facts]</p> <ul style="list-style-type: none"> Partially thickness of shotcrete placed on crown of the tunnel was not sufficient. Adhesion of shotcrete to the rock surface was poor due to low quality of rock mass. 	<p>1. Analyze root causes and prepare countermeasures</p> <p>[Root Causes]</p> <ul style="list-style-type: none"> Measurement of thickness during/after shotcrete placement was not sufficient. No wire mesh was installed. Monitoring and observation of surface of shotcrete was not sufficient. <p>2. Hold EHS Committee Meeting among contractor, sub-contractor and NNPI</p> <ul style="list-style-type: none"> Tunneling works were suspended from 6 February to 11 February and intensive inspection was carried out on existing shotcrete surface (visual observation and hammering test). Remedial works was also implemented based on inspection results. CAP was established through discussion b/w Contractor and NNPIPC on 8 February. 	<p>1. 11 January 2015</p> <p>2. 12 January 2015</p>	<p>1. Contractor / Sub-contractor / NNPIPC</p> <p>2. Contractor / Sub-contractor / NNPIPC</p>	n/a	<p>1. Report provided to ADB on 7 February 2015</p> <p>2. Upgraded version of report provided to ADB on 7 February.</p>

Gaps/ Issues Identified	Proposed Corrective Action Plan	Target Schedule of Implementation in 2015	Responsible Unit	Budget	Remark
	<ul style="list-style-type: none"> - On 12 February, CAP was enforced b/w Subcontractor and Contractor's engineer. <p>3. Strengthen safety management for all CWC works by Subcontractor and Contractor</p> <ul style="list-style-type: none"> - Enhanced monitoring of thickness of shotcrete layer. <ul style="list-style-type: none"> • During shotcreting, thickness guide to be installed on the surface of first layer of shotcrete as much as possible. • After shotcreting, thickness of shotcrete was measured by drilling inspection holes every 10m driving. • Wire mesh to be installed as much as possible based on geological condition. - Crack observation on existing shotcrete surface to be carried out and recorded. 	<p>3.</p> <p>Implement continuously starting immediately (6 January 2015)</p>	<p>3.</p> <p>Contractor / Sub-contractor</p>		<p>3.</p>

Gaps/ Issues Identified	Proposed Corrective Action Plan	Target Schedule of Implementation in 2015	Responsible Unit	Budget	Remark
b) Support of the injured employee	<p>4. Provide medical services to assess and treat injuries</p> <p>5. Entitlements provided to the victim in accordance with national regulations and international standards as well as Project policy. The contractor will, if not covered by SSO (Social Safety Organization):</p> <ol style="list-style-type: none"> Continue payment of wages during the period of rehabilitation Pay all medical bills including rehabilitation Compensation in case of any long-term consequences of the injury Follow up on the worker's rehabilitation within 3 months and if necessary support professional reintegration into the labour market if return to NNP1 is not possible (e.g. coverage of expenses of a disability training center activity) 	<ul style="list-style-type: none"> Immediate expenses to be provided immediately to the victim to guarantee optimal treatment Middle-term entitlements to be provided over the next 6 months (i.e. before July 2015) 	Sub-contractor with follow-up by NNP1PC	To be determined depending on medical condition.	Information to be integrated into the Quarterly Reports