

NORTHERN RURAL INFRASTRUCTURE DEVELOPMENT SECTOR PROJECT- ADDITIONAL FINANCING



SECOND SAFEGUARDS MONITORING FOR JULY-DECEMBER 2018

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List of Abbreviation

ADB	Asian Development Bank
AH	Affected Household
CAP	Corrective Action Plan
BOD	Biological Oxygen Demand
CEMR	Contractor's Environmental Management Report
COD	Chemical Oxygen Demand
DAFO	District Agriculture and Forestry Office
DCO	District Coordination Office
DO	Dissolved Oxygen
DOPF	Department of Planning and Finance
DONRE	District Office for Natural Resources and Environment
EA	Executing Agency
EGDP	Ethnic Group Development Plan
EIA	Environmental Impact Assessment
EMO	Environmental Management Office
EMP	Environmental Management Plan
FS	Feasibility Study
ESM	External Safeguards Monitor
GAP	Gender Action Plan
GIC	Grant Implementation Consultant
GRM	Grievance Redress Mechanism
HH	Household
IEE	Initial Environmental Examination
IPP	Indigenous Peoples Plan
LACR	Land Acquisition and Compensation Report
MONRE	Ministry of Natural Resources and Environment
NPMO	National Project Management Office
PAFO	Provincial Agriculture Forestry Office
PONRE	Provincial Office of Natural Resources and Environment
PPO	Provincial Project Office
PRI	Productive Rural Infrastructure
SC	Secondary Canal
TDS	Total Dissolved Solids

Executive Summary

A. Introduction

In compliance with the ADB environmental and social safeguards and relevant Lao regulatory frameworks, implementation of the safeguards and requirements, such as the Environmental Management Plans (EMPs), Ethnic Group Development Plans (EGDPs), Land Acquisition and Compensation reports (LACRs), and Gender Action Plans (GAPs) for the Project, is required. In this regard, an independent safeguards monitoring team is required and tasked to monitor and evaluate the implementation of the environmental and social safeguards and compliance.

This report presents findings of the second safeguards monitoring and evaluation mission conducted from 16-21 December 2018 when the construction work of the Nam Beng subproject completed while it was about 80% for the Nam Oun subproject.

The purpose of this mission is to monitor and appraise progress of the EMPs, EGDPs, GAPs, LACRs, and the recommendations given in the first mission report for 2 subprojects in Beng and Houn districts of Oudomxay province. In addition to monitoring of these plans, water analysis of basic parameters was conducted in this mission regardless agrochemical parameters because agrochemical and demonstrations were already conducted in the first mission for the subprojects.

The mission was participated by the representatives from PPO, DCOs, PONRE, DONREs, village authorities, villagers, site engineers of the Contractor for the Nam Oun subproject, and a representative of Phanthamit Lab and Analysis. Com., Ltd for water quality sampling and analysis.

At the end of this mission, a meeting for feedback session was undertaken with the PPO at its office to discuss key findings from the monitoring, and viable mitigation measures to improve current implementation of the EMPs, EGDPs, GAPs and LACRs for the subprojects.

The scope of this safeguards monitoring focuses on progresses made by the project between July and December 2018. In terms of content, this report covers both environmental (such as: water quality, waste management on site, erosion and sediment transport, terrestrial and aquatic resources, dust, and noise nuisance) and social dimensions (such as: gender equality, inclusion of ethnic minority groups; local employment, and land acquisition and compensation).

The environmental and social safeguards for the subprojects were prepared as parts of the main FS reports (October 2015) with their subsequent updated land acquisition and

compensation reports - LACRs (December 2017). These FS reports include environmental management plans (EMPs) and social safeguards management plans (EGDPs, EGPs, GAPs, and LACRs). They were submitted to the Provincial Office for Natural Resources and Environment (PONRE) for review and approval before commencement of construction works for the subprojects. Key findings from the second safeguards monitoring are discussed in two separate thematic topics as follows. In addition, as a reaction on the discrepancies noted by the ADB, external safeguards monitor (ESM) and GIC in June/July 2018 between land requirements (detailed design) and the actual land requirements (construction phase) a Corrective Action Plan (CAP) was prepared in the monitoring period and then submitted in December 2018.

B. Environmental compliance

The project has continuously improved its performance of environmental compliance to the ADB safeguards policies and Lao applicable regulations. The obvious and crucial improvements noted during the second monitoring are public consultation workshop and translation of the IEE report into Lao language for the Nam Hao subproject. Likewise, the project has complied several environmental compliance indicators. Inevitably, there remains some minor environmental concerns were reported and observed during the second monitoring of 2018. Key compliance and non-compliance items are summarized below.

Unlike the first safeguards monitoring, there was no joint internal environmental monitoring conducted by PPO, DCOs, PONRE, DONREs in the second half of 2018 to monitor EMPs implementation. This is, reportedly, due to limited fund and wet-season closure of construction activities on the ground for the Nam Oun subproject between July and November. In this regard, the ESM and PPO recommended the PONRE developing the plan that match the monitoring program of the PPOs and DCOs, instead of PONRE's independent monitoring and financial demand. The ESM team also recommended the PPO of an alternative way to engage a representative of the PONRE in safeguards monitoring in quarterly basis together with the PPO during its normal field visits. This may reduce cost and be more practicable.

As discussed in the first safeguard monitoring, the Project provided environmental-friendly structures to facilitate fish passage at each sub-scheme. However, the proper regulation of the sub-schemes is required to ensure effective use of the fish ladders during the dry season. The monitoring team found at the Nam Oun sub-scheme where water flows through a stop-log sluice gate which is less viable for fish to pass, but no flow through the provided ladder. Unlike the Nam Oun sub-scheme, a good example of regulation was observed at the Nam Beng 1 sub-scheme where water flow through the

scouring sluice gate which can be an alternative way for fish passage though no water passes the ladder.

In addition, attention to the regulation of the Houay Lor sub-scheme needs to be paid because it was found that some water was diverted into private fishponds nearby the weir structure, in addition to water use for dry-season cropping in the command areas. Such diversion would disrupt the water use of beneficiary and decrease downstream flow for environment during the dry season. Nevertheless, the decrease of environmental flow would occur at short distance between the weir and location of fishponds because the overflow water from fish ponds was seen draining back to the Houay Lor. Therefore, the impact of water diversion would be insignificant. The environmental flow is not concerned for other sub-schemes which are larger streams with more flows that can maintain good environmental flow at downstream.

Erosion was obviously found only at the Nam Met sub-scheme while sedimentation was observed at all sub-schemes. The sediment expects to originate mostly from non-project related activities such as agricultural production at upstream of the sub-scheme catchment areas and this could reduce the smooth intake of water.

As required for environmental quality monitoring, water sampling and analysis for basic parameters were conducted to compare with the baseline data collected during the first mission in June 2018. Total 8 water samples were collected at upstream and downstream of 4 sub-schemes for analysis. The analysis results of the designated parameters show that no any parameters exceed the Lao National Standard. It is noted that the values of fecal coliform for NO1 and NO2 is found better in the second mission 490 and 3,500 MPN/100mL respectively compared to the results recorded in June 2018 of 35,000 and 22,000 mg/L which exceed national standard (22,000 MPN/100mL).

Based on the site visit and the contractor's environmental management report (CEMR), the monitoring team found that occupational health and safety compliance was more satisfactory than observed during the first safeguards monitoring. Nevertheless, improvement should extend to subcontractors' employees rather than the contractor's personnel only. Besides, health, safety, and environment sign posts should be erected on construction sites and worker's camps.

C. Social compliance

This report covers social safeguard issues, especially land use impacts induced by the subproject activities and grievance redress mechanism, for both Nam Beng and Nam Oun subprojects although the Nam Beng subproject has been in operation since June 2018. It was found during the second mission that several pending social issues had raised in the first mission were addressed and updated, however, there are few potential options

for additional support measures to affected households. Key achievements and emerged issues for action are summarized as follows.

Number of previous additional affected households (AHs) was 54 (34 for SC2 and 17 for SC 4 of the Nam Oun subproject), in addition to 6 AHs with loss of 1,710 sqm. Based on the detailed investigation and resurvey by the GIC consultants, according to updated corrective action plan (CAP) for land acquisition and compensation, there are now 30 total AHs (15 for each SC 2 and SC 4 respectively). During the period from July to December 2018, more consultation of villagers and affected households (AHs) has been carried out. The contacted AHs and DCO/PPO could clarify the land requirements and the enquiries of the AHs. The affected land owners decided to voluntarily contribute their affected lands, because of the community interest to support the project and the higher yields and income they expect from the improved irrigation system.

However, the support options for AHs were discussed during the monitoring mission. There are support activities offered by the subproject such agricultural extension program, female-focused extension service activities, etc. All AHs are included in these measures. However, an additional support was discussed and agreed for 2 AHs in the Nam Maed sub-scheme, as the two AHs proposed the construction for shelters on their private farmland.

Some improvement in promoting gender equality in project implementation both at national and local levels. This was demonstrated by 53% (of 50% target) female participation in awareness raising of 6 thematic topics at project level. At the subproject level, the female representation to the awareness raising account for 41% and 58% for the subprojects of Nam Oun and Nam Beng respectively. Likewise, the proportion of female participants attended the consultation meetings during the second safeguard monitoring is slightly increased and achieving 30% target, compared to the first mission below 30%.

In the administrative and institutional structures, the women in the implementing agency at the central level cover 50% of total staff while at provincial level they represent 34% or 17 people of 50 PPO personnel of the 4 provinces. The implementing agency at district level is composed of 22 or 37% female staff out of total 60 persons. Similarly, the composition of women in the WUGs accounts for more than 30% of all members for each subproject of 2018. This is obvious that the project achieves many targets in terms of equal participation of genders in project implementation.

Moreover, the project has promoted more inclusive male and female participation in land entitlements for beneficiary households within command areas of the subprojects, which, in turn, promoting enforcement of laws, especially the Land Law in Laos.

To improve local employment mechanism, based on lesson learned from first safeguards monitoring, the contractor of the Nam Oun subproject reported that since its restart of work in November 2018, its site office sent formal request letters to the beneficiary villages for recruiting local laborers.

However, despite the formalize approach through public labor search letters there were only 5 local workers from Chantai village and no engagement of female employees in the subproject construction works. With several factors, such as better alternative jobs with better pays, low rate of daily wage paid by the contractor, and lack of skilled and unskilled labor force and limited position, it is likely difficult to hire local workers. Engagement of local female workers is even more difficult.

Unlike the Nam Beng subproject, there is a mix of various ethnic groups such as Phounoi, Phouan, Tai Kao, Hmong, and Khmu in the beneficiary communities of the Nam Oun subproject. Despite diversity of minority ethnicities, their participation remains likely inactive although their recent engagement in dry-season farming of cash crops was reported during the second safeguards. With this respect, the PPO and DCO should continue to encourage their active participation, especially in the consultations and meetings.

Chapter I: Introduction

1 Project background and safeguards requirements

1.1 Project background

The Northern Rural Infrastructure (NRI) Development Sector Project-Additional Funding (hereinafter called the “Project”) has been implemented in four (4) provinces of Bokeo, Luang Namtha, Phongsaly, and Oudomxay. The Project aims to address two fundamental constraints of low agricultural productivity and limited market access through investments in i) rural infrastructure for irrigation and rural access road, and ii) initiatives to achieve greater commercialization in agriculture by exploiting opportunities in the Lao PDR and neighbouring countries. The Project consists of 22 productive rural infrastructure (PRI) subprojects and rehabilitation of existing irrigation facilities and rural access road will be implemented. The Project aims to supply sufficient irrigation water for agricultural area with a target of 6,800 hectares and improve market accessibility with a target of 70 km of access road.

With the Bank’s requirement, in addition to the internal monitoring, the Project is required to engage an Independent External Safeguards Monitor (ESM), which is tasked to monitor all safeguards activities under the Project. The ESM will focus on appraisal of progress and compliance with the environmental management plans (EMPs), the ethnic group development reports (EGDPs), the gender action plans (GAPs), and land acquisition and compensation plans (LACRs). The overarching aim of the ESM is to identify constraints and develop remedial actions as well as mitigation measures to effectively address such constraints.

Based on the Project implementation schedule and ESM’s scope of work, the second safeguards monitoring was conducted for two subprojects in Oudomxay province, namely Nam Beng and Nam Oun in Beng and Houn districts respectively. The mission was carried out between 16 and 21 December 2018, with the participation of relevant local stakeholders, including, the Provincial Agriculture and Forestry Office (PAFO), District Agriculture and Forestry Office (DAFO), Provincial Office of Natural Resources and Environment (PONRE), and District Office of Natural Resources and Environment (DONRE). The mission aims to present the remedial actions undertaken by the PPO, DOCs, and the contractors for the recommendations given during the first mission in December 2018.

Findings for both environmental and social safeguards from this mission are incorporated into one report which is comprised of four main chapters, including chapters for separate environmental and social monitoring results. Chapter II demonstrates overall social and

environmental management. Chapter III highlights specific social safeguards and compliance, covering land acquisitions and compensation; equal participation and inclusion of genders and minority people in planning and decision making for subproject implementation; progress of mitigations for social impacts carried out by the PPO and DCOs; workers' occupational health and safety, and current social issues raised by the beneficiaries in each subproject of 2018. Chapter IV discusses implementation of the EMPs and compliance, particularly biophysical environment, environmental quality monitoring, general and hazardous waste management, erosion and sediment control, and etc.

1.2. Scope and purpose of the monitoring and report

The second monitoring of 2018 covered the phase I and its 2 subprojects. The scope of the ESM focuses on appraisal of implementation progress of environmental and social safeguards requirements (including the EGDPs, GAPs, LACRs, and EMPs) acted by local stakeholders in the subprojects between July and December 2018. From the findings of this mission, the ESM provided some viable mitigation measures for impacts that the PPO and DCOs need to address in conformity to the requirements. Specific scopes and purposes of the second mission are to:

- Review the FS reports of two subprojects regarding i) the EGDPs or IPPs, EMPs, GAPs, and the LACRs and ii) updates of implementation of such plans;
- Visit construction sites of the subprojects and evaluate implementation progress of environmental and social management plans in accordance with ADB's safeguards policy and as per recommendations provided in the first mission;
- Consult with relevant stakeholders e.g. PPOs, DCOs, beneficiary communities, and individuals who benefit from and are affected by the subprojects;
- Conduct water quality monitoring for general parameters; and
- Verify and confirm with the affected persons for their voluntary contribution of their land losses acquired for the subproject activities.

The purposes of this report are to:

- Present and reflect the facts concerning implementation of the environmental and social standards conformed by the project during the second safeguards monitoring of 2018;
- Present the mitigations and actions undertaken by the PPO, DCOs, and the construction contractors of the subprojects, as per the EMPs, EGDPs, GAPs, LACRs, and other requirements;
- Provide evidence of voluntary donation of land losses of the affected households for the subproject activities;

- Report the findings of current environment of water quality in the sub-scheme rivers; and
- Provide recommendations to the PPO, DCOs, and the Contractors for improvements based on the mitigation measures stated in the associated plans and requirements.

1.3. Methodologies and strategies for monitoring and appraisal

The approaches applied for the second safeguards monitoring are as follows.

- Review of FS reports; particularly the sections associated with environmental and social management plans of 2 subprojects. Amongst others, these include environmental mitigation plans, land acquisition and compensation, gender actions , ethnic minority groups, and vulnerable people.
- Review of the 2 Updated LACRs of the Phase I subprojects: Nam Oun and Nam Beng.
- Review of the Corrective Action Plan of the Phase I subprojects Nam Oun and Nam Beng.
- Preparation of monitoring and assessment plan as well as the draft contents for the safeguards monitoring report. This is to follow the scope of works outlined in the terms of reference; including the detailed field survey plan for the mission.
- Regular communication with GIC team for clarification and advice on the progress of project activities, updates of relevant plans and reports, changes of administrative arrangements.
- Consultations and meetings with project stakeholders at various levels e.g. PPO, DCOs, PONRE, DONRE, beneficiary commues, and the construction contractors
- Interviews of affected persons (APs), minority and female groups to hear and understand their perceptions through verbal communication and prepared forms.
- Visits and observations at construction sites to note biophysical environments, which were attended by the representatives from PPOs, DCOs, PONRE, and DONREs. During the site visit, the environmental and social monitoring checklists were used to record the findings.
- Collection of water samples from two subprojects for lab analysis to monitor water quality change in the subproject rivers.

- Meeting with a contractors' representatives to discuss on the health, safety, environmental, and social issues on sites.
- Meeting with the PPO of Oudomxay province for feedback regarding findings from the mission and proposed remedial actions for pending issues.

1.4. Construction progress of subprojects

The Nam Beng subproject was fully completed at the time of the first safeguard monitoring of the ESM while the Nam Oun subproject was approximately 80% completed as of December 2018. There expects to be additional works to be implemented for both subprojects upon completion of main activities and further safeguards monitoring and evaluation is required during the next mission.

Chapter II: Social and environmental management

2.1. Social and environmental requirements

This chapter highlights key findings relevant to social and environmental constraints, associated with construction and rehabilitation activities which were monitored during the second safeguards monitoring. The findings help to understand and determine how the established environmental and social requirements, especially concerning the GAPs, LARCs, and EGDPs, are abided by the project implementing agency at various levels and the contractors. Evaluation and findings are based on comparison of the information and criteria set out in the FS and complementary reports, other relevant updated plans for the subprojects, and the evidences obtained during the second safeguards monitoring.

From the project information, it is reported that anticipated social and environmental impacts from both subprojects to the local communes are likely moderate and mitigatable because the subprojects mainly engage only rehabilitation of existing irrigation infrastructure. The social impacts are mostly associated with losses of individuals' productive lands of some beneficiary households acquired for the subprojects. The social impacts are likely more significant for the Nam Oun than the Nam Beng subproject while environmental impacts are minimal and not greater from one than the other. With anticipated impacts, the Project has carried out an appropriate grievance redress mechanism (GRM) which is a very crucial pathway to minimize the impacts. The mechanism includes meaningful consultations and participation of both the affected and beneficiary households with proper documentation for implemented activities to record and verify the compliances and transparency.

Some important findings of compliance and non-compliance issues of social and environmental safeguards noted from the mission are detailed as follows.

2.2 Social and environmental management documentation and permit/clearance

The feasibility studies and their auxiliary management plans and updated information help determine degree of potential environmental and social impacts. It is reported that the subprojects have minimal impacts on local biophysical environments. As such, the subprojects are classified as Category B of ADB's standard and category I in the Laos' Ministerial Agreement on the Endorsement and Promulgation of List of Investment Projects and Activities Requiring Conducting the Initial Environmental Examination (IEE) or Environmental and Social Impact Assessment (EIA), No. 8056/MONRE).

To comply with Lao relevant requirements, prior to implementation of the subproject the IEE study shall be approved and certified by the PONRE, thus, the project prepared IEE reports and social safeguards for the subprojects in English version for the subprojects. The two subprojects of 2018 disregarded public consultation and translation of the reports into Lao language as a protocol for IEE and EIA procedure. However, the reports cover comprehensive social and environmental baseline data and management plans such as EMPs, EGDs, EGPs, GAPs, and LARCs in accordance with the ADB's requirements. The IEE certificates for both projects were issued, which annexed to the first safeguards monitoring report.

With lesson learned from these two subprojects, the Project have been implementing the protocol, especially public consultation, for upcoming subprojects, including Nam Hao subproject of 2019 in Beng district. The public consultation workshop can benefit different stakeholders, including beneficiary and affected communities, involved in the project implementation contributing their ideas and knowledge. This will help improve quality of the reports and management plans, in return, minimize the anticipated impacts.

In addition to the public consultation, the Project has attempted to follow the Lao regulations and guidelines by translating IEE and its complementary documents of the new subprojects of 2019 into Lao prior to arrangement of public consultation workshops. Such improved process of the IEE will benefit local stakeholders such as PPOs, DCOs, DONREs and PONREs of better management and monitoring of environmental and social impacts for respective subprojects. For more better content and process of IEE reports, the PONRE and DONRE have requested the environmental consultant submitting the reports at earlier to ensure that the key stakeholders can have enough time to review and comment before IEE consultation workshops.

Likewise, the Project has an attempt to encourage the construction contractor of Nam Oun subproject to update the Construction Environmental Management Plan (CEMP) for the subproject in a more practical and comprehensive way. This will help ensure better health, safety, and environmental management and monitoring.

2.3 Institutional arrangement for social and environmental management

The Ministry of Agriculture and Forestry (MAF) is the executing agency (EA) for the Project. The agency is responsible for overall project coordination and management through its Department of Planning and Finance (DOPF) that has established the National Project Management Office (NPMO) for the day-to-day coordination and management of the Project. Like the NPMO, Provincial Project Offices (PPOs) have been established in each Provincial Agriculture and Forestry Office (PAFO) to be responsible for financial

management at the provincial level, as well as coordination and management of the implementation of subprojects. To support the PPOs in implementation, District Coordination Offices (DCOs) have also been established within District Agriculture and Forestry Offices (DAFOs) to coordinate and supervise subproject activities.

To ensure and adhere to the environmental and social safeguards of the ADB and Lao regulations, the established committees are composed of representatives from concerned offices responsible for environmental and social safeguards. These include the PONRE and DONRE, Lao Women Union (LWU), amongst others. Likewise, an Environmental Management Office (EMO) or its equivalent body within the PPOs with the assistance of the DCO has been established in coordination with other sectors, particularly with environmental sector.

The PPO and DCO as well as the EMO are designated to play an important role in environmental and social management and monitoring for the executive agency. The role of the committees is to ensure that environmental and social impacts are appropriately mitigated in conformity with the approved EMPs, GAPs, EGDPs and LACRs. The committees also have a role to ensure that good engineering practices are exercised for the environment and social protection and compliance.

2.4. Coordination between the Project and villages

It was noted that the coordination between beneficiary communities, and the local implementing agencies has remained well satisfactory. Likewise, the communication between contractors and the beneficiary communities seemingly improved compared to the first mission. For example,

- The contractor for the Nam Oun subproject sought local labor through formal request letters to the authorities of Chantai and Fen villages for employment; and
- A formal meeting notes between land owner and the contractor of the Nam Oun subproject regarding extraction of earth material on elevated parts of plots for construction work (embankment material), and reestablishing conditions for cultivation in these parts of the plots (paddy field).

The improved coordination will help reduce subsequent discontentment and constraints amongst some villagers, especially affected persons. To ensure continuous improvement, the DCOs and PPO shall closely monitor and advise the contractor and site engineers to coordinate and inform villagers of any activities which would affect the locals to avoid dissatisfaction, especially for Nam Oun subproject.

2.5 Public consultation and information dissemination

Two different public consultation meetings were reportedly organized during the IEE process, including a consultation during the IEE baseline study for presentation of project information and data collection. Other meeting with beneficial communities in the subprojects was held after completion of draft IEE report to disseminate the IEE key findings regarding the potential impacts and some mitigation measures for various stages of the subproject implementation. During the second mission, the ESM learned to know that the project has attempted to improved IEE process for subprojects of year 2019. For example, the Nam Hao IEE study become more formalized and meaningful with wider-stakeholder participation, compared to past subprojects. The workshop allowed the participants to question and contribute their perspectives and comments to the drafted IEE report, especially DONRE and PONRE officials who are responsible for review and approve the report.

As stated in the first safeguards monitoring report, the beneficiary confirmed of their participation to the two consultations for the IEE studies of two subprojects although it is less formal than the Nam Hao subproject of year 5.

Another improvement in the IEE process is translation of IEE report into Lao language, which had not been practiced for the subprojects. This issue had been raised in the first safeguards monitoring report aiming to support effective monitoring of the PONRE and DONREs. Although some efforts have been made by the Project regarding the IEE process, the distribution of the IEEs and their complementary plans to DONREs still needs to improve.

2.6 Capacity building for local agencies

It was confirmed that the representatives of PONRE and DONREs were engaged, amongst other participants, in awareness raising activities of four different themes such as: knowledge of AIDS, agrochemical use, gender equality, and general environmental management. The PONRE and DONRE personnel reportedly invited to deliver knowledge of general environmental management.

As a regular practice, the PONRE and DONREs were invited to participate in the second safeguard monitoring and evaluation together with the ESM team to ensure their continuous engagement and improved capacity.

2.7. Internal safeguard monitoring

Social safeguard monitoring

There was no formal internal safeguards monitoring carried out by the PPO and DCOs in partner with PONRE and DONREs between July and December 2018, as practiced in May 2018. There is no confirmation of either due to no construction activities during the period or no joint plan to do so. For this concern, the ESM talked to the PONRE and PPO and knowing that the PONRE sought to request separate expensive fund from the Project for its independent safeguard monitoring, which is not affordable for the PPO.

In addition, the PONRE reportedly asked the Project during the IEE consultation workshop for the Nam Hao subproject to consider monitoring budget plan for subprojects, but the project confirmed of inaccessibility of such budget for the Project. In this regard, the ESM recommended the PPO to coordinate with the PONRE of any possibility to engage PONRE and DONRE officials - one from each to participate one of PPO's site visits at least in a quarterly basis for PONRE and monthly basis for DONRE. This seems to be more efficient and practicable alternative and that the PPO is willing to consider.

Environmental monitoring system

As stated in the EMP of each subproject, environmental monitoring is required for subproject implementation both during construction and operational stages and shall cover (i) compliance monitoring conforming to the safeguard requirements specified in the EMPs, (ii) community feedback to obtain views and information on relevant environmental parameters, and (iii) water quality monitoring.

The internal environmental monitoring for the first half of 2018 was conducted between 15 and 16 May 2018 by the PONRE, DONREs, PPO, and DCOs for the subprojects while there was no such monitoring for the second half of the year. This is reportedly due to limited funding and suspension of construction activities on the ground during wet season. In this respect, the ESM and PPO recommended the PONRE to develop the plan that match the monitoring schedule of PPOs and DCOs, but the PONRE wants to be independent for monitoring and finance.

The ESM team recommended the PPO of an alternative way to engage a representative of the PONRE in safeguards monitoring in quarterly basis together with PPO during one of its field missions that may reduce cost and be more practicable. This aims to encourage regular internal safeguards monitoring based on the requirements defined in the EMPs. For meaningful monitoring, the PONRE should include preparation of field monitoring of its findings for reporting to the PONRE and PPO.

To increase their monitoring capacity, officials from PONRE and DONREs were invited to participate in this second safeguard monitoring and evaluation together with the ESM team. This aims to strengthen their existing limited capacity for safeguards monitoring. Their participation to the monitoring will increase their skills and knowledge in implementing the EMPs effectively and their confidence to undertaking future internal environmental and social monitoring. From their participation, they have learned and been demonstrated of how to monitor and evaluate social impacts. For example, they understand how to communicate with AHs regarding land losses, compensation, grievance redress mechanism (GRM), and equal participation of ethnic minority groups and genders in the project implementation.

Chapter III: Social safeguard monitoring

3. Key findings from social safeguard monitoring

3.1. Land acquisition, asset losses, and compensation

Nam Beng subproject

The subproject is in Beng District, Oudomxay Province. The subproject is designed to benefit six villages: Ban Namaed, Ban Yor, Ban Xiengle, Ban Houaylor, Ban Pangdeua, and Ban Nalai; comprising a total of 650 HHs. Ban Namet of 194 HHs benefits from both Nam Beng 1 and Nam Met sub-schemes while other 5 villages with a total of 456 HHs share irrigation water from Houay Lor sub-scheme. The rehabilitation of 3 sub-irrigation schemes will affect productive and non-productive lands of some households from the villages due to weir structure and canals, and access road.

The subproject was regarded as category C because of no acquisition of agricultural and residential lands for the subproject activities, as outlined in the FS, thus no compensation was required. However, in June and July 2018—the first safeguard monitoring, the ADB review mission as well as GIC internal verification indicated, that there are requirements of private land. In total there 7 affected households (AHs) of which 4 AHs are in the Nam Maed sub-irrigation scheme and 3 AHs in the Nam Beng sub-irrigation scheme.

Sub-Irrigation Scheme: Nam Maed

The 1st ESM Report indicated two affected households (AHs) whose lands are located on the left and right banks of the weir structure. The 2nd ESM confirms, that subsequently the voluntary contribution form for their affected lands were signed by both affected households in July 2018. The compensation for these two AHs has been completed as follows:

- To compensate the loss of 87m² land of Mr. Maipheng and Mrs Pha (about 2.5% of total productive land) the subproject and AH confirmed that the fallow land of his affected plot was levelled with the help of the contractor, so that the loss of cultivated area is replaced by a nearly doubled levelled area (details in CAP calculated 155m²).
- An area of 181m² of Mr. Maita's land was used temporarily for spoil disposal but has been re-established by the contractor of the subproject. There was no loss of crop. Mr. Maita was also affected by loss of productive rainfed land, but with the help of the subproject contractor a portion of his land that he could not use before, was leveled. Comparing lost and levelled land, he can now cultivate more land than before (details in CAP calculated 20m²).

The external monitor also used the information from the CAP about other AHs of this sub-irrigation scheme, which lead to the following verification results:

- Mr. Thong and Mrs. Deo are affected by loss of productive rainfed land, but it was confirmed that:
 - This AH got a written agreement with the community which allows him to use another plot of communal land for irrigated dry season;
 - The Project (PPO, DCO) agreed also in writing with the AH to make a approx. 100m long on-farm canal between a secondary canal and his field. This means he will be a direct beneficiary. The owner of the adjacent farm land agreed in this construction. This connection will be constructed during the remaining construction phase in the 1st quarter 2019.
- Mr. Bounmy and Mrs. Xay lost a portion of their land, but no action was required.

Clarification was achieved in the 3rd quarter 2018 between AHs, village authority, the DCO of Beng district about ownership, affected portion of land, type of compensation and other mitigation actions. Based on this understanding, the AHs decided to contribute their affected land in combination with the agreed mitigation actions to the project in July 2018. The PPO and DCO reported that the affected land of the three AHs on the left bank remain as rainfed area, but that these AHs got additional support to increase their cultivated area, benefit from the improved access to their land, and will also be included in any support measures the subproject offers to all farmers, such as a provision of a variety of seeds, and technical support.

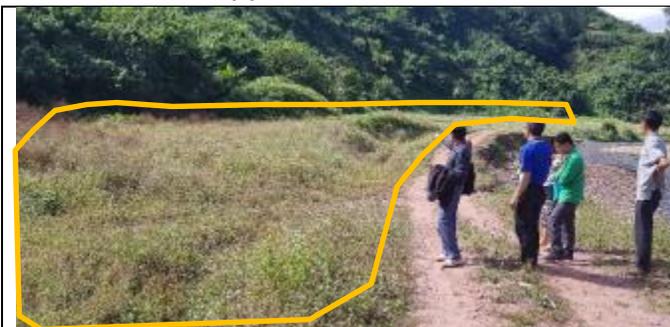


Photo 1: Condition of the affected rainfed land on left bank embankment and downstream of the weir at the Nam Met Scheme, 18 December 2018



Photo 2: Affected land of Mr. Thong due to irrigation canal, access road to the weir left bank embankment at the Nam Met Scheme, 18 December 2018

Sub-irrigation scheme: Nam Beng

This scheme has 2 AHs (Mr. Pa with Mrs. Houd, Mr. Mai In with Mrs. Sengly) because of the access road, and 1 AH (Mr. Phengsy and Mrs. Kongkeo) because of the Main Canal. The portion of loss is between 0.1% and 0.3% of their total agricultural land and has no impacts on them. They contributed their very little loss of land to the subproject.

Sub-irrigation scheme: Heuay Lor

There were already previous independent field works from 1st external monitoring, ADB review mission and GIC in June and July 2018. They all confirmed independently that there are no impacts on private land or structures.

3.1.2. Nam Oun subproject

Rehabilitation of sub-scheme is to increase the effective irrigated crop area from existing 250 ha to 420 ha for 5 the beneficiary villages such as: Ban Nam Oun, Ban Fen, Ban Chantai, Ban Nongdinh, and Ban Nathong with a total beneficiary of 1,208 HHs.

The updated LACR for the subproject estimated that the rehabilitation of the Nam Oun subproject will affect agricultural land of about 1,710 m² used by 6 AHs - two of which are vulnerable households (female-headed households). The affected lands represent an average loss of 1.3%--no exceeding 10% of their total productive land available for cultivation. These AHs are using governmental land of a reservation zone for irrigation facilities and canal systems. However, during the project implementation, more affected households, especially from the SC2 and SC4, were reported during the first monitoring of the ESM. The exact number of affected households and areas were not available because consultations and detail asset surveys were being proceeded at the time.

During the first safeguard monitoring, the external monitor was reported that there happened to be approximately 54 AHs reportedly to be affected by the Nam Oun subproject, in addition to the original 6 AHs originally designed. The new AHs were expected to be affected due to construction and rehabilitation of the SC2 and SC4 alignments which will be constructed after the end of the wet season.

During the second safeguards monitoring, the external monitor in cooperation with GIC verified jointly and confirm the total area affected with 6608m² of 30 AHs (15 AHs from Fen and 15 AHs from Chantai villages respectively). The percentage of land loss varies widely from 0.1% to 8.6% of their total productive lands according to the Inventory of Loss. This is due to land acquisition mainly for the sittings of the subproject components such as: weir structure (all AHs from this structure are from Ban Fen), SC2, and SC4. After consultations with all AHs along the secondary canals 2 and 4 on 19 December 2018 at Fen village (photo 6), they confirmed that they will benefit from the improved irrigation scheme, thus, they are happy to contribute the affected parts of their lands for the subproject use without request of cash or other forms of compensation.

Concerning the 5 households from Ban Fen that discussed in the first safeguard monitoring, the households and DCO of Houn district confirmed that the affected areas of 5 households belong to the government land reserved for the irrigation scheme. These

AHs are Mr. Joy and Mrs. Si, Mr. Chantavy and Mrs. Serm, Mr. Khamhark and Mrs. Niew, Mr. Bounleuay and Mrs. Lai, and Mr. Son and Mrs. Het. However, they claimed they regularly used the areas for cultivation. Currently, only two of which have other plots of land for production, in addition to the affected areas at the weir structure and main canal, while others have no other plots of lands for cropping because their remaining lands were acquired for military use. Thus, the support activities should be offered to these AHs who have impacts on their private land or the governmental land they are farming and their have no other lands for production. This can also include shelter houses on farm land as agreed with 2 AHs.

In addition to the 5AHs from the weir structure and 30 AHs affected from SC2 and SC4 of Ban Fen, there are 24 households that have houses within the 4-meter corridor reserved for the irrigation alignments of SC1 and SC2. Based on the consultation meetings with both villages, the potential affected households and village authorities documented a minute of meeting with the household owners in January 2017 and they did not require any forms of compensation or assistance (see Annex 3).



Photo 3: Site visit at rice paddy of Mr. Ampai and Mrs. Phan at Ban Chantai, 20 December 2018



Photo 4: Site visit and discussion with AHs at Chantai village, 19 December 2018



Photo 5: Houses along the SC....at Ban Fen, 20 December 2018



Photo 6: Consultation with AHs at Ban Fen, 19 December 2018

In addition, some design and construction aspects were discussed:

- Mr. Amphai and Mrs. Phan from Ban Chantai and one of the 30 AHs whose rice paddy will be affected by designed SC4—about 25m long and 7-8m wide. They have asked the contractor, PPO, and DCO to reconsider alternative design for the canal by building open or pipe overchute (cross-drainage structure) to this section of alignment to minimize additional land loss. He argued that installation of concrete pipes would not be able to prevent his rice paddy from flooding because the area is lowest point of local drainage system (photo 3).
- Along the compounds of the 24 AHs, preparation of SC 1 and SC2 with machinery would be difficult because the alignment passes residential area of Ban Fen (see photos 5). To minimize impacts on some structures of 15 and 9 houses for SC1 and SC2 respectively, the owners of the houses proposed to manually prepare the canals by themselves, but the construction contractor shall cover labor cost for such work. The minute of meeting on this matter between village authority and the owners was prepared (see Annex 3). This proposed plan has not been confirmed and determined from the contractor, PPO, and DCO.

3.2 Ethnic group development plan (EGDP)

3.2.1 Nam Beng subproject

As outlined in the FS report, about 99% of the residents in the beneficiary communities of 6 villages are the Lue ethnicity, and less than 1% representing the Lao Loum. Both groups are classified as the Lao-Tai Ethno-Linguistic group and speak the Lao National Language. The ethnic groups commonly practice Buddhism and have similar culture, customs, and traditions. Since most of the HHs within the subproject are Lue ethnic group, consequently the subproject is considered Category B. With this regard, the EGDP is prepared as annex document to the FS to protect the needs and interests of the Lue ethnic group from the subproject.

From consultations with DCOs and beneficiary villagers, they confirmed that various ethnic groups in the beneficiary communities have been engaged in different activities such as consultation, water use management, and agricultural production. For example, 819 beneficiary households from the Nam Beng subproject utilize water from the subproject in dry-season farming of various types of cash crops such as: tobacco, watermelon, sweet corn, vegetable, and rice.

3.2.2 Nam Oun subproject

Unlike Nam Beng subproject, the population in five beneficiary villages is very diverse, and representing 12 different ethnic and sub-ethnic groups. Of the 1,212 HHs, 559 HHs

(46%) belong to the Lao-Tai Ethno-Linguistic group with 6 sub-ethnic groups (Lao/Lao Loum, Tai Lue, Tai Phuan, Tai Daeng and Tai Dam); 393 HHs (32%) are Mone- Khmer Ethno-Linguistic group - comprising 3 sub-ethnic groups (Khmu, Khmu Rok and Khmu Ou); 218 HHs (18%) are Hmong lu-Mien with 5 ethnic groups (Hmong, Hmong Dam, Hmong Khao and Phunoi); and 42 HHs (3%) Tibeto-Chinese of Phunoi ethnic group.

Despite composition of various ethnic groups in the beneficiary communities of the Nam Oun subproject, it remains hard to convince and engage the minority groups in different activities, especially consultation meetings. However, there is a little improvement of their participation in the subproject activities observed during the second safeguards monitoring. For example, 64 beneficiary households benefit from irrigation scheme for their dry-season cropping, mostly soybean. These includes households from the ethnic groups of Phunoi, Phouan, Tai Kao, and Khmu. Despite some improvement, the PPO and DCO should continue to encourage their active participation.

3.3 Gender action plans (GAPs)

It is an obligatory requirement that at least 30% of participants engaged in implementation of the subproject must be women. The representation of women shall be demonstrated in different forms such as the Water User Association (WUA) Executive Committee and their attendance in subproject consultations, meetings, trainings, and study tours.

The Project partly achieves some specific requirements regarding promotion of gender equality in subproject implementation, especially 50% of participants involved in gender awareness training for each sub-project. the training includes: (i) project gender requirement/targets, (ii) awareness raising on land titling, (iii) impact of agro-chemicals, (iv) HIV and human trafficking, (v) division of labor, (vi) access to and control resources, decision making, must be women. The evidence of improved gender equality in participation in the gender awareness raising of the topics. For example, the training engaged 41% or 194 out of 473 participants for Nam Oun subproject and 58% or 476 out of 820 participants for Nam Beng subprojects in August 2018.

With regard to staff recruitment within the implementing agencies at various levels, at the central level, there are total 10 NPMO staff members - 50% of whom are female while at provincial level, 17 or 34% out of 50 PPO personnel in the 4 provinces are female. The female staff members recruited in the implementing agencies at district level consist of 22 or 37% out of total 60 persons. In addition, as already discussed in the first safeguards monitoring that composition of women in the WUGs accounts for more than 30% in each sub-scheme.

Unlike the first safeguards monitoring, the proportion of female participants during the second safeguard monitoring is slightly improved. The monitoring engaged 6 staff members from the PPO, DCOs, PONRE and DONREs and only one of them is female. However, there is a satisfactory signal that, based on registration sheets summarized from the meetings with beneficiary villages during the second monitoring, approximately 30% participants are female (see Annex 5).

Likewise, the project has strongly promoted female right in land entitlement for agricultural land use. The entitlement aims to include the name of spouse in the land use certificate. This was demonstrated in the Gender Action Plan (GAP) monitor table drafted in August 2018. The land entitlement is being progressively proceeded in the subproject communities for the irrigation command areas in the subprojects. this attempt also helps support enforcement of laws, especially the Land Law in Laos.

3.4 Employment opportunity for affected people

Local employment is regarded as one of social obligations that the Project shall conform to the project requirements. The requirement states that recruitment of labor should give priority to villagers from the beneficiary communes, particularly poor, female-headed, and AHs. Moreover, it is necessary to have a proper coordination between the contractors and local committees and authorities to ensure transparent employment. The hiring of local labor should take into account an equal opportunity between men and women.

The first safeguards monitoring missions indicated that local employment was very limited in the two subprojects. There are several factors which include but not limited to (i) better access to alternative jobs that give higher income, (ii) higher pay demand by local workers, and (iii) lack of skilled and unskilled labor force. Thus, to some extent it is difficult to hire local workers. Engagement of local female workers is even more complicate and difficult. With this concern, the ESM had recommended the PPO and the Contractors during the first monitoring regarding formal and proper communication with the beneficiary villages through written letters. As a result, there is some improvement, for instance, the contractor of Nam Oun subproject transmitted the formal notification letter to the village authorities of Ban Fen and Chantai regarding labor need (see photo 7).

During the second safeguards monitoring, the contractor reported that since restart of work, there are only 5 local workers from Chantai village and no engagement of female employees during in spite of such letters.

	<p>Summary of Content</p> <p>The Sengfaly Company, the contractor for the Nam Oun subproject, would like to inform you that currently we have some subcontract works and positions available at our construction sites. We would like to employ local skilled workers for the works and positions which will be available after 26 November 2018. The contract works will be responsible for construction of concrete canals and control gates. If any individuals are interested in the mentioned works please contact us for further details at our site office at Ban Fen (located on the way to military camp) with Mr. Vanxay Sathsadavong, mobile: 020 56672336 every day between 7:30-16:00.</p>
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Photo 7: A formal request of local employment to Ban Fen village authority

Concerning the unpaid local workers (4-5 people) at Nam Met, these workers had been hired by an individual person acting as a sub-contractor, who already left the construction site before completion of the subproject. The actual amount of unpaid labor is about 3 million – not 50 million as claimed by two of the workers during the first mission. It seems there is less chance to get this amount of money. This is one issue that the PPO and DCOs shall instruct the contractor to solve this issue, as he is responsible for his subcontractors (company or individuals) who hire local labor. This topic requires also attention in public meetings to avoid dissatisfaction among villagers.

3.5 Social complaints and grievance redress mechanism

It is the ADB's safeguard policy that any individuals, who may be adversely affected by implementation of the Project activities, must be informed at early to be ready for making complaints through Grievance Mechanism (GRM) regarding their livelihoods, health, asset losses, and other constraints. As per requirement for the Project, the GRM was prepared for the subprojects in safeguard reports with the detailed procedures for the GRM. The Project GRM is an essential tool during the project implementation, which is very helpful for the AHs to redress the grievances in a timely and effective manner.

The mechanism has been practiced in the subproject implementation. For example, the GRM was adopted for the complaint of Mr. Mai Keo regarding land loss due to land acquisition for the Nam Oun subproject and that his complaint was finally addressed. Nevertheless, to ensure more effective enforcement of the GRM, it will be useful to provide logbook or diagram (in Lao) in the village offices/halls so that the beneficiary villagers can use the procedure when necessary and understand the importance of the GRM.

It is quite common to hear some feedbacks and concerns from the beneficiary communes during the consultations, but it is unusual to see the petitions or written complaints from villagers to the village administration regarding their concerns. In many occasions, the concerns are raised verbally to the village authority with uncertainty if such concerns could be further delivered to upper levels for decision and solution. The PPO and DCOs should introduce the GRM which has already been developed for the subprojects to the beneficiary villages for better grievance redress mechanism.

Chapter IV: Environment safeguard monitoring

4. Key findings from environmental monitoring

4.1 Background of environmental information for the subprojects

Nam Beng

According to the subproject FS, it is anticipated that the subproject will not cause significant adverse environmental impacts and, thus, no further special study, or a full environmental impact assessment is required. The subproject is therefore classified as **Category B** according to the ADB's classification system, which is considered to have some adverse environmental impacts but of lesser degree or significance. As a result, only Initial Environmental Examination (IEE) is required and conducted for the subproject. Potential negative impacts relevant to the construction phase can be managed and mitigated to acceptable levels through the implementation of an Environmental Management Plans (EMPs).

From IEE findings, the anticipated impacts from the subproject activities will mainly associated with soil erosion-sediment transport, change of water flows in the rivers, workers' health and dust nuisance during the construction period. However, the potential impacts can be minimized through recommended mitigation measures and implementation of environmental management plans (EMPs) of the subproject. The anticipated impacts during the operation include increasing use of agrochemicals, particularly pesticides and herbicides, which can affect plants, animals, and insect populations, resulting biodiversity loss in the subproject areas.

Nam Oun

The IEE study for the subproject was carried out by the PPO and DCO staff and the NRI-GIC Environmental Consultants, following the relevant regulatory frameworks and Guidelines of Lao government and the ADB. From the IEE report, there are no areas of special ecological or biodiversity significance in or proximity of the command areas or within the catchment. In addition, from the engineering design, existing land use data, and discussions with the subproject beneficiaries and local officers, the subproject is classified as Category B of ADB's standard due to minimal anticipated environmental impacts.

Most of the impacts are likely occurred during the construction period. Like the other subproject, the impacts may include soil erosion, silt and sediment deposit, disturbance of river water flow, workers' health and sanitation system. In this regard, the proper and

timely implementation of the mitigation measures could help minimize environmental effects. Details of the mitigation measures are proposed in the EMP for the subproject.

4.2 Environmental safeguard compliance status of subprojects

The second safeguards monitoring was carried out in December 2018 which can reflect the environmental condition of dry season. This report presents key environmental compliance status of the construction, mainly for the Nam Oun subproject because the Nam Beng subproject has been in operation since June 2018. The key environmental findings and compliance status are thematically discussed as follows.

Erosion and revegetation

As a result of the recent wet season, erosions occurred at downstream of the Nam Met sub-scheme (see photo 8 and 9) due to high flow in the streams while other sub-schemes seem to remain stable. With rising water and flow velocity during wet season, the major parts of upstream of the sub-schemes are filled with sediment transported from upper part of catchment areas. This can reduce the smooth intake of water (See photo 9,11, and 13). The sediment deposition at upstream of the sub-schemes is mainly attributed to agricultural practices and other non-subproject activities at upstream of the sub-schemes.

Erosion induced by the construction activities is likely minimal because most of construction works in the slope areas and subject to erosion, especially river-based activities, had completed before the first safeguards monitoring. The status of siltation and sediment transport associated with construction activities and rivers in the sub-schemes during dry season can also be monitored from the value of TDS (Annex 2).

As recommended during the first mission, the revegetation in slope areas subject to erosion at the sub-schemes was reported and found at the Nam Beng 1 and Nam Met sub-schemes. However, the planted vegetation was damaged and washed away by the heavy rain in July and August. With this concern the beneficiary villagers were requested to replant local grass. The beneficiary communities were engaged in revegetation in exchange with the budget for revegetation to extension of irrigation canals.

Based on site visits to the sub-schemes of Nam Met subproject, it was noted that the slope areas which already revegetated were entirely washed away by flood during recent wet season. The areas become very unstable and unsuitable for revegetation again without stabilization. However, revegetation at Nam Beng 1 sub-scheme is likely successful and the slope areas remain stable while disturbed slope areas of other sub-schemes are now covered with natural plants. However, according to the information from the PPO, ADB approved additional works for both Nam Beng and Nam Oun subprojects

using saved money under contract variation, which include the bank protection works with bio-engineering, and will be carried out this dry season.



Photo 8: Areas subject to erosion at Nam Oun sub-scheme; 20 December 2018



Photo 9: the erosion prone area both upstream and downstream of the Nam Oun weir is protected with vegetation, 20 December 2018



Photo 10: Areas subject to erosion at Nam Oun sub-scheme; 20 December 2018



Photo 11: Erosion prone area both upstream and downstream of the Nam Oun weir is protected with vegetation, 20 December 2018



Photo 12: Areas subject to erosion at Nam Beng sub-scheme and revegetation; 20 December 2018	Photo 13: Condition of revegetated areas - reservoir area of Nam Beng sub-scheme after wet season; 20 December 2018
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Water flow

No any construction activities that can have disruption of natural flows in the rivers of sub-schemes because of no river-based construction activities after July 2018. Although the Nam Oun sub-scheme have restarted its construction on site, but mostly associate with rehabilitation and preparation of secondary canals which are not anticipated to create additional impacts on water flow to Nam Oun river.

During the site visits to the sub-schemes, only the Houay Lor was disrupted by diversion of water into private fish ponds, in addition to water demand for dry-season farming at downstream (see Photo 15). However, other sub-schemes operated with more water flow (Photos 14, 16, and 17) though some water use for dry-season cropping of farmers. Thus, there is no anticipated impacts to downstream aquatic ecosystem.

	
Photo 14: Waterflow condition at the Nam Oun scheme; 20 December 2018	Photo 15: Waterflow condition at the Houay Lo sub-scheme; 20 December 2018
	
Photo 16: Waterflow condition at the Nam Met sub-scheme; 20 December 2018	Photo 17: Waterflow condition at the Nam Beng sub-scheme; 20 December 2018

Aquatic and terrestrial resources

As discussed in the first safeguards monitoring report that the project has made its considerable effort in mitigating adverse environmental impacts, especially natural environment. For example, the project has designed and constructed fish passage structures at each sub-scheme of 2018 to minimize impacts on fish migration up and down the rivers where the structures are built on. However, if there is no proper regulation of the sub-schemes, the fish ladders may not help improve fish passage during dry season. The ESM found at the Nam Oun sub-scheme where the water was released through the stop-log sluice gate which is less viable for fish to pass, instead of releasing through the provided ladder (see Photo 18). However, a good example of regulation was observed at the Nam Beng 1 sub-scheme where water flow through the scouring sluice gate which can be an alternative way for fish passage though no water flows through the ladder during the dry season.

Despite existence of the structure, aquatic resources, based on short conversation with fishermen and their fishing activities at site (see photo 19) remain available at upstream of Nam Beng 1 sub-scheme and worth protecting. This spot could be introduced as a fish conservation zone. It is not known for Houay Lor, Nam Oun, and Nam Met if the fish species remain available because no fishing activities was observed.

Because some volume of water is diverted into the fish ponds nearby the weir structure of Houay Lor, in addition to the water for irrigation purpose, the overflow to downstream of the sub-scheme is likely disrupted, in turn, decreasing downstream environmental flow during the dry season. However, it was obvious that the decrease of environmental flow may occur at short distance between the weir and location of fishponds because the overflow water from fish ponds is reportedly regularly drained back to the Houay Lor. Therefore, the potential impact to downstream ecological system would be minimal. This issue is not much concerned for other sub-irrigation schemes which are larger streams with more flows and no other water uses rather than for irrigation in the command areas.

	
<p>Photo 18: Regulation of Nam Oun sub-scheme where water is released through high sluice gate and without water flowing into the fish passage, 20 December 2018</p>	<p>Photo 19: Fishing activities at upstream of Nam Beng sub-scheme where water freely flow to lowered sluice gate, 20 December 2018</p>

The ESM team did not see any activities of the contractor for the Nam Oun subproject, that would harm wildlife and forest resources in the subproject vicinity. Most of remaining construction works will engage only rehabilitation of canals that mostly pass farmlands and communal areas. It is also prohibited for the contractors' employees to engage in hunting wild animals and destruction of natural resources.

Hazardous and chemical use

There was no storage of hazardous material and waste at the construction site of the Nam Oun subproject. The site manager confirmed that the chemicals and hazardous materials, especially fuel and grease oil are only time-to-time delivered to the site by local suppliers.

General waste management

In general, the construction sites and worker's camp maintained good waste management and housekeeping. The contractor prepared a pit for temporary waste disposal next to the camp. However, the PPO and DCO should monitor if the pit was properly backfilled and reinstated at the end of construction work.

Although domestic waste management was well performed at the Nam Oun subproject, it is an unsatisfactory to see the increasing garbage at the Houay Lor weir structure (see photo 20) which have been in operation since July 2018. The garbage was generated by the pass-by visitors who came to the location for picnics because of its pleasant scenery. This will not only lose such beauty but also deteriorate and pollute downstream ecosystem because of waste disposed into the natural watercourse. This concern was

discussed with the PPO and PONRE to find some immediate mitigation measures and actions. For example, installation of warning sign and coordination with village authority of Houay Lor, especially WUG, and DCO or DONRE seeking viable solutions.



Photo 20: Evidence of garbage disposed at the Houay Lor weir, 20 December 2018

Dust and noise nuisance

There is a minimal concern of noise and dust nuisance from the Nam Oun subproject activities. The noise and dust nuisance are expected only from a couple of contractor's car and dump trucks driving through communes and operation of an excavator in farmland. The beneficiary villagers confirmed that they were not concerned much of dust and noise caused by construction activities because the construction works that require heavy machineries are located quite far away from residential areas. In addition, the excavation works were carried out during the day time, thus, dust and noise are not major concerns in the second safeguard monitoring.

Health and safety

In this mission, monitoring of health and safety issues focused on the Nam Oun subproject only as there was no construction activities on the ground for the Nam Beng subproject. The contractor of Nam Oun subproject has restarted works for a couple of weeks before arrival of the ESM's and the health and safety panels and sign posts found during the first safeguards monitoring were not existed at the main camp. It was not sure if the workers were provided with necessary personal protective equipment during their duties because the ESM team arrived at the site before working hour.

However, based on the monthly contractor's environmental report of December 2018, it reported and proved that the contractor conformed the health, safety, and environmental standards at some certain extent. In addition, the Contractor's site supervisor was

reportedly designated to take responsibility of all associated health and safety measures, such as use of safety clothing and other necessary equipment during their duties. To confirm this, the ESM met the contractor manager and he asserted that its company has tried to introduce health, safety, and environment (HSE), particularly personal protective equipment (PPE) to its employees to follow the project requirements, but the provision of such PPEs and associated measures targeted to its permanent workers regardless its subcontractors' daily or weekly-employed workers.

It is strongly recommended that the conformity to the HSE should be maintained and should extend to the subcontractors' all personnel on their duties.

4.3. Water quality monitoring

The second safeguard monitoring of 2018 did not cover sampling and analysis of agrochemical parameters and field demonstration because the scope monitoring of such parameter is only one-time monitoring for each subproject. Water quality monitoring in this mission conducted only for fundamental parameters. Total 8 water samples for the 7 basic parameters were collected on 20 December 2018 at the same sampling sites where the samples were previously collected. The designed parameters of water quality monitoring consist of pH, Temperature, DO, TDS, BOD5, COD Fecal Coliforms. Every parameter was analyzed in accordance with the procedures suggested in the Standard Analytical Procedure Manual for water samples. Two parameter such as pH and water temperature were tested on site while other 5 parameters were analyzed in the Laboratory.

	
<p>Photo 21: Water sampling and field parameters test at downstream of Nam Oun subproject; 20 December 2018</p>	<p>Photo 22: Water sampling at downstream locations of Nam Met and Nam Beng 1 sub-schemes - Nam Beng subproject; 20 December 2018</p>

The analysis results of 8 samples for the designated parameters found that all parameters of the samples are within the Lao National Standard of Ministry of Natural Resources and

Environment, No 0832, 03/03/2017. It is found that the BOD5 for the sample collected at Nam Met upstream is quite high with the value of 21.3 mg/L, but there is no standard level indicated for this parameter in the standard. It also is noted that the value of fecal coliform for NO1 and NO2 are 490 and 3,500 MPN/100mL respectively, which are lower than the results recorded in June 2018 of 35,000 and 22,000 mg/L that exceed the standard (22,000 MPN/100mL). Details of each parameters are presented in table 1 and summarized as follow.

- The level of pH is similar across all sampling sites during the monitoring period. The values of PH both upstream and downstream generally are in a range from 7.0 – 8.6. pH levels for all rivers are well within the lower and upper guideline levels, comparing to the pH value collected in June ranging from 8.2-8.6. This change might be the cause of weather changing to dry season and river water flow and water level.
- Water temperature during the monitoring generally has similar values amongst the sampling sites. The highest value recorded is 26.3°C at upstream of Nam Beng, that was measured in the afternoon while the lowest water temperature is 20.3 °C for the sample collected at upstream of Nam Oun. The lower water temperature of the samples is attributed to cold weather in the project area in December.
- In dry season, dissolved oxygen (DO) level is mostly varied within and between rivers and sampling locations. The highest value of DO is 9.60 mg/L for the sample collected at downstream Nam Beng (NB2), and the lowest record is 6.00 mg/L for Nam Lor downstream.
- TDS result is seemingly higher at Nam Oun river (upstream NO1 and downstream NO2) and downstream Nam Beng (NB2) than the other sites. In general, the analyzed TDS results of all sites in December are higher than TDS level in June, in exception for Nam Beng upstream (NB1).
- BOD5 levels in December are obviously higher than the BOD5 collected in June. Nevertheless, the BOD5 for most of the sites does not exceed 1.7 mg/L, excepting Nam Met upstream which is relatively high with BOD5 value of 21.3 mg/L. This might be influenced by the low flow level in the dry season and increasing human and animal activities upstream of the river.
- The highest COD level is recorded for Nam Met upstream (NB3) at 97.4mg/L, where the water quality at the upstream of the river would be affected by the human and animal activities. In general, the COD level of almost all sites in December is slightly higher than the COD level in June.
- Fecal Coliform Bacteria level between sites are generally similar. Although upstream and downstream of Nam Beng are recorded higher levels compared to the other sites. The highest value recorded is 13,000 MPN/100mL at Nam Beng downstream. the values of this parameter in most sampling sites tend to increase compared to the

values recorded in June 2018. This might be the result of overflow from nonpoint sources of human and animal waste.

Table 1: water quality analysis results

Item	Water Sampling Point	Unit	Standard ^{1/}	Waater Sample Point															
				NO1		NO2		NB1		NB2		NB3		NB4		NB5		NB6	
				Nam Oun (Upsteam)	Nam Oun (Downsteam)	Nam Beng (Upsteam)	Nam Beng (Downsteam)	Nam Mad (Upsteam)	Nam Mad (Downsteam)	Nam Lor (Upsteam)	Nam Lor (Downsteam)								
				Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18	Jun-18	Dec-18
1	pH		5-9	8.3	7.9	8.2	8.3	8.5	7.4	8.5	7.3	8.3	8.6	8.4	7.2	8.5	7	8.4	8.3
2	Temperature	°C	n'	24.4	20.3	25.4	20.6	29.6	26.3	29.6	25.3	28.0	22.5	26.6	24.4	30.4	23.4	28.4	23.2
3	Dissolved Oxygen (DO)	mg/L	> 4.0	8.95	8.05	8.15	8.1	9.00	9.40	8.85	9.6	8.75	9.05	8.15	8.8	9.00	9.20	9.55	6.0
4	Total Dissolved Solids	mg/L		214	229	212	221	241	152	183	171	116	140	122	143	157	164	162	162
5	Biochemical Oxygen Demand (BOD5)	mg/L		<1.00	<1.00	<1.00	1.7	0.95	1.25	1.05	1.3	<1.00	21.3	<1.00	1.05	<1.00	3.3	<1.00	3.0
6	Chemical Oxygen Demand (COD)	mg/L	7-10	<4.00	4.46	14.6	8.28	4.86	5.73	<4.00	<4.00	<4.00	97.4	<4.00	5.73	<4.00	10.8	<4.00	10.8
7	Fecal Coliform Bacteria	MPN/100mL	20,000	35,000	490	22,000	3,500	33	130	130	13,000	330	330	130	460	330	1,300	310	2,300

Note: ^{1/}Lao National Environmental Standard, Ministry of Natural Resources and Environment, No 0832, 03/03/2017. Table 10, Type 3

4.4 Compliance and non-compliance

No major environmental non-compliances were observed and reported during site inspection to the construction sites and workers' camp. Nevertheless, in compliance with EMPs, ADB safeguards, and associated Lao regulations for the Project, the contractor, PPO and DCOs shall maintain its good performance of environmental management.

4.5 Environmental complaints and grievance

The ESM did not receive any formal written environmental complaints from the local communities or authorities regarding the environmental problems associated with construction activities and operations of the subprojects. However, there is a couple of issues verbally raised by the beneficiary villagers and the PONRE. First, villagers of Nalay and Pangdue is concerned of increasing dead animals and domestic waste disposed (ether intentional or unintentional behaviour) by the beneficiary communes at Ban Yor where the main irrigation canal of Houay Lor first runs through. This may not only affect the downstream villages in their agricultural production due to increasing waste, but also environmental concerns – water quality and unsatisfactory odour. The representative from Nalay explained that some households in his village use water from irrigation canal for washing and bathing. Second, the representative of PONRE who joint the ESM pointed out his concern regarding increasing waste disposal at the Houay Lor sub-scheme, which needs possible immediate actions from the PPO and the DCO and DONRE of Beng district.

Chapter V: Conclusion

5. Conclusion, recommendation, and follow up plan

5.1 Social safeguard

The Project has demonstrated continuous effort to improve its implementation of social impact management plans for the LACRs, EGDs, and GAPs in compliance with ADB's relevant policies and Lao regulations. However, in parallel with positive achievements, there are still some options for further additional social safeguard measures for the two subprojects. The main achievements and required improvements can be concluded as follows.

LACR: in the first safeguard monitoring, many households had been reported for unsettled land use impacts due to land acquisition for the Nam Oun subproject, especially SC2 and SC4. However, during the 2nd half of 2019 the AHs were actively participating through public and individual consultation clarifying raised items and settled complaints. The formal land acquisition has been completed. It has been observed that the contacted villagers expected to gain direct benefit from the subproject. This is demonstrated by the evidence of completed voluntary contribution forms accepted and signed by the AHs. In addition, the support activities should be offered to all AHs who have impacts on their private land or the governmental land they are farming. This can also include shelter houses on farm land as agreed with 2 AHs. It is, therefore, recommended that the PPO and the DCO of Houn district should carefully continue to investigate these few AHs for additional information and support if necessary.

Although they signed the voluntary contribution forms, there happened to be 5 landowners at Ban Fen who claimed not benefit from the subproject. This is like the case of Mr. thong and Mr. Maipheng at Ban Na Met whose lands affected without benefit from the Mam Met sub-scheme and that they will be entitled to receive a shade-farm house. As such the few AHs from Ban Fen should be entitled in a similar support.

It is, therefore, recommended that the PPO and the DCO of Houn district should carefully investigate these few AHs for additional information and support if necessary.

GAP: percentage of women and men in various level committees and training activities are well proportionated and achieving the project implementation target of gender action plan. The representation of women in the consultation meetings with beneficiary villages during the second monitoring also reached the 30% target.

EGDP: although the Project has tried to encourage the participation of minority ethnic villagers in the subproject activities, but there are several challenges to implement the EGDP. This is more particular for the Nam Oun subproject where more diverse minority groups are beneficiary, especially their engagement in consultation meetings. The PPO and DCOs shall continue to encourage their participation in different consultations and other activities at various stages of the subproject implementation.

Employment: there is an improved tendency of local employment mechanism for the beneficiary villages of the Nam Oun subproject. Although construction contractor proceeded local employment procedure through formal request letter of labor demand there is still a limited number of local villagers who are interested and hired, especially women. This is because of several factors including low wage rate-higher pay demand by villagers, better access to alternative jobs that give higher income, and lack of skilled and unskilled labor force. The PPOs and DCOs shall continue to encourage the contractors to employ local workforce and maintaining existing procedure of recruiting local workers through formal request letters.

Social safeguard monitoring: no internal joint monitoring regarding social impacts, particularly land use impacts and compensation, was conducted by local stakeholders such as PPO, DCOs, PONRE and DONREs during the second half of 2018.

5.2 Environmental safeguard

There are less environmental concerns due to decrease of construction work on the ground for the Nam Oun subproject while the Nam Beng subproject has been in operation since June 2018. Although few issues still need to be addressed the project has indeed demonstrated outstanding performances and improvement in compliance with environmental requirements. Overall implementation of the EMPs for the subprojects during the second safeguards monitoring of 2018 is satisfactory. Main findings and recommendations are concluded as follows.

Environmental monitoring activities: there was no internal environmental monitoring, in addition to the one conducted 15-16 May 2018 due to limited funding for independent monitoring of PONRE and DONREs and suspension of construction activities during wet season. With this concern, the PPO shall introduce an alternative way to engage a representative of the PONRE in safeguards monitoring in quarterly basis together with PPO during its regular field mission that may reduce cost and be more practicable. The aim of the internal monitoring is to encourage conformity to the requirements defined in the EMPs.

Erosion and sediment control: construction-related erosion and sediment seems to be minimal because most of construction works of Nam Oun subproject has completed and all sub-schemes of Nam Beng finished. Only erosion along the river banks of Nam Met – downstream of the weir structure was observed caused by recent wet season. It is also noted that major areas of reservoirs of the Houay Lor and Nam Met are filled with sediment and aggregates transported from upper part the catchment areas due to agricultural activities.

Unlike the Nam Beng 1 sub-scheme with successful revegetation for slope protection, the slope areas which already had been revegetated both upstream and downstream of the weir structure of Nam Met were entirely washed away by flood during recent wet season. Besides, the areas become unstable and unsuitable for revegetation. According to the PPO, ADB approved additional works for both Nam Beng and Nam Oun subprojects using saved money under contract variation, which include the bank protection works with bio-engineering, and will be carried out this dry season

Aquatic and terrestrial biodiversity: although an immense effort of the Project in minimization of anticipated adverse impact on aquatic ecosystem have been made by introducing fish passage facilities, good regulation of the sub-schemes is required to ensure efficient use of the fish ladders. At the Nam Oun sub-scheme, the ESM team found water only flows through a stop-log sluice gate which is less viable for fish to pass, but no flow through the provided ladder. Unlike the Nam Oun sub-scheme, a good example of regulation was observed at the Nam Beng 1 sub-scheme where water flow through the scouring sluice gate which can be an alternative way for fish passage though no water flows through the ladder.

There is a good signal to see and talk to some fishermen at Nam Beng 1 that the fish species remain existed at upstream of Nam Beng 1 sub-scheme and worth protecting. This spot could be introduced as a fish conservation zone.

There were no any construction activities that may harm local terrestrial biodiversity because remaining works of the Nam Oun subproject will engage only rehabilitation of. In addition, no hunting and consumption of the wild animals was found at the construction camp.

Water flow: no disruption of natural flows of the rivers of sub-schemes with exception for weir structure to accommodate for dry-season cropping in the command areas as the river-based construction activities completed before July 2018. Nevertheless, with its small stream and low flow, diversion of water from the Houay Lor sub-scheme to private fish ponds was observe. The diversion could potentially decrease downstream flow for ecosystem at downstream of the Houay Lor sub-scheme. However, this decrease of downstream flow would only occur at short distance between the weir and location of

fishponds because the overflow water from fish ponds was observed and confirmed to be regularly drained back to the Houay Lor after use.

Water quality: as required for environmental quality monitoring, water sampling and analysis for basic parameters were conducted to compare with the baseline data collected during the first mission in June 2018. Total 8 water samples were collected at upstream and downstream of 4 sub-schemes for analysis. The analysis results of the designated parameters show that no any parameters exceed the Lao National Standard. It is noted that the values of fecal coliform for NO1 and NO2 is found better in the second mission 490 and 3,500 MPN/100mL respectively compared to the results recorded in June 2018 of 35,000 and 22,000 mg/L which exceed national standard (22,000 MPN/100mL).

Environmental complaints: there are two main concerns raised by stakeholders during the second safeguards monitoring. These include the complaint from beneficiary communes of Nalay and Pangdeua regarding waste disposal and polluted water caused by upstream villages in the main canal of the Houay Lor sub-scheme. Another complaint is the increasing waste disposal at the Houay Lor sub-scheme by the pass-by visitors. These concerns need immediate possible solution and actions from the PPO and the DCO and DONRE of Beng district.

Health and Safety: this issue was discussed in the first safeguard monitoring report and during the meeting with the project manager of the Nam Oun subproject. It was noted during the second safeguard monitoring and review of the CEMR that the contractor has paid more attentions to the raised issue by providing the PPEs to its employees during their duties. However, it is recommended that the PPEs shall be available not only for the contractor's personnel but should extend to its subcontractors' workers as well. It is also necessary to deliver inductions of occupational health and safety principles to all workers and sign posts of health, safety, and environment need to be erected at the worker's camp and construction sites.

5.3 Follow up plan

Next mission is the first safeguards monitoring for 2019 and it is scheduled for June 2019. The key environmental and social safeguards to be monitored and evaluated for the mission will cover pending issues from the second safeguards monitoring of 2018 and other aspects from the new subprojects in 4 provinces. The pending issues to be evaluated and monitored include:

- Environmental safeguards items
 - Mitigation measures for better waste management at Houay Lor sub-scheme;
 - Review of health and safety compliance for the contractor of the Nam Oun subproject;
 - Site inspections of the construction sites and camps regarding site reinstatement after completion of construction work at the Nam Oun subproject;

- Water sampling for basic parameters for Nam Oun and Nam Beng subprojects;
- Consultation with Nalay villagers regarding waste disposal into the main canal of Houay Lor sub-scheme by the upstream village; and
- Social safeguard items
 - Continuing consultations with affected and beneficiary villages in the Nam Oun subproject;
 - Implementation progress of shade house farming activities for two AHs at Na Met village;

Annex 1: Completed forms for affected households' voluntary contribution

Annex 2: Water quality monitoring report

**Annex 3: Minute of meeting with land owners along the reserved canal alignment
for Nam Oun subproject**

Annex 4: Minute of Meeting of second safeguard monitoring

Annex 5: Registration