Environmental Monitoring Report

Semestral Report
August 2019

Lao PDR: Greater Mekong Sub-region East-West Economic Corridor Towns Development Project

Prepared by the Project Management Unit of Department of Public Works and Transport Savannakhet, Province for the Ministry of Public Works and Transport, Provincial of Natural Resource and Environment, and the Asian Development Bank.

LAO PEOPLE'S DEMOCRATIC REPUBLIC
Peace Independence Democracy Unity Prosperity

LAO PDR: GMS EAST-WEST ECONOMIC CORRIDOR TOWNS DEVELOPMENT PROJECT

ADB LOAN NO.2931 – LAO(SF) AND GRANT NO. 0313 – LAO(SF) AND NO. 0314 – LAO(UEIF)

SEMI-ANNUAL ENVIRONMENTAL SAFEGUARDS MONITORING REPORT

JANUARY-JUNE, 2019

Prepared by the Project Management Unit of Department of Public Works and Transports Savannakhet, Province for the Ministry of Public Works and Transports and the Asian Development Bank and Provincial of Natural Resource and Environment.

NOTE:

In this report, "$" refers to US dollars.

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I. EXECUTIVE SUMMARY

A. BRIEF DESCRIPTION

1. The discussion below presents the summary description of the status of implementation of the environmental safeguards in the sub-projects during the monitoring period January 1 to June 30, 2019.

a. So far, 6 of 7 EMPs were disclosed in the bank website, recently EMP of Kaysone Phomvihane Municipality Solid Waste Management subproject was approved by ADB and it was disclosed in the bank website, EMP of Kaysone Phomvihane Houay Long Kong Channel, Gate and Pumping station subproject is required to be updated with DEWAT additional construction, which agreed during the ADB midterm review in March 2019, however, DEWAT detail engineering design is under the progress, It expected to be finalized in July 2019, the EMP of HLK Waste Water Management will be updated accordingly.

b. 6 CEMPs from contractors were already approved and implemented in line with construction progress, the last CEMP and Occupational Health and Safety Plan (OHSP) of Houay Longkong Channel, Pumping and Water Gate was approved in April 2019. The CEMP and OHSP documents of Mekong River Embankment subproject is under preparation progressing, because contractor just noticed commence June 25, 2019.

c. **Environment quality monitoring:** Lao-UAE laboratory and environment service Co. LTD has provided environment quality monitoring service to all environment quality monitoring in each subproject. 4 urban road and drainage construction as KP Road, Fa Ngum road, Phine road and Dansavanh road have conducted TSP, PM10 and noise level monitoring as second time during January 7-12, 2019 and third time during April 1-5, 2019. The First-time surface water quality monitoring in wastewater HLK subproject on March 12, 2019 in three locations with 11 parameters per location. KP solid waste management project has conducted ambient air quality monitoring, groundwater and surface water during December 18-21, 2018; but data analysis is not finalized during last SEMR report, so result of monitoring is presented in this SEMR. The quality monitoring reports are regular submitted to CSCS as defined in EMP.

d. ADB Midterm review was organized during March 18-25, 2019, environment monitoring has shown a good performance in general and specific on environment quality monitoring, however, some environment concerns were raised by ADB on the Dansavanh Urban Road subproject, Phine Urban Road, KP Solid Waste and KP Waste Water HLK as detail presents in table 1.

e. The CSCS-NES with PMU-ESS have regularly conducted monthly environmental monitoring of the sub-projects, included advice and provide corrective action for noncompliant issues. As person-month for CSCS-NES is limited, thus, the monthly monitoring or ad hoc monitoring were conducted by PMU-ESS during last few months.

f. The solid waste management training had been conducted during January 21, 2019; there were 44 participants, included female, they are representative from 6 contractors and government agencies such DoNRE, DPWT, PMU, UDAA, Governance Office, LWU and PITs. The solid waste management training focused on 3R management system that trainer presented community based solid waste

management, an example from Indonesia. Road Management Training had conducted the day after as January 22, 2019; there are 41 participants included 9 females, they came from same agencies were participated in the solid waste training.

g. **Environment Study Tour**: Indonesia study tour is specified on solid waste management and road management as minor. This study tour was organized during Feb 25-Mar 1, 2019; there are 11 participants, included 3 females, which was leading by Mr. Phoutthasen AKKHAVONG deputy Director General of Department Housing and Urban Planning, and team from PMU, Governance of KP Municipality, UDAA and DPWT. The study tour had visited three importance places as (1) laboratory of road in Bandung, (2) *Suwung* Community based Solid Waste Management and Land fill area and (3) Tabanan community based solid waste management.

h. Environment, health and safety capacity building has been regular organized in each subproject, the ESHOs have regular conducted awareness raising as weekly basic. Each awareness raising event, EHSO has conducted different contents regarding environment, health and Safety, example PPE requirement and it's importance roles on safety prevention; Truck driver requirement and technic for prevention accident; each subproject has reported their awareness raising in MEMR.

i. The PoNRE conducted an environmental inspection of the Fa Ngum Road, Kaysone Phomvihane Road, Phine Urban Road, Dansavan Urban Road, Kaysone Phomvihane Wastewater Management-HLK and Kaysone Phomvihane Solid Waste Management sub-projects from March 27 to April 5 2019. The findings of the environmental inspection of PoNRE is the implementation of the environmental management in the sub-projects are good but can still be improved further on public and worker safety.

j. According to Grievance logbook record in each subproject and MEMR, there are nine complaints regarding environment, health and safety issues from 6 subprojects during report period. There was raised up with two subprojects as Phine urban road construction and KP road construction, 7 of 9 complaints were solved, two under solving with corrective action plan.

2. Table 1 below presents the matrix of issues and concerns raised by ADB in their review and compliance monitoring of the Project and the response and action taken by the CSC and PMU to address the identified issues and concerns.

TABLE 1. ISSUES AND CONCERNS AND RESPONSE AND ACTION TAKEN

NO	Issues or Concerns	Response or Take Action
1	Dansavanh Urban road subcamp located in R1, camp facilities are low standard. 1. Sleeping location disorder, messy and no privacy 2. Lavatories are unsuitable with poor sanitary 3. Equipment, vehicles and fuel tanks are not placed in designated areas, oil/grease containers are also kept in a haphazard fashion in the camp without appropriate bunding or spill	1. The Contractor had been instructed to improving the camp facilities after ADB mission, 1. Improve bathroom, 2. Wastewater storage, 3. Install light, 4. Fired/spark is not allowed, all stoves or cooking allow only in the main camp, 5. Upgrade or improve bedroom and 6. Covers or roofs of the camp 2. All spill from asphalt, leakage should immediately be cleaned and manage as

	control. Traces of oil/grease spillage were observed in several areas.	hazardous, the waste oil or asphalt should be stored in the tank container with cover. 3. NCK should reorganize trucks parking area, oil, grease or asphalt zone, with warning signage and entrance and exit for the camp. 4. TL also issues warning letter to confirm the NES instruction 5. Contractor has complied with instruction accordingly in early April 2019.
2	Phine Urban road: Dust control is required increase more water spray in the construction, particular in residential areas and sensitive receptor areas	1. The Contractor had been instructed to immediately spray water the areas without base course, in residents and sensitive receptors 6 times per days and 2 times per day where are base course layer 1 or 2 layers. 2. So far, there is no any complains regarding the dust pollution, and pavement is completed the most sections in Phine Urban road construction, there are only few sections under basecourse construction.
3	SWM: The Mission noted that no progress or effort has been made to work, coordinate and agree with the existing landfill operator for sharing leachate among existing landfill and new landfill	1. NES has discussed with TL and PMU. The landfill management or decision on connecting or not connecting pipeline for liquid waste among existing landfill and new landfill, PMU sent letter to KP municipality governor and planned to organize consultation as final decision end of April 2019. 2. Due to not available of concern agencies, the consultation on landfill management is postponed to July 2019. 3. If the final decision agreed, the existing landfill will be closed after completion new landfill, the connection is not necessary, if not closed, the connection pipeline will be immediately design and integrate into current landfill.
4	WWM-Houay Longkong Channel: EMP of Houay Longkong Channel, the latest updated version of which submitted to ADB in November did not include DEWAT, therefore further update is needed by CS and to be submitted to ADB by 5 April 2019 **CEMP**: The Mission requested that CSC coordinate closely with the Contractor to speed up the revision of the submitted CEMP and if needed, technical advice and guidance be provided to the	1. It is impossible to add DEWAT without design, NES and IES will add DEWAT into EMP after, DEWAT has been integrated into channel designed in Houaylongkong, So far, DEWAT detail engineering design is not finalized, EMP will be update and re-submitted to ADB for approval again upon DEWAT DED completion. 2. CSCS has issued letter to contractor for speed up the process and pay attention on CEMP revision. NES and contractor have well-coordinated and technical advised to contractor and they expected to finalized and get approved within April 2019. NES also

	Contractor to finalize and get CEMP approved sooner	called for meeting with contractor for better coordinate and provide detail comments in March and why CEMP is not approval yes. NES give deadline for re-submit CEMP and OHSP on 22 April 2019. 3. Finally, CEMP & OHSP documents were revised according to comments and got approval from CSCS end of April 2019.
5	The exceed particulate of matter dust pollutant on parameter TSP, PM10 at Thippanya Kindergarten elementary school, Xaysombath college (KP road construction subproject) and Disability center (Fa Ngum road construction).	1. This issue was consulted with PMU, contractor after received result of laboratory as agreed to follow below mitigation. 2. Increased speed limited signs both directions before arrive the sensitive areas. 3. Obtain watering 6 times per day as 7:00, 9:00, 11:00, 14:00, 16:00 and 18:30 4. Speed up construction for asphalt concrete pavement in the KP road around the sensitive 5. The mitigation has proved that 3rd monitoring is significant improved compared to previous monitoring.

B. PLANNED ACTION FOR SUCCEEDING MONITORING PERIOD

3. The following activities is planned for the next monitoring period for the Project from July-December 2019:

a. Continue with the regular quarterly environmental safeguards monitoring as per approved IEEs and EMPs of the sub-projects.

b. Conduct Rapid Environment Assessment (REA) for additional construction in each subproject with providing addition construction description from each subproject

c. Update EMP-Wastewater HLK with DEWAT, another additional construction plan as requirement from ADB during midterm review.

d. Review and evaluate the CEMP & OHSP for Mekong River Embankment subproject, including capacity building for contractors and replacement of EHSO in some subprojects.

e. Review and evaluate the monthly environmental safeguards monitoring report of the appointed Contractors for the sub-projects; prepare quarterly and semiannual environment safeguard report for submitting to PMU and ADB.

f. Update EMPs or IEE as commented from safeguard team/ADB based on REA and subproject description.

g. Provided technical advice for environment, health and safety for project implementation, particular contractor in each subproject.

h. Report on quarterly and last semiannual environment monitoring report for 2019 as obligation and roles in TOR for submitting to PMU, ADB and DONRE.

II. PROJECT AND GENERAL SAFEGUARDS OVERVIEW

A. PROJECT BACKGROUND

4. The participating corridor towns of Kaysone Phomvihane, Phine, and Dansavanh in the Lao PDR face the pressing task of coping with the demands of rapidly growing and expanding urban areas. Local authorities want to plan and manage urban growth using an integrated approach, operate and maintain urban environmental and economic infrastructure, and efficiently deliver municipal services. Despite policy reforms to promote decentralization, local institutional capacity has not kept pace with urban sector development and economic growth. With increasing trade and traffic flows, the capacity of the corridor towns to manage local economic development in an environmentally sustainable manner urgently needs to be strengthened.

5. The expected impact of the project is for the towns of Kaysone Phomvihane, Phine, and Dansavanh to become centre of trade and investment in the EWEC, thereby contributing to the transformation of transport corridors to economic corridors in the GMS. The expected outcome is adequate essential urban infrastructure and services in the project towns. The drainage, septage management, and river embankment protection subprojects will contribute to increased climate resilience of the participating towns.

6. The key outputs of the project are as follows: (i) adoption and implementation of Strategic Local Economic Development Plans (SLEDPs)[1] in the project towns, (ii) implementation of priority urban infrastructure investments, and (iii) strengthened institutional capacities for urban development. The priority subprojects for infrastructure investments were identified based on (i) consistency with project's overall goals and objectives, (ii) potential impact in contributing to economic growth and level of competitiveness, and (iii) the expressed interest and commitment of the executing agency to provide necessary resources, criteria that were discussed during the national workshops with project stakeholders.

7. The Project consists of seven (7) sub-projects which are identified priority small infrastructure development works. (See Figure 1 for Target Districts). The details of the sub-projects are presented in the succeeding sections.

a. **Fa Ngum Road Sub-Project (Kaysonephomvihane Urban Roads) (NCB-4.1B)**

- Fa Ngum Road is composed of three (3) main roads with a total length 2,149 meters and public park recreation. The Contractor for this sub-project is Champakham Road and Bridge Construction Co. Ltd (CPK). The total cost is 2,289,611.17 USD and the contract duration is 24 months commencing 14 November 2017.

b. **Kaysonephomvihane Road Sub-Project (Kaysonephomvihane Urban Roads)**

- Kaysonephomvihane Road has total length 6,182 meters, with total cost 7.546.207.00 USD. Contractor for this sub-project is Road No. 8 Construction Enterprise with PK and TSC JV. Contract duration is 24 months commencing 11 November 2017.

c. **Phine Urban Road Sub-Project (ICB-4.3)**

[1] *The SLEDP represent a new form of planning document developed for the purpose of combining economic development planning with urban infrastructure investments. The SLEDPs identify economic drivers and provide justification for infrastructure investments under the project, and by other sources.*

- Phine Urban Roads has a total length of 9,978 meters and a total cost of 4,010,613.00 USD. The construction of the sub-project was awarded to JV of Road No. 8 Construction Enterprise with PK and TSC. The Contract duration is 24 months commencing on 01 November 2017.

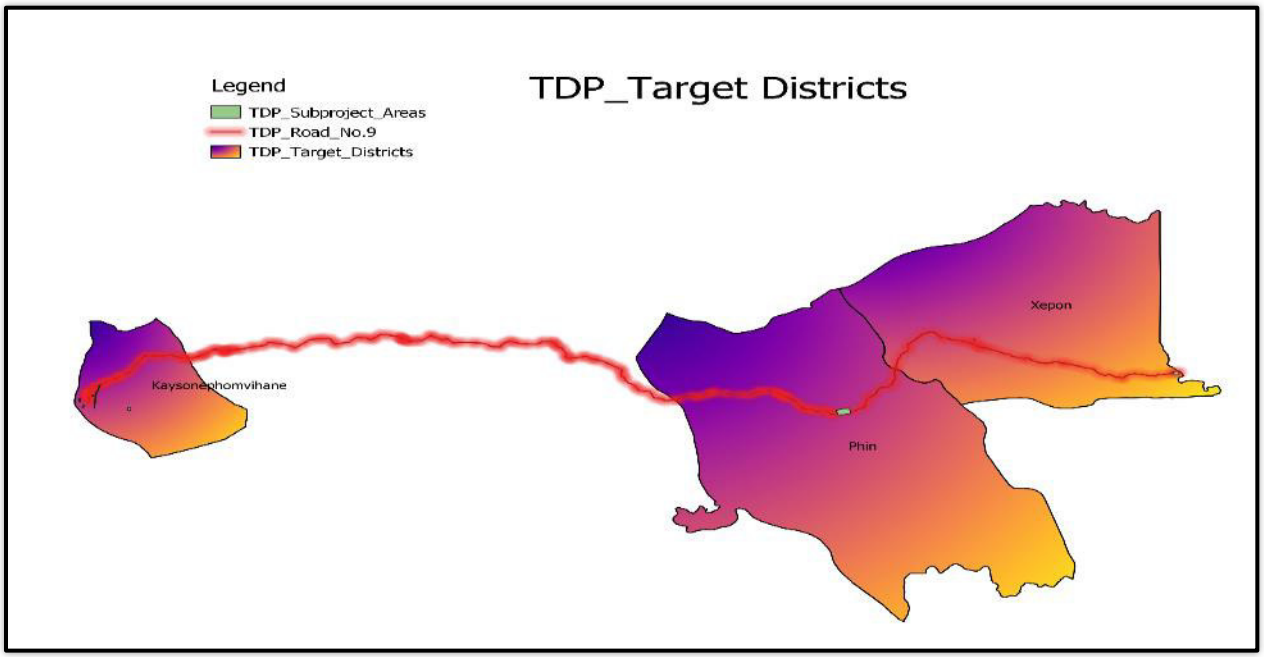
d. **Dansavan Urban Road Sub-Project (NCB-4.2)**

- Dansavanh Urban Roads has a total length of 3,884 meters with total cost of 2,312,621.58 USD. The Contractor for the sub-project is Noukham Construction Co., Ltd. The Contract duration is 24 months commencing on 11 November 2017.

e. **Kaysonephomvihane Solid Waste Management Sub-Project (NCB-2.1)**

- The total area covered by the sub-project is 10 hectares, primarily for the improvement of the existing landfill at a total cost 1,659,205.10 USD. VSP Construction Company Ltd was awarded the contract for the construction of the sub-project with a contract duration of 24 months commencing 22 March 2018.

FIGURE 1. TARGET DISTRICTS OF TOWNS DEVELOPMENT PROJECT



f. **Wastewater Management-Houylongkong Channel Sub-Project (NCB-1.1)**

- This sub-project involves the construction of a HLK channel with a length of 830 meters and a pumping station with an automatic gate a total cost of 1,673,128.31 USD. The appointed Contractor is JV of Road No. 8 Construction Enterprise with PK and TSC. The Contract duration is 24 months commencing on 22 March 2018.
- DEWAT component is just included into HLK channel, gate and pumping during the ADB midterm review March 2019, However, the DEWAT is under the detail engineering design.

g. **Mekong River's Embankment Sub-Project**

- This subproject the construction of an embankment with a total length of 980 meters and a width of 50 meters from existing road to Mekong River. The Mekong River Embankment subproject has included different zones as urban recreation park, sport zone, market zone and also included road and drainage rehabilitation as road and drainage in front Mekong River Embankment
- The Mekong River Embankment subproject contract is awarded to Laomixay Construction Co., LtD on June 5, 2019 as 24 months construction period with total cost USD$ 4,506,063.01.

B. PROJECT PROGRESS

8. The progress of implementation of the sub-projects as of June 30, 2019 is presented in Table 2 below.

TABLE 2. ACTUAL ACCOMPLISHMENT OF SUB-PROJECTS, 30 JUNE 2018

NO	SUB-PROJECT	PROGRESS (%)	
		ACTUAL	PLANNED
1	Fa Ngum Road (Kaysonephomvihane Urban Roads) (NCB-4.1B)	68.09	91.60
2	Kaysonephomvihane Road (Kaysonephomvihane Urban Roads)	87.70	90.10
3	Phine Urban Road (ICB-4.3)	81.50	82.10
4	Dansavan Urban Road (NCB-4.2)	89.75	91.20
5	Kaysonephomvihane Solid Waste Management (NCB-2.1)	66.80	62.80
6	Wastewater Management - Houylongkong Channel (NCB-1.1)	39.80	66.50
7	Mekong River Embankment	Just notice commenced June 25, 2019	

9. Fa Ngum Road subproject: U-ditch drainages for road section F1, 2A and 2B were completely constructed during the period; earth work and pavement was initiative constructed this period as subgrade, subbase and asphalt concrete pavement in the road section F1, and 2B are completely constructed, the road section 2A just completed subgrade and subbase. The public park has started with clearing, refilled surface and drainage surround the public park, these activities are being implemented and expected to completed the next before November 2019. The beautification works are also being implemented as curve installation, side walk and access road, so far it was completed only F1 section.

10. Kaysone Phomvihan road: After completed drainage and asphalt concrete pavement in KM0-KM2, the drainage and earth work, included asphalt concrete pavement were extended to KM3-5, including the included beautification work as curve, sidewalk and median installation. KM5-KM6 was only focus on drainage construction, basecourse pavement layer. The cover of drainage both sides have been constructed following with the pavement work.

11. Phine Urban Road subproject: Contractor had speeded up the construction on U-Ditch construction from last year with 100% completed, the new activities were implementing during the period including basecourse construction, DBST pavement for the first layer, household access road, side curve installation and tree plantation, there works will be continuing to Q3 and Q4 2019.

12. Dansavanh Urban road subproject: U-ditch drainage construction was implemented in road section R4 to R1-1 and V-shape drainage was constructed in road section R9 and R9-1 completely. Basecourse layers and DBST pavement were implemented and completed within this period. Household access roads, curve installation, sidewalk, trees and grass planting were

implemented during period as well. Guardrail was installed road section R1 & R9-1 and foundation of electricity poles were installed all sections.

13. Solid Waste Management Subproject: The kay activities were implementing during the period as concrete pavement access road to landfill was almost completed. cell1 excavation, slope cutting and ground compacting, and treatment pond excavation were almost completed as well. Five construction buildings as administration office, staff facility building, recycle building, compost building and sludge treatment building have been constructing, and there were four buildings were completely roof installation, excepted sludge treatment building.

14. Wastewater Management-Houaylongkong subproject: contractor was continuing with HLK channel excavation, produced concrete box, bottom slap concrete pavement, concrete box installation from KM0+150-KM0+630 and erosion protection installation from KM0+55-KM0+90. The road construction both sides for embankment and subbase from KM0+40-KM0+630. In June, contractor also initiative with sheet pile installation and box culvert installation.

C. ENVIRONMENTAL SAFEGUARD PLANS IMPLEMENTATION ARRANGEMENTS

15. The primary management framework overseeing the implementation of the environmental management plan (EMP) is shown in Figure 2 and is defined by the following entities:

a. Ministry of Public Works and Transports (MPWT) who is the executing agency (EA) of the subproject;

b. The Provincial Department of Public Works and Transport (PDPWT) Savannahketh Province who is the implementing agency (IA) of subproject; The

c. Project Management Unit (PMU) formed by the IA to oversee implementation of the subproject;

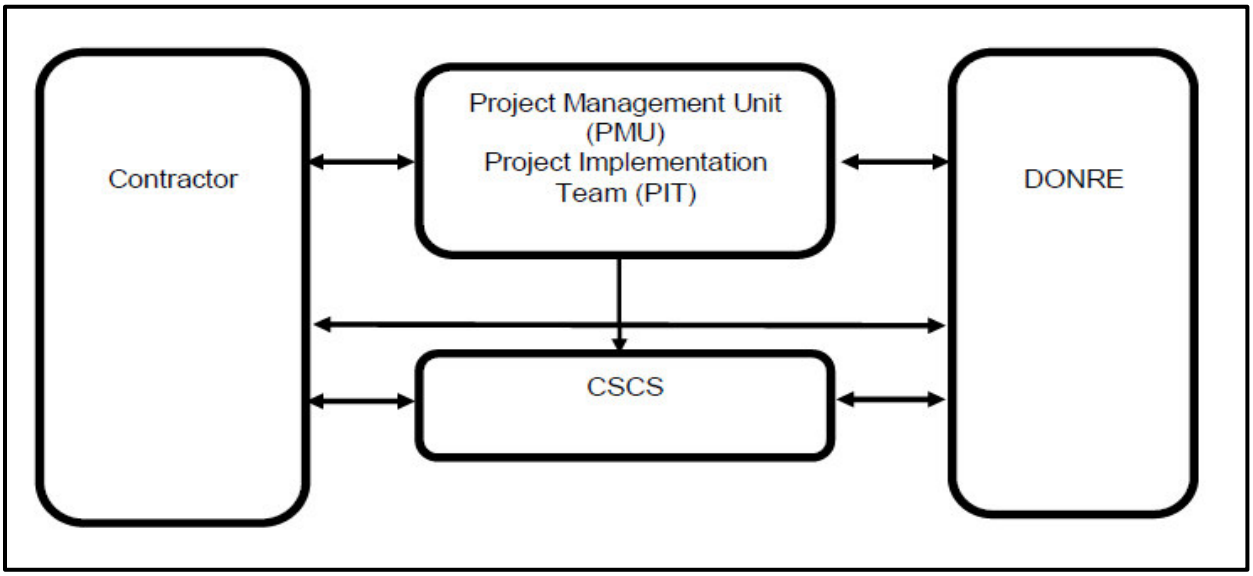
d. The Project Implementation Team (PIT) established in each district to coordinate project activities at the district level.

16. The EA/PMU will appoint Environmental Safeguard Specialist (ESS) who is responsible for overall environment and social safeguard of project and representative of PMU for EMP implementation and monitoring.

17. A Construction Supervision Consulting Services (CSCS) Consultant with environmental expertise will be appointed. The CSCS will be responsible to ensure that the Contractor implements the EMP during the Contract Period, to establish monitoring program, review the EMP, and supervise its implementation. During the construction phase, the Contractor will generally be responsible for implementation of the mitigation measures as specified in the mitigation plan and the CSCS will supervise the implementation.

18. The Contractor's Environmental Health and Safety Officer (EHSO) will be the construction contractor's focal point for all environmental matters and is routinely on-site for the duration of the construction works. The EHSO is an appropriately briefed technical officer (often the CC site engineer). The EHSO carries out regular inspections of the Construction activities in relation to environmental issues, and provides day-to-day advice to contractor personnel about environmental issues. The EHSO will have the authority to instruct any area of the Contractor's operations to implement the requirements of the Environmental Management Plan (EMP).

FIGURE 2. ORGANIZATIONAL CHART FOR EMP IMPLEMENTATION



19. The responsibilities of the IA/PMU are summarized below:

a. Overall responsibility for project implementation and coordination of project activities;

b. Supervise the activities of the Project Implementation Teams organized within the District Authorities;

c. Undertake procurement of goods, works and services including recruitment of consultants for project management support, capacity development and training, independent audit and safeguards monitoring;

d. Develop and adapt a project performance management system in monitoring project activities using indicators and parameters in the design and monitoring framework;

e. Obtain necessary approvals and clearances of environment and resettlement from MONRE prior to awarding of civil works contracts;

f. Manage separate project financial records and accounts, and prepare financial reports;

g. Supervise the implementation of social and environmental safeguards and including timely disclosure of safeguards documents;

h. Supervise the implementation of the Consultation and Participation Plan, Gender Action Plan, and Stakeholder Communication Strategy;

i. Supervise the implementation of the resettlement plans including adequate measures to mitigate adverse resettlement impacts;

j. Ensure that environment management plans and gender considerations are incorporated in the detailed engineering designs and included in the civil works contracts;

k. Undertake regular quality control inspection of project facilities;

l. Manage the handover of project facilities to agencies responsible for operation and maintenance;

m. Prepare and submit quarterly and annual physical and financial progress reports to the EA; and

n. Undertake monitoring of compliance of social and environmental safeguards.

20. The PMU and ESS with assistance from the DED will ensure that the EMP becomes part of the construction contract and with assistance from the CSCS that the EMP is implemented and that the Contractor abides by the EMP. The ESS shall undertake regular site inspections and the results shall be recorded and submitted to the relevant authorities as part of progress reporting.

21. The responsibilities of the PIT are summarized below:

a. Coordinate the implementation of project activities at the district level;

b. Ensure the implementation of the approved work plans and program of activities;

c. Prepare and submit regular quarterly and annual physical and financial progress reports to the PMU;

d. Oversee and coordinate civil works and construction activities;

e. Ensure the implementation of social and environmental safeguards and including timely disclosure of safeguards documents;

f. Ensure the implementation of the Consultation and Participation Plan, Gender Action Plan, and Stakeholder Communication Strategy;

g. Ensure implementation of resettlement plans including adequate measures to mitigate adverse resettlement impacts;

h. Coordinate implementation of environmental management plan, and submit regular monitoring reports to the PMU;

i. Coordinate the updating of the resettlement plans and monitor implementation of resettlement activities; and

j. Undertake monitoring of project activities based on the indicators and parameters in the Design and Monitoring Framework (DMF) and prepare regular reports to the PMU on project achievements.

22. The roles and responsibilities of the Contractor is discussed in the following:

a. Engage an EHSO who will be responsible for the conduct and implementation of safeguards requirements of the Project, the Bank and the GoL, including the CEMP. The EHSO also will undertake the following tasks:

- Manage construction activities with diligence and with the awareness that the important objectives are to protect the environment and to minimize construction impacts, by employing the best control mechanisms, procedures and processes within the limits of their economic feasibility;
- Comply with Lao PDR and ADB and to provide self-monitoring to ensure compliance;
- Implement internationally recognized good practices;
- Provide effective environmental briefing to construction staff;

- Ensure adherence to the EMP throughout the construction stage;
- Efficiently implement measures outlined in the EMP;
- Prepare and submit regular monitoring reports; and
- Conduct regular monitoring and auditing of activities.

23. The reportorial requirements for the environmental safeguards for the Project is described in Table 3 below.

TABLE 3. REPORT REQUIREMENT FOR EMP MONITORING

REPORT	FREQUENCY	PURPOSE	FROM	TO
Contractor's Environmental Monitoring and Grievance Report	Monthly	Compliance to EMP/CEMP	Contractor	CSCS, PMU
Quarterly Project Progress Report	Quarterly	Confirm EMP Compliance or Issues	CSCS	PMU/PCU
Semi-Annual Environmental Safeguards Monitoring Report	Semi-annually	Adherence to Environmental Covenants	CSCS/PMU	PoNRE/ADB

D. STATUS OF ENVIRONMENTAL SAFEGUARDS DOCUMENTS

24. Table 4 presents the status of the requisite environmental safeguards reports and documents as of 30 June 2019.

TABLE 4. STATUS OF ENVIRONMENTAL SAFEGUARDS DOCUMENTS (EMPS AND IEES)

NO	ENVIRONMENTAL SAFEGUARD DOCUMENT	STATUS OF DOCUMENT
1	IEE of GMS-EWEC Town Development Project	Updated IEEs for the sub-projects submitted to ADB on 29 November 2018. And it was disclosed in bank website.
2	7 EMPs for each subproject	All 7 EMPs were approved by ADB as principle, however, there are disclosed in bank website only 6 EMPs as Fa Ngum Road, Kaysone Phomvihane road, Phine urban road, Dansavanh urban road, KP solid waste management and Mekong River Embankment subproject, except EMP-KP Wastewater Management-HLK is required to be updated with DEWAT the addition construction proposed during ADB mission on March 2019. The DEWAT DED is under revision and expected to finalize in July.
3	CEMPs and OHSPs of contractor	CEMP & OHSP of Fa Ngum Road, Kaysone Phomvihane road, Phine urban road, Dansavanh urban road, KP solid waste management, and KP-Wastewater-HLK subproject were approved, the remaining only CEMP and OHSP of contractor from Mekong River Embankment because notice commence June 25, 2019.
4	GMS-EWEC TDP-Semiannual Environment Safeguard Monitoring Report.	GMS-EWEC TDP-Semiannual Environment Safeguard Monitoring Report has regular submitted and reports were disclosed on ADB website. The last semiannual environment monitoring report was disclosed on February 2019.
5	Quarterly Environment Safeguard Monitoring report	QESMR is regular submitted with technical progress report, the last QESMR was submitted as attachment with technical progress report Q1, 2019.
6	Environment Quality Monitoring Report	Environment quality monitoring report has three main sources as dust and noise level quality monitoring from 4 road and drainage construction subprojects as combine Fa Ngum, Kaysone Phomvihane, Phine Urban Road and Dansavan urban road subprojects; surface water quality monitoring from KP Wastewater Management HLK and Ambient air, dust, surface water, ground water quality monitoring from KP-Solid Waste Management Subproject. All subprojects were regularly conducted sample collection and report.

NO	ENVIRONMENTAL SAFEGUARD DOCUMENT	STATUS OF DOCUMENT
7	Month Environment Monitoring Report	So far, all 5 subprojects have regular submitted their MEMR as monthly basic for mobilization contractors, except the contractor for KP-solid waste did not submit MEMR to CSCS.

III. ENVIRONMENTAL PERFORMANCE MONITORING

A. STATUS OF EMP IMPLEMENTATION (MITIGATION MEASURES)

25. Table 5 is presented the status of each subproject relevant to the implementation of the approved EMP. Table 6 is presented the status of occupational health and safety performance in each subproject from the contractor while Table 7 is presented the issues for further action which included both environment and occupational health and safety. The table 5, 6 & 7 still not include the Mekong River Embankment Subprojects, because it was notice commenced June 25, 2019, and there is nothing to report on it.

26. The abbreviation that applied are referred to Kaysone Phomvihane Road Construction Subproject (KPRC), Fa Ngum Road Construction Subproject (FNRC), Phine Urban Road Construction Subproject (PURC), Dansavan Urban Road Construction Subproject (DURC), Kaysone Solid Waste Management Subproject (SWMS) and Kaysone Phomvihane Waste water Management-Houay Long Kong subproject (HLKS).

TABLE 5. COMPLIANCE WITH EMP REQUIREMENTS (ENVIRONMENTAL PERFORMANCE)

EMP REQUIREMENTS	KPRC	FNRC	PURC	DVRC	SWMS	HLKS
PRE-CONSTRUCTION PHASE						
Appointment of EHSO	Mr. Phonepaseuth Khounluexa (020 95318896)	Ms. Phonethip Phetkhounphone (02077151111)	Mr. Keolamphone (020 99884421)	Mr. Somlith Puiyavong (030 9898062)	Mr. Souvanh Inthilat (02091375302)	Mr. Souvanhthone Doungphachanh (02022667751)
CEMP Development and Approval	Approved March 2018	Approved April 2018	Approved March 2018	Approved March 2018	Approved December 2018	Approved April 30, 2019
OHSP Development and Approval	Approved March 2018	Approved April 2018	Approved March 2018	Approved March 2018	Approved January 2019	Approved April 30, 2019
Pre-construction consultation	Conducted	Conducted	Conducted	Conducted	Conducted	Conducted
Baseline Measurements for TSP and PM10 and Ambient Noise	Conducted in June 2018				Applied ECA results	Not required
Baseline Sampling for Surface Water Quality	Not required	Not required	Not required	Not required	Applied ECA results	Conducted in November 2018
Baseline Measurement of NOx/Sox/CO and Baseline Sampling for Groundwater Quality	Not required	Not required	Not required	Not required	Applied ECA results	Not required
Grievance Redness Mechanism Established	Leaflets has been distributed to local people. Sign Posts containing Contact has been installed. Orientation on the GRM Process has been conducted through the requisite with public consultations process. Grievance Lodging and Recording System established.					
Obtain Environmental license for borrow pits	Environmental Certificate secured				Using material from cell for refill material	Same borrow pit with KP road subproject
CONSTRUCTION PHASE						
AMBIENT AIR QUALITY						
Water unpaved areas to mitigate generation of dust	Complied Accordingly Contractor conducts watering six (6) times a day. The most roads are paved	Complied Accordingly Contractor conducts watering six (6) times a day for section F1 and four (4) times a day for sections 2A and 2B, only 2A section without pavement	Complied Accordingly Contractor conducts watering three to four times a day. Required to increase to 6 times per day in the dense community, pavement is completed	Complied Accordingly Contractor conducts watering three to four times a day.	Complied Accordingly Contractor conducts watering twice day.	Complied Accordingly Contractor conducts watering twice day.

EMP REQUIREMENTS	KPRC	FNRC	PURC	DVRC	SWMS	HLKS
Require contractor to cover material with tarpaulin while in transit to avoid spillage of material	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
Impose speed limits on construction vehicles	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
Regular maintenance on construction machineries and vehicles to control air emission during operation	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
ENVIRONMENTAL SAFEGUARDS MONITORING REPORTORIAL REQUIREMENTS						
Contractor is required to submit report to CSCS before 28th each month	Complied accordingly	Complied Accordingly	Complied accordingly	Complied Accordingly	Not comply	Complied Accordingly
Air Quality and Ambient Noise Quarterly Monitoring	Complied Accordingly April 2019	Complied Accordingly April 2019	Complied Accordingly April 2019	Complied Accordingly April 2019	Complied Accordingly (TSP/PM10) December 2018	NA Not require
Surface Water Quality Quarterly Monitoring	NA	NA	NA	NA	Complied Conducted December 2018	Complied accordingly March 2019
AMBIENT NOISE MANAGEMENT						
Limit construction activities, particularly operation of noise generating equipment at night	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
Position any stationary equipment that produce high noise level far from sensitive receptor	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
Require drivers to minimize blowing of horn and comply to speed limits	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
SURFACE WATER QUALITY, SOIL EROSION AND STAGNANT WATER MANAGEMENT						
All irrigation canals and channels to be protected the same way as rivers, streams, and lakes.	Complied Accordingly	Complied Accordingly	Complied accordingly	Complied Accordingly	Complied Accordingly	Complied accordingly
No washing or repair of machinery near surface waters.	Complied Accordingly	Complied Accordingly	Complied accordingly	Complied Accordingly	Complied Accordingly	Complied
Where relevant, e.g. at borrow pits establish protective coffer dams, berms, plastic sheet fencing, or silt curtains should be placed between all earthworks and surface waters.	Complied Accordingly	Complied Accordingly	Partial/ Box culvert was impacted to local land as erosion	Complied Accordingly	Complied Accordingly	Complied Accordingly

EMP REQUIREMENTS	KPRC	FNRC	PURC	DVRC	SWMS	HLKS
Earthworks not permitted during the rainy season and should be conducted during dry weather.	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
Oil and fuels should be stored and handled well away from surface waters.	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
SOLID AND HAZARDOUS WASTE MANAGEMENT						
Contractor is required to provide garbage bins with labels and categorize solid waste	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
Disposal sites must be defined with government approval areas	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
All construction sites are required tidy after work and cleanliness	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
Contractor is required to provide Hazardous Waste container: for Collection, storage, transport, and disposal of hazardous waste such as asphalt, used oils, gasoline, paint, and other toxics must follow GoL regulations	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Partial /require to install hazardous container at worker camp
TREE AND VEGETATION MANAGEMENT						
Restrict tree and vegetation removal within RoWs and no unnecessary cutting of trees.	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
Contractor is required to submit Tree plantation plan for RoWs and tree species must be native species	Complied accordingly	Complied Accordingly being planted in July	Complied accordingly/ being Planted in July	Complied accordingly planted in June	Plan being prepared	Not required
PUBLIC SERVICES AND UTILITIES						
Temporary bridge or access road must be provided during construction	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
Informal consultation with local people regarding disruption on construction, power and other utilities	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
Contractors require to plan with utility company removal and re-installation of utilities	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
ASPHALT PRODUCTION, TRANSPORT AND UTILIZATION						

EMP REQUIREMENTS	KPRC	FNRC	PURC	DVRC	SWMS	HLKS
Locate asphalt plant at approved sites and well away from all settlements, cultural areas, sensitive (e.g., schools, hospitals), and ecologically important areas.	Complied Accordingly	Complied accordingly	Complied accordingly	Complied accordingly Re-organized	No asphalt work	No asphalt work
Contractors must be well trained in handling and application of bitumen	Complied Accordingly	Complied Accordingly	Complied accordingly	Complied accordingly	No asphalt work	No asphalt work
Bitumen should only be spread on designated road beds and all spills should be immediately cleaned	Complied Accordingly	Complied accordingly	Complied accordingly	Complied according	No asphalt work	No asphalt work
CULTURAL PROPERTY OR VALUES AND CHANCE FINDS MANAGEMENT						
Ensure protection of cultural and religious sites during construction	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
Chance-finds of relics should be reported immediately to site supervisors.	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly
Upon chance find all work should immediately cease, and PMU notified.	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly	Complied Accordingly

Table 6. Occupational Health and Safety Performance

REQUIREMENTS	KPRC	FNRC	PURC	DVRC	SWMS	HLKS
WORKER'S HEALTH AND SAFETY						
PPEs requirement for workers such as helmet, boots, vest, mask, gloves.	Complied accordingly	Complied accordingly	Complied according	Complied accordingly	Complied accordingly	Some workers not properly week PPEs
Worker's facilities with appropriate amenities such as clean drinking water, separate women and men toilets and good accommodations.	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly
Regular safety work orientation	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Non-Compliance Advice contractor to conduct regular safety orientation	New sub-contractor is partial complied Advise contractor to regular organize toolbox meeting
Health, STD, HIV training or seminar	Complied accordingly	Non-Compliance	Non-Compliance	Complied accordingly	Non-Compliance	Non-Compliance

REQUIREMENTS	KPRC	FNRC	PURC	DVRC	SWMS	HLKS
CONTINGENCY AND EMERGENCY PREPAREDNESS REQUIREMENTS						
Contact details of nearest emergency services	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly
Fire extinguisher available in site office and facilities	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly
First Aid kits in construction sites, camps	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly
Emergency responsible team/person	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly
PUBLIC HEALTH AND SAFETY AND TRAFFIC MANAGEMENT						
STD, HIV, Gender seminar for communities near work areas	Complied accordingly	Noncompliance No Expert	Noncompliance No Expert	Complied accordingly	Noncompliance No Expert	Noncompliance No Expert
Warning light and reflectorized signages should be installed in the construction	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	No requirement	No requirement
Closed sections/ detour areas defined and public notified.	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	No requirement	No requirement
Standardized signages installed	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	partial not follow the standard
Working and traffic zone must be defined and clearly demarcated in plan	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	NA	NA
Flag persons should be assigned in all work areas.	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Not suitable case	Not suitable case
Bollards and caution tape installed around work areas.	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Partial there many risk areas are necessary to install safety devices
Accidents should be properly reported.	Non-Compliance Two cases were not report	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly
Contractor is required to follow regulation of Lao Gov and IFC EHS guidelines	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly	Complied accordingly

Table 7. Issues for Further Action

ISSUES	KPRC	FNRC	PURC	DVRC	SWMS	HLKS
Soil Erosion on private land that caused from box culvert construction			Stone riprap is require to install with grass planting at the top embankment			
			Under discussion/ and designed for permanent erosion protection			
Waste water management						Waste water is required to be treated before release to channel or stream
						Corrective action has been set out and timeline for septic tank installation and regular release to HLK cannel start from July 2019
						The new engineer team/work camp is poorly managed (Fuel, engine oil, garbage and soil of construction)
						Corrective action has been set, if contractor not comply, IPC will not process in July 2019
Monthly EMR					MEMR should be submitted monthly basic	
					The corrective action has been set	
Road safety	Increase road safety devices where are incomplete open drainage					Increase safety device along the road and channel with adequate warning devices
	Corrective action was provided & current implementing					Corrective action is provided & current implementing
Safety, STD, HIV awareness raising					Contractor has not oriented safety culture work to workers regularly	
					Advise contractor to conduct awareness raising on health & safety regularly, and communicate with other contractors including public health or hospital for STD, HIV and other communicateable disease training or awareness raising.	

B. ENVIRONMENT QUALITY MONITORING

27. Monitoring requirements are set out in detail in the EMP. The environmental quality monitoring program will be conducted on two levels (i) compliance monitoring and (ii) baseline and conduct of monitoring to determine the extent of variations and changes in the levels of pollutants in the environment and other parameters and indicators considering the implementation or operation of the project.

28. This session is presented the 4 main environment quality monitoring report as second dust and noise monitoring report of 4 subprojects during July 7-12, 2019; the third dust and noise monitoring in 4 subproject during April 1-6, 2019; result of first monitoring environmental quality in KP solid waste management subproject which included ambient air, dust, surface and ground water during December 18-21, 2018 and first environment quality monitoring in Waste Water Management-HLK subproject that focus only surface water in Houay Long kong during March 12, 2019.

1. Second Air Quality and Noise Level Monitoring 4 urban road subprojects.

29. The four (4) road and drainage construction in urban areas sub-projects namely: Kaysonephomvihane Road, Fa Ngum Road, Phine Urban Roads and Dansavan Urban Roads sub-projects were required to conduct baseline measurements and quarterly monitoring of air quality (TSP and PM10) and ambient noise levels. Two sampling/monitoring stations for each sub-project were established for the baseline measurements and quarterly monitoring. The details of the sampling/monitoring stations for each sub-project are described in Table 8 below.

TABLE 8. DESCRIPTION OF THE SAMPLING/MONITORING STATIONS, AIR QUALITY AND AMBIENT NOISE LEVELS

MONITORING STATIONS	COORDINATES OF SAMPLING/MONITORING STATIONS		DISTANCE FROM CONSTRUCTION AREA (M)	REMARKS
	AIR QUALITY	AMBIENT NOISE		
Blind People Office, Fa Ngum road	48Q 0474583E 1832199N	48Q 0474572E 1832218N	5.00	This station is located near a hospital and the construction area.
Justice Department, Fa Ngum road	48Q 0475162E 1832281N	48Q 0475147E 1832283N	7.00	This station is located near the government center and the road construction area.
Thippanya Kindergarten-Elementary School, Kaysonephomvihane road	48Q 0475185E 1830715N	48Q 0475182E 1830682N	5.00	This station is located near a school, green area and settlement area and the construction site.
Xaysombath Technology College, Kaysonephomvihane road	48Q 0475374E 1832613N	48Q 475395E 1832637N	7.00	This station is located near a school and settlement area and the construction site.
Phine District Government Office, Phine urban road	48Q 0609176E 1828441N	48Q 0609185E 1828404N	5.00	This station is located near a settlement area and the construction site.
Phine district Hospital, Phine urban road	48Q 0608220E 1827769N	48Q 0608213E 1827782N	20.00	This station is located near a hospital and the construction area.

MONITORING STATIONS	COORDINATES OF SAMPLING/MONITORING STATIONS		DISTANCE FROM CONSTRUCTION AREA (M)	REMARKS
	AIR QUALITY	AMBIENT NOISE		
Dansavanh Village Office	48Q 0668255E 1838841N	48Q 0668255E 1838841N	50.00	This station is located near a settlement area and the road construction site.
Dansavanh Village (No.11711, Snooker club)	48Q 0668202E 1838640N	48Q 0668202E 1838640N	5.00	This station is located near a settlement area and the road construction site.
Dansavanh Village (R-3)	48Q 0668271E 1838709N	48Q 0668263E 1838716N	3.00	This station is located near a settlement area and the road construction site.
Dansavanh Bus station (R-2)	48Q 0668271E 1838709N	48Q 0668005E 1838693N	5.00	This station is located near a bus station and the road construction area.

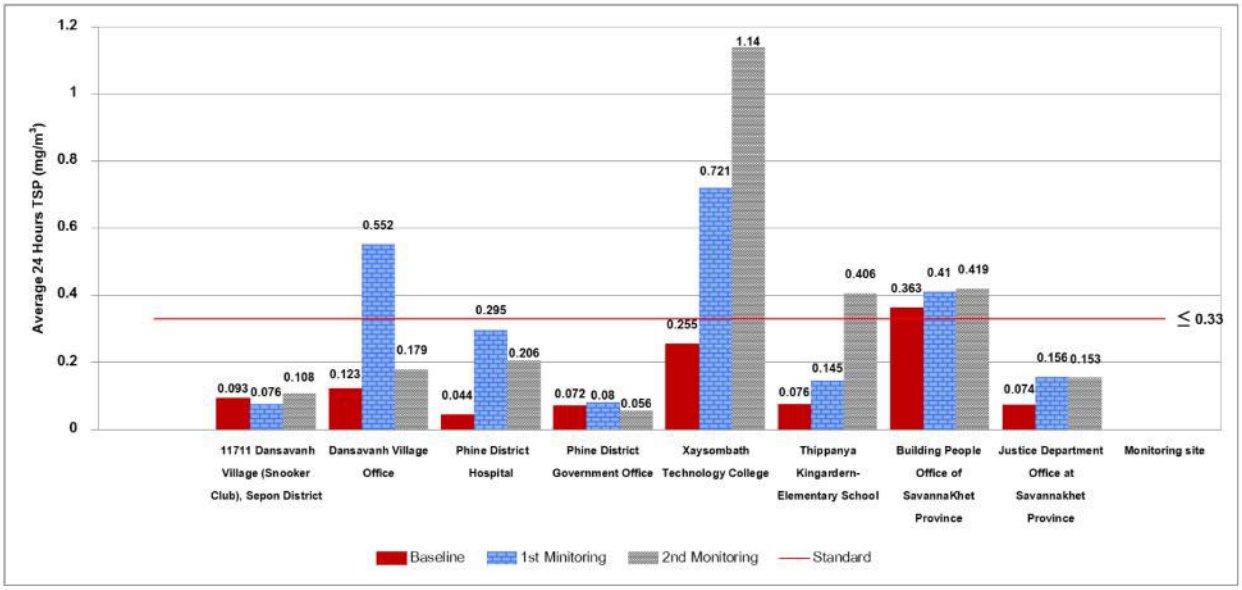
Note: Lao-UAE Laboratory and Environment Service Co.,Ltd has been engaged for the conduct of the air quality and ambient noise baseline measurements and quarterly monitoring for the four (4) road and drainage construction in urban areas sub-projects.

30. Baseline measurements were conducted during June 23-28, 2018, the first monitoring was conducted during October 1-6, 2018. The baseline & previous monitoring will be presented with the third monitoring result as well, for providing the comparing the information.

31. The first quarterly environmental quality monitoring was been conducted on 01-02 October 2018 for Dansavan Urban Roads sub-project; 02-03 October 2018 for Phine Urban Roads sub-project; 04-05 October 2018 for Kaysonephomvihane and 05-06 October 2018 for Fa Ngum Road sub-project. The results of the Baseline Measurements and 1st Quarterly Environmental quality Monitoring are presented in Figures 3-6.

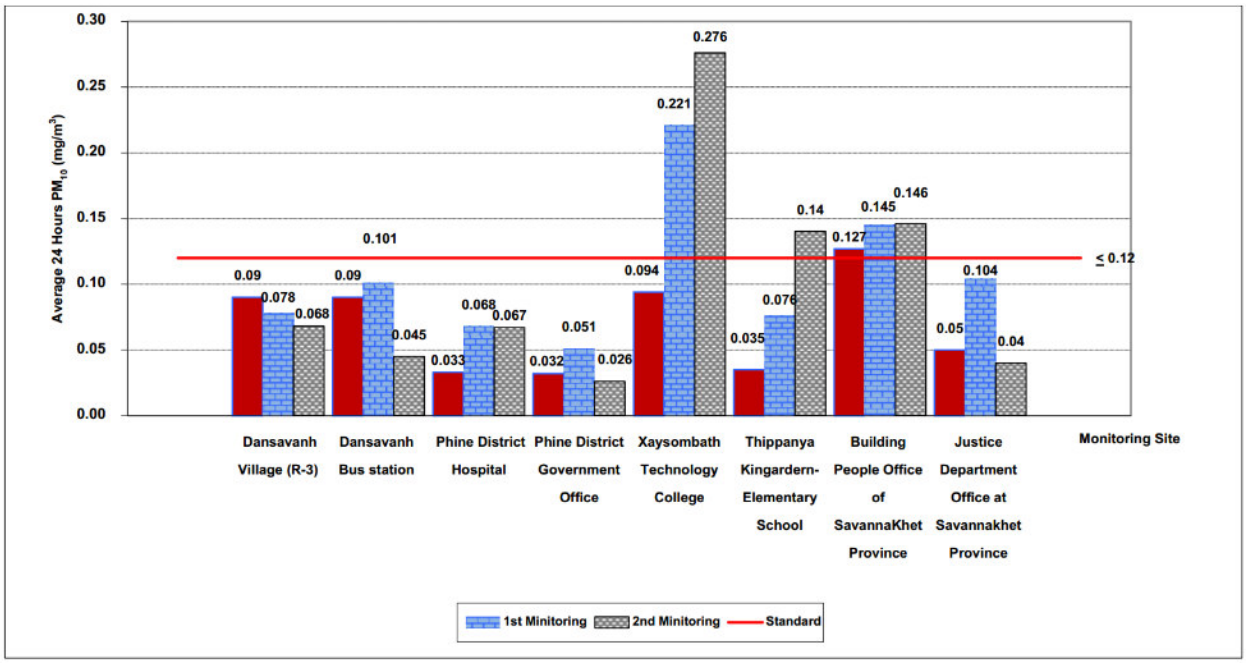
32. The second monitoring has been collected during 07-08 January in Dansavan urban road subproject, 08-09 January in Phine Urban road subproject, 10-11 January in Kaysonephomvihane road and 11-12 in Fa Ngum road subproject detail result of monitoring in the figure below:

FIGURE 3: TSP PARAMETER MONITORING IN 4 SUBPROJECTSS



33. This monitoring is second time for monitoring TSP, we found that there are three locations were absolutely higher than national standard and previous monitoring. Two locations are located in Kaysonephomvihane road subprojects at the Xaysombath Technology Collage and Thipanya Kindergarten school, and another location at the disable center in Fa Ngum road. During the monitoring, these areas were scarified/cleared with unpaved road, in January the weather in savannakhet was so drought with windy, eventual contractors spayed water 6 times per day, but the result still higher than national standard and it was higher than previous monitoring, on the other hand these locations, there are many vehicles that crossed all the times, included night time as well. The contractors obtain the watering only on daytimes, but samples collection was conducted 24 hours. We have informed and consulted for ensure that these areas are required to get wet all the times during daytimes. We still keep six times per days in this areas, and commented contractors to pave these areas as soon as possible. Dansavan and Phine urban road subproject, the result clearly shows that TSP parameter is lower than national standard and previous monitoring.

FIGURE 4: PM10 PARAMETER MONITORING IN 4 ROAD CONSTRUCTION SUBPROJECTS



34. The result of PM10 monitoring is clearly shown the similar status of TSP monitoring, as the reasons has been stated above and same three locations that results are higher national standard and previous monitoring with TSP. The locations, where were higher than national standard, previous monitoring and baseline at Xaysombath college and Thippanya Kindergarten in Kaysone Phomvihan road subproject and Blind Disability center at Fa Ngum Road subproject.

35. The natural of PM10 characteristic is not different from TSP, the PM10, it is dust that smaller size, which equal 10 micron grams of dust size, where are generated from unpaved road, windy, or fast driving. The locations of these three locations are located with unpaved road, highly traffic and open space, where are affected from wind. Eventual contractor had watered in the construction areas 6 times per day, the PM10 result still higher than national standard. In the same time, during monitoring, the weather was hot, drought and wind as well, therefore result of monitoring of PM10 in these three locations are higher than national standard.

36. CSCS also raised this issue to contractors, and contractor also agreed that those areas, and other sensitive receptors will be paid attention on watering and plan for completing the pavement as soon as possible.

FIGURE 5: AMBIENT NOISE LEVEL (LA_EQ24) IN 4 ROAD CONSTRUCTION SUBPROJECTS

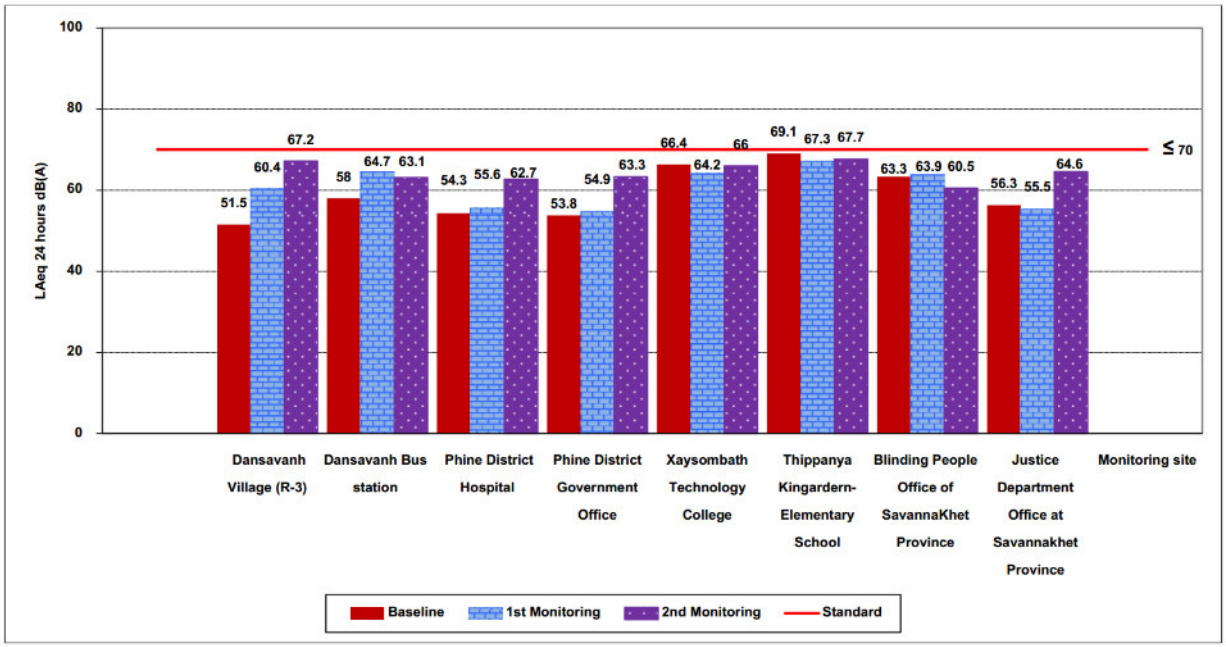
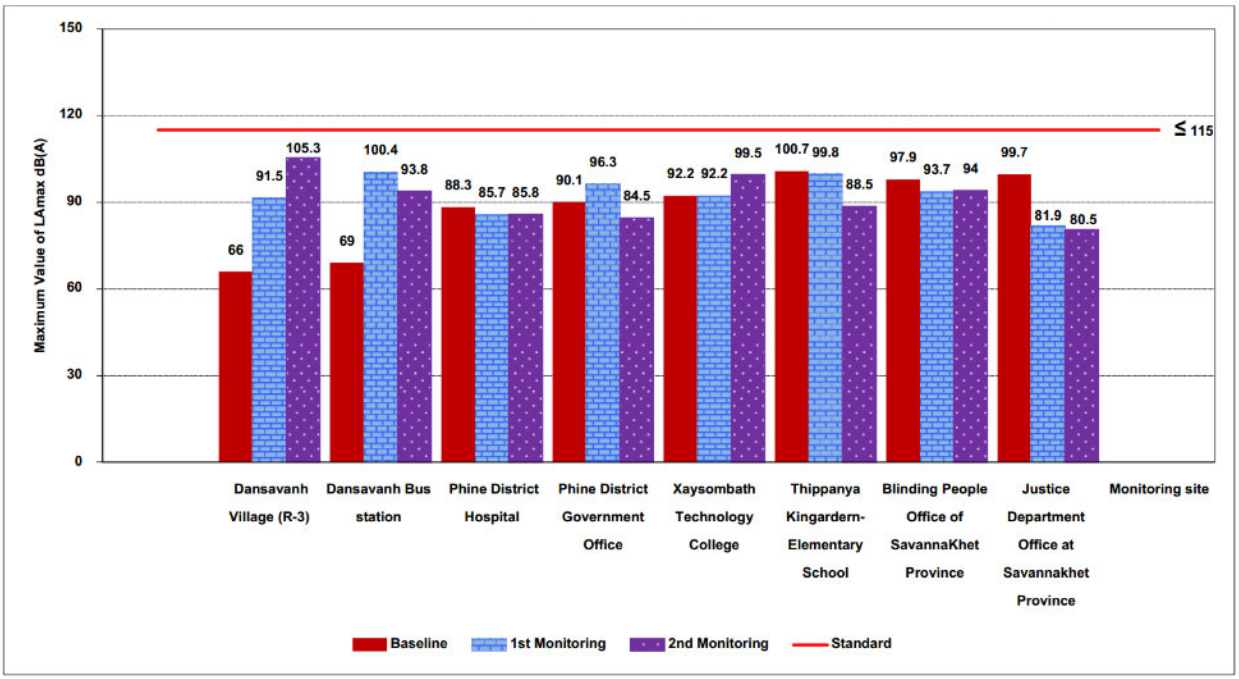


FIGURE 6: AMBIENT NOISE LEVEL (LA_MAX) IN 4 ROAD CONSTRUCTION SUBPROJECTS



37. The result of noise level monitoring during the construction particular the January 2019, the same period with dust monitoring, the figure 3 & 4 clearly show that noise level both Noise

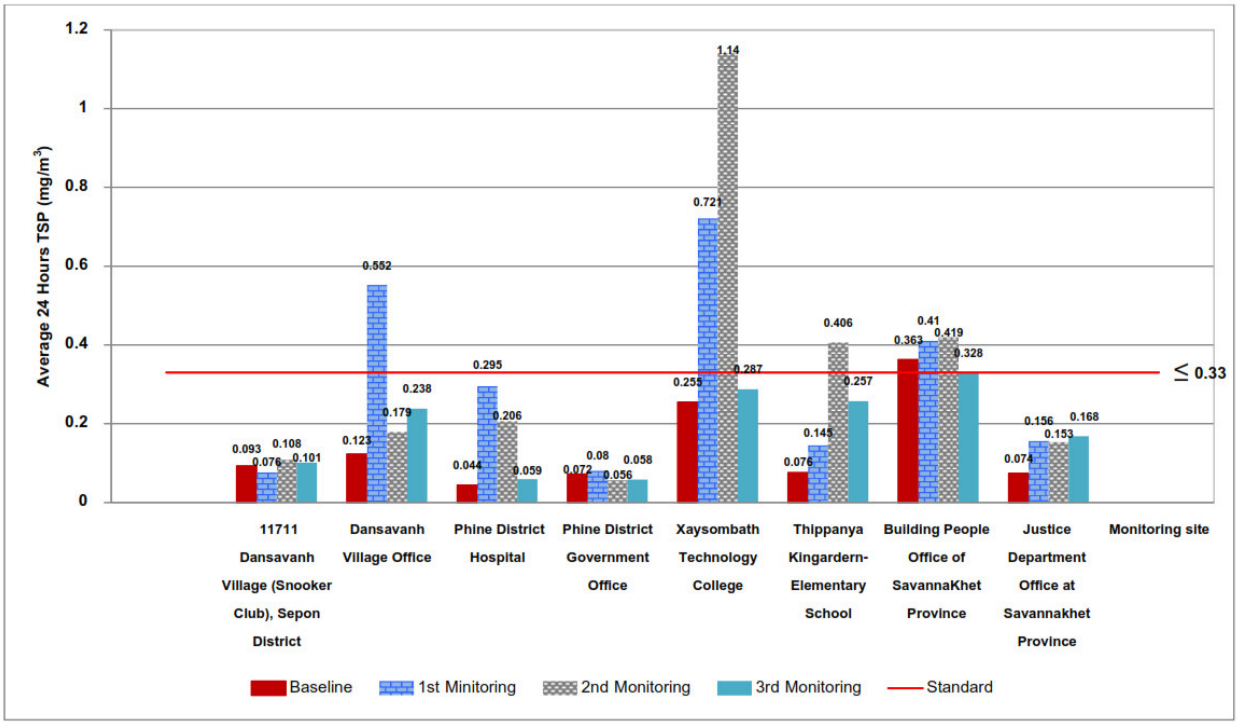
LA_max and Noise Level LA_eq24 under the national standard, that is no any significant or concern regarding the noise pollution from construction phase in these subprojects.

2. Third Air Quality and Ambient Noise in 4 Urban Road Construction

38. The third dust TSP, PM10 and noise level monitoring was conducted during April 1-6, 2019, there are similar to previous monitoring, which collected two samples per each parameter in each subproject as TSP, PM10, and noise level. Damdavan uban road samples were collected during April 1-2, 2019; in Phine urban road subproject, the samples were collected during April 2-3, 2019; in Kaysone Phomvihane Road Subproject, the samples were collected during April 4-5, 2019 and in Fa Ngum road subproject, samples were collected during April 5-6, 2019.

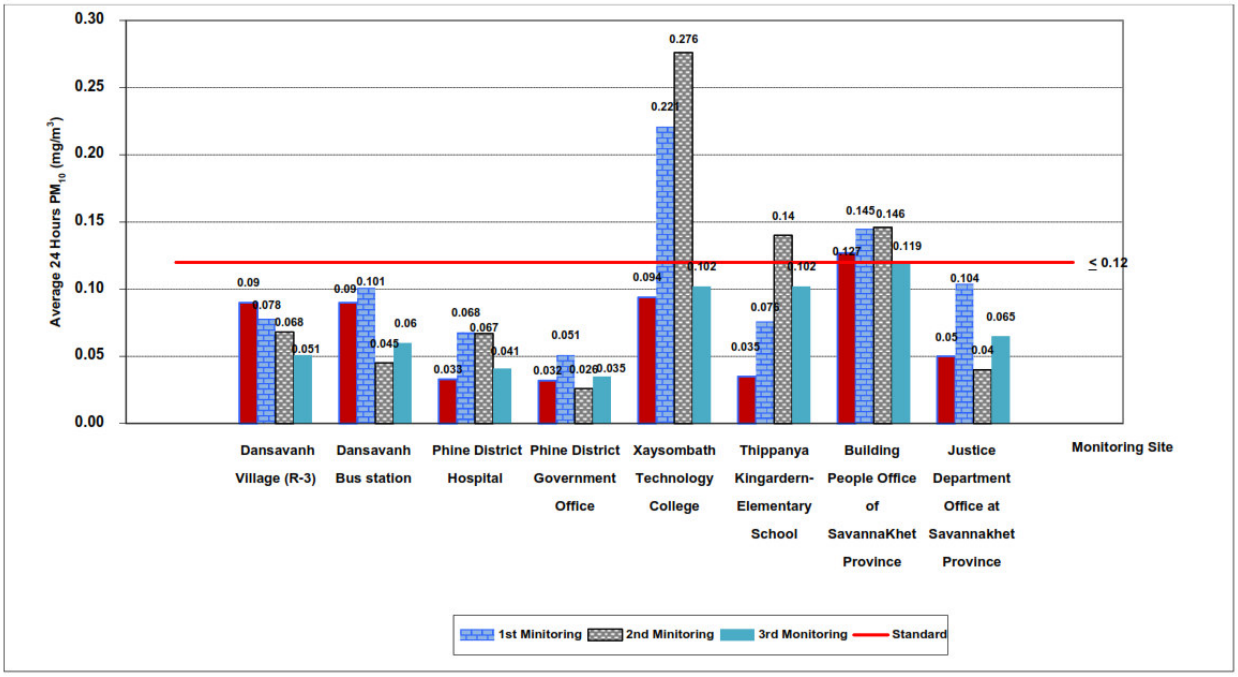
39. Figure 7 is provided results of TSP monitoring with comparing with previous monitoring, baseline and environment national standard. It clearly shows that all result of samples are under the national standard. It compared with previous monitoring, it was lower result and the most also lower than Lao PDR Environment National Standard.

FIGURE 7: TSP RESULT OF THIRD MONITORING AND COMPARING WITH PREVIOUS MONITORING



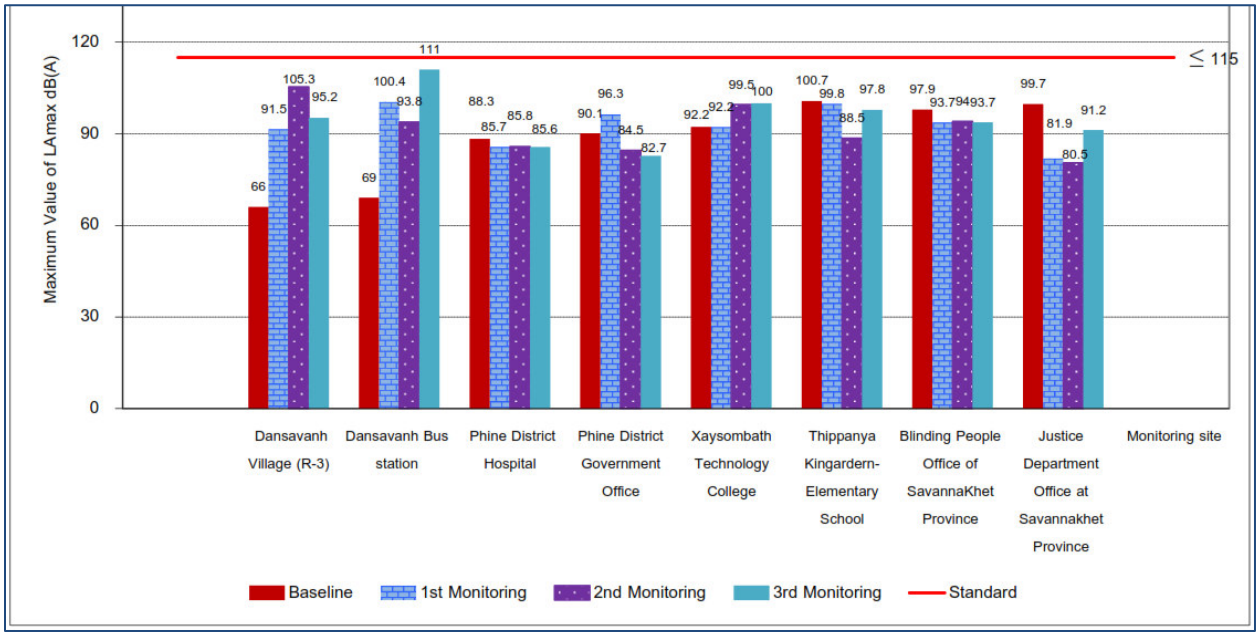
40. Figure 8 is provided result of PM10 during the third monitoring, the figure is also included the previous monitoring, baseline and national standard. Results of all 8 samples from 8 locations in 4 subprojects are clearly indicated that values are under national standard and lower than previous monitoring. The highest result of PM10 only sample from Blind Building at Fa Ngum road, equal 1.19 that still under the national environment standard. There are 5 samples of 8 total that PM10 dusts quantities are higher than baseline, it not surprise, because baseline was established during the June 2018, there are clouded and raining during baseline establishment. Result of PM10 for all locations are significantly decreased of the MP10 quantities in the construction areas as mentioned above, the most road sections are paved and dust control by watering is regular as 4-6 times per day.

FIGURE 8: PM10 RESULTS OF THIRD MONITORING AND COMPARING TO PREVIOUS MONITORING



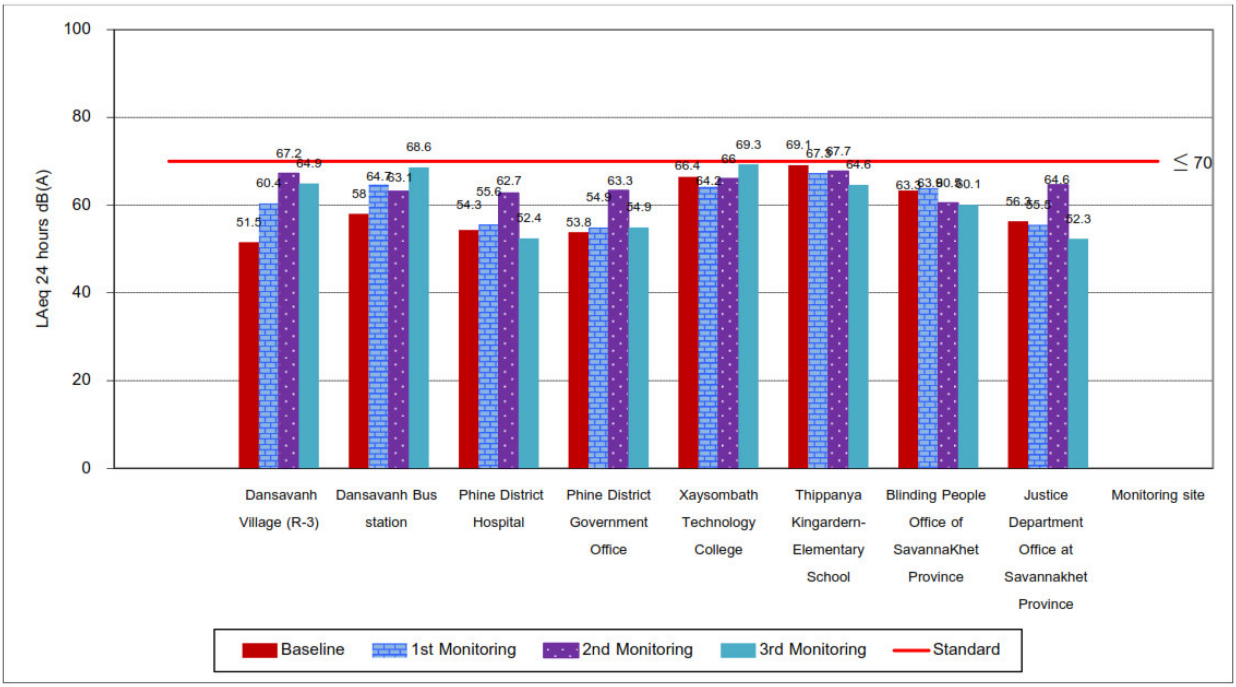
41. The figure 9 is results of third monitoring on ambient noise level (LA_Max) in 8 samples from 4 subprojects, each sample was not significant impact or over national standard equivalence. The highest LA_Max located in the near Bus station at the Dansavan urban road subproject, however, it still under the national standard, it not only impact from construction activities, but also nearby the regular traffic from the bus station and al0ong the national highway No. 9 as well.

FIGURE 9: LA_MAX RESULT OF THIRD MONITORING AND COMPARING WITH PREVIOUS MONITORING



42. The figure 10 is provided detail of third monitoring result on ambient noise level as noise disturbing an average 24 hours as continuously. All results from 8 samples in 4 subprojects are under the national standard, the noisiest from an average 24 hours is 69.3 dB at Xaysombath Technical College in Kaysone Phomvihane road subproject. This location is nearby access road to college, where are regular in-out of many motorbikes, cars and there is car washing nearby sampling location, there was not only affected from construction activities, there are many sources of noises, however, all results still under the national standard, there is not much concern regarding the noise from construction activities.

FIGURE 10: LAEQ24HS RESULT OF THIRD MONITORING AND COMPARING WITH PREVIOUS MONITORING



3. Ambient Air Quality, Surface and Ground Water Monitoring of KP SWM

43. The Kaysonephomvihan Solid Waste Management sub-project was also required to conduct baseline measurements and quarterly monitoring of ground and surface water quality at two identified stations within the project area. It was subsequently decided that the results of the Environmental Compliance Audit (ECA) be utilized to establish the baseline levels of the ambient air quality in the sub-project area.

44. The solid waste management subproject has hired Lao-UAE as subcontractor to conducted environment quality monitoring ambient air quality two locations, groundwater quality three locations and surface water two locations. The first monitoring has conducted during 18-21 December 2018. the table 9 & 10 show the result of monitoring with compared to baseline and national environment standard. The baseline of environment quality for solid waste management subproject used information from ECA during 2017.

45. The result of monitoring parameters, all parameters still not much change from the baseline, the construction was not affected to the environment quality parameter, because the most construction activities in the new location or nearby existing landfill, which is not influence

to the parameter of the environment quality parameter. All parameters are depended on the performance of the landfill operation in the existing landfill.

46. Based on the observing the environment quality impact, the construction phase or construction activities are not much impacted to the environment quality parameters, thus construction phase is not necessary to conduct the environment quality monitoring during the construction, but it is very importance to conduct during the operation phase. The new landfill construction is located outside of the existing landfill, it is nearby existing landfill. Thus, It is confirmed that environment quality monitoring in the ECA and first monitoring results as below, it is not related to construction activities such cell 1 excavation, structure building and access road construction.

TABLE 9: GROUNDWATER MONITORING RESULT OF KP SWM

No.	Parameter	1st MR (GW07)	Baseline (GW07)	1st MR (GW01)	Baseline (GW01)	1st MR (GW03)	Baseline (GW03)	Standard
1	pH (-)	3.94	6.21	4.94	6.21	4.48	6.52	6.5-9
2	Temperature (°C)	28.1	25	26.1	25	26.6	25	-
3	Turbidity (NTU)	<0.1	5.3	70	12.5	1.1	4.4	< 20
4	Solids, Total Suspended (mg/L)	<5	3.5	86.5	17.5	<5	7.2	< 1,200
5	Biochemical Oxygen Demand(mg/L)	<2	< 1	<2	<1	<2	1	-
6	Chemical Oxygen Demand(mg/L)	7.5	20	7	12	5	24	7-11
7	Oil and Grease(mg/L)	<3	< 0.3	<3	<0.03	<3	<0.03	-

TABLE 10: SURFACE WATER QUALITY MONITORING

No.	Parameter	1st MR SWS1.1	Baseline SWS1.1	1st MR sws03	Baseline SWS03	Standard
1	pH (-)	7.98	6.1	8.198	6.2	6-8
2	Temperature °C	24.8	21	24.9	22	-
3	Turbidity (NUT)	40	4.6	29	2.4	-
4	Solids, Total Suspended (mg/L)	42.2	15.3	29.1	18.5	≤25
5	Biochemical Oxygen Demand (mg/L)	<1	9	<1	10	-
6	Chemical Oxygen Demand (mg/L)	11	24	13.1	32	5-7
7	Oil and Grease (mg/L)	< 3	< 0.3	< 3	< 0.3	-

TABLE 11: AMBIENT AIR QUALITY MONITORING

Parameter	1st MR SP8	Baseline SP8	1st MR SP2	Baseline SP2	**Standard**
Average 1 hour Sulfur Dioxide (ppm)	0.0015	< 0.00355	**0.0015**	**<0.00355**	**< 0.13**
Average 24 hours Sulfur Dioxide (ppm)	0.0009	< 0.00355	**0.0009**	**<0.00355**	**< 0.05**
Average 1 hours Nitrogen Dioxide (ppm)	0.0064	0.175	**0.017**	**0.257**	**< 0.11**
Average 1hour Carbon Monoxide (ppm)	0.0015	4.05	**0.002**	**9.96**	**< 30**
Average 8 hours Carbon Monoxide (ppm)	0.00115	4.05	**0.0016**	**9.96**	**< 0.9**

Average 24 hours TSP (mg/m3)	0.344	N	**0.146**	**N**	**< 0.33**
Average 24 hours PM10 (mg/m3)	0.122	0.1	**0.063**	**0.15**	**< 0.12**

4. Surface Water Quality Monitoring in HLK subproject

47. Kaysonephomvihan Wastewater Management-HLK sub-project was required to conduct baseline sampling for surface water quality at two (2) locations as stated in the approved EMP. However, during the ADB Mission of November 2018, it was recommended that baseline sampling should be conducted at three (3) locations at the upstream of the sub-project site, middle of channel near the sub-project site and downstream of the sub-project site. Table 10 presents the results of the compare result monitoring for the Kaysonephomvihan Wastewater Management-HLK sub-project on March 12, 2019. As define in the EMP, the quarterly monitoring will be conducted the main parameters as BOD, TSS, COD, Turbidity, Oil & Gases as presents in table 10, in the column first monitoring for three locations as upstream, middle and downstream.

TABLE 12. RESULTS OF BASELINE SAMPLING FOR SURFACE WATER BASELINE

Parameters	Unit	Upstream		Middle		Downstream		Detection limit	Standard *
		Baseline	1st Monitor	Baseline	1st Monitor	Baseline	1st Monitor		
PH	-	7.06	6.42	6.95	6.29	7.22	6.49	2	5-9
Temperature	°C	29.30	31.2	28.10	31.7	29.30	29.4	0-100	N
Dissolved Oxygen	mg/L	< 0.50		0.65		1.30		0.50	4-2
Biochemical Oxygen Demand	mg/L	48.75	38.7	58.20	67.8	30.60	67.5	2	≤30
Total Suspended Solids	mg/L	13	16.2	288	44.2	103	93.5	5	50-150
Total Dissolved Solids	mg/L	381.00		450.00		406.00		25	≤ 1,300
Ammonia-Nitrogen	mg/L NH3-N	10.00		8.30		10.20		1.5	0.5
Ammonium Ion	mg/L NH4	12.90		10.70		13.10		2	≤ 4
Arsenic (As)	mg/L As	0.0015		0.0021		0.0033		0.0003	0.25
Cadmium (Cd)	mg/L Cd	< 0.006		< 0.006		< 0.006		0.006	0.03
Chemical Oxygen Demand	mg/L	121.00	74.8	182	112	104	124	25	10-12
Hydrogen Sulfide	mg/L H2S	< 0.14		0.18		< 0.14		0.14	< 1
Nitrate-	mg/L NO3-	< 0.07		< 0.07		< 0.07		0.07	45
Phosphate (PO4-3)	mg/L PO43-	1.20		4.50		2.36		0.03	1-2
Surfactant	mg/L MBAS	3.21		3.28		3.11		0.10	**
Turbidity	NTU	40.00	28	300.00	45	140.00	80	0.10	5***
Oil and grease	mg/L	< 3.00	<3.00	< 3.00	<3.00	< 3.00	<3.00	3.00	15
Lead (Pb)	mg/L Pb	< 0.01		< 0.01		< 0.01		0.01	0.1
Faecal Coliform	MPN/100m	>160,000		>160,000		>160,000		1.80	1000-4000
Total Coliform bacteria	MPN/100m	>160,000		>160,000		>160,000		1.80	5000-20000
Water's color/turbid 3/	B/Y/T	B/Y/T		B/Y/T					

*Remark: *standard applied for category 4, *** applied drinking water, ** Not available in water standard*

C. OTHER MONITORING ACTIVITIES

1) **Regular Monitoring**: At least once month, NES has conducted field monitor with all subprojects, in January and early February, NES and IES has monitored all subprojects and recommended the contractors to comply with EMP as requirement in EMP. Particular the issues for further action in the Semiannual report of 2018.
2) **Executing Agency Mission:** the mission has lead by general director of Housing and Urban Planning Department, Ministry of Public Work and Transport, including Savannakhet DPWT during June 5-7, 2019, the mission has visited all 6 subprojects that included Danasavan and Phine Urban Road.
3) **ADB Mild Term Review Mission**: the mild-term review of ADB mission had been organized during 18-22 Mar 2019, all 7 subprojects were visited and mission also commented as the table 1 for some remaining issues on environment that require to be solved as requirement in EMP.
4) **Savannakhet DoNRE Inspection**: The Joint Monitoring has comprised with Savannakhet Department of Natural Resource and Environment (DoNRE), Representative of PMU, Consultant (NES), Representative of District Office of Natural Resource and Environment, including head of village and contractor have conducted monitoring in 6 subprojects during 26-29 Mar and 1-5 April 2019.

IV. PUBLIC CONSULTATION, INFORMATION DISCLOSURE, GRIEVANCE AND CAPACITY BUILDING

48. This session is presented the public consultation related to grievance, construction design, and other information regarding the projects and grievance procedure and capacity building, it also included formal training, informal training, and awareness raising and study tour.

A. CAPACITY BUILDING

49. Solid Waste Management Training, which specific on community based Solid Waste Management, lesson learn from Indonesia, this training was organized January 21, 2019 at the meeting hall of Savannakhet DPWT. The participants were came from various sections as DoNRE, DPWT, PMU, PITs, UDAA, two representatives from each contractor, there were total 44 participants, included 9 females. This training has provide key implementation successfully for community solid waste management in Indonesia, which included 3R approach as “Reduce, Reuse and Recycle”. Only residue waste will be transported and disposed in landfill. After almost of full day of lecturing, the trainer and trainees had visited the current landfill management at Kaysone Phomvihane landfill.

50. Continuously package, road management training was organized at the Savannakhet DPWT during January 22, 2019. There were 41 participants and included 9 females. This training was presented the technical perspective for road maintenances, particular during the road operation, however, trainer also provide some technical for road safety as priority designing as well. After Training, the trainers and participants had visited Kaysone Phomvihane construction as well.

51. Solid Waste Management Study Tour in Indonesia, the cooperation among the PMU and INACON Consultant Company, the solid waste management was organized during February 25-March 1, 2019. There were total 11 persons and included 3 females. The study tour was leaded by deputy director of Housing and Urban Planning Department, Ministry of Public Work and Transport. The study tour team had visited three importance locations as Visit (1) laboratory of

road in Bandung and presentation from Laboratory. (2) *Suwung* Community based Solid Waste Management and Land fill area and (3) Tabanan community based solid waste management. Each community, there are presentation on solid waste management system, particular involving or participating of community on solid waste management.

52. Workers awareness raising that conducted by contractor as required in CEMP/EMP, contractor has organized as weekly basic, all workers before start their duties, they need an environment, health and safety oriented. The detail information are available in the monthly environment monitoring report that submitted to CSCS in each month.

B. INFORMATION DISCLOSURE/PUBLIC CONSULTATION & GRIEVANCE

53. In compliance to the Safeguards Policy Statement of the Bank (SPS 2009) and the approved EMPs and the Environmental Regulations of the Government of Lao, Public Consultations were conducted with the stakeholders, affected persons (APs), government representatives and concerned parties in the sub-project areas. The consultations were organized to provide the stakeholders and APs with the venue to provide feedback, raise issues and concerns about environmental matters directly to the Contractors, PMU and CSC.

54. Leaflets has been developed and distributed to local people. Sign Posts containing Contact details of the Contractor, PMU and Consultants has been installed. Orientation on the GRM Process has been conducted through the requisite with public consultations process and the requisite Grievance Lodging and Recording System has already been established. APPENDIX A: presents the details of the Public Consultations conducted for the Project since INACON taken over the project. Signposts are regular obtained and all signposts are remaining at the construction sites. Grievance logbook had been distributed to all contractors, but due to lack of complaint, contractor forget grievance logbook. NES has refreshed the contractor to obtain recording the any informal or formal complaints, all complaints must be recorded, and a month with zero complaint should be marked as zero complaint as well.

55. As the informal grievance system has developed and imposed and all complaints must be recorded, this facilitation is provided channel to affected person, easy to access GRM and complaint the environmental impacts. During Jan-Jun 2019, there are total 9 complaints, 7 cases were solved and they accepted the solution, two cases were agreed with corrective action that will be solved the issues within July 2019.

TABLE 13:STATUS OF COMPLAINTS/GRM

Type of Grievance & type of Receiving	Details (Date, person, address, contact details, etc.)	Required Action, Responsibility and Timing	Resolution Status
Drainage construction higher than his house waste water level. Calling and formal form	Mr. Bounhom in Ban Vernhongkham, Phine District (10.01.2019) Phine Urban Road subproject	Require Project (project owner, consultant & Contractor) to re-design to ensure that wastewater from household can flow to drainage system within Jan 2019.	Contractor, CSCS, PIT and affected person agreed (1) to connect the wastewater from household to drainage system (2) house's own upgrade floor to ensure for avoiding flood during rainy season. It was solved in Jan 2019.
Dust Pollution/ informal by calling	(Not expected to present name & phone) date 20.01.2019 (KP Road Subproject)	Watering to unpaved road at KM 1+200, by contractor as immediately	Immediate watering and regular 2 hours, and installed limited speed in the areas. It was solved within 2 hours.

Type of Grievance & type of Receiving	Details (Date, person, address, contact details, etc.)	Required Action, Responsibility and Timing	Resolution Status
Drainage-Household Waste Water /informal & formal letter	Mr. Bounhin, Pasongxay village, Phine District. Date 06.02.2019 (Phine Urban Road subproject)	Open or connect the waste water from household to drainage system by Project (PMU, CSCS, Contractor)	After Re-checked, project agreed to increase connection pile to household as requested (It was solved in 10.04.2019)
The waste water from worker camp flow into private land with bad smell. Informal call to PMU	April 9, 2019. Not expected to present name & phone number. (KP road subproject)	R8CE to prevent any wastewater to other private property.	10 April 2019, It was solved immediate a complaint by making septic tank for both bathroom and kitchen.
Erosion from Box culvert construction/ Informal & Formal letter	Ms. Khonephachanh 34 years old, Ban Pasomxay, Phine. (02.05.2019). Phin Urban road subproject	Protect the erosion is under responsibility of contractor within 3 months. (July 30, 2019)	(1) Contractor use soil material for refill the erosion areas. (2) plant the grass to slope areas. (3) where are high risk will use stone riprap or concrete. Under grass planting, it was accepted from affected person.
Borrow Pit agreement/ Informal & formal letter	Mr. Khamphien 45 years old, Ban Pasomxay, Phine District (10.05.2019) Phine Urban road subproject.	Original agreement, borrow pit will be developed as fish pond, but after excavation 70%, it was stone, landowner required contractor to re-surface the pit for residential land	(1) agreement and corrective action were set and contractor agreed to re-surface borrow pit within July 25, 2019. (2) land owner agreed with corrective action.
Maintenance of access road/ informal calling	15.05.2019 Representative of Ban Dongdamduan, Mob:02095588658 (KP road subproject)	Re-surface the holes in the access road to KP road, it is responsible by R8CE/contractor as immediately	(1) Refill with soil material for easy and comfortable travel, it was solved immediately within 2 days.
Maintenance of access road/ Informal and formal letter	Phine Army Office (19.06.2019). Phine Urban road subproject	The access road, connecting to new road, it is required to remove existing asphalt, re-compact & re-pave it. Project (contractor, CSCS, PMU)	(1) Project agreed, and it completed in end of June 2019.
Dusty at stockpile/ informal calling	Miss. Tia, Ban Sanamsay village, Mob: 02093599746 (25.06.2019). KP road subproject	Increase watering in the stockpile areas.	(1) contractor agree to increase from 4 times per day to six time per day at the soil stockpile areas as immediately. (2) installed limited speed sign to impose cars and other trucks slowdown. It was solved within 2 hours.

APPENDIX A: PUBLIC CONSULTATIONS/TRAINING/AD HOC MONITORING

NO	DATE, LOCATION, PARTICIPANT, TOPIC	CONTENTS/ AGENDA	ISSUES/ DISCUSSION/ RESULT
16	(1) 30-04-2019, (2) SVK DPWT meeting hall, (3) 15/3	DEWAT initiative design consultation	(1) The participants from consultant team, DoNRE, Governor office, DPWT, UDAA, PMU and presenter from BORDA Laos. (2) Agreed to conduct DED of DEWAT as additional work in HLK subproject. (3) BORDA should design based on actual information/situation for reducing dike at the inlet channel to ensure there will be no stagnant water at the upstream level. (4) GMS-EWEC TDP should cooperate & provide information for detail engineering design with BORDA. (4) GMS-EWEC TDP cooperate & coordinate with PoNRE for certifying the state land in designated areas and clear boundary with neighbour land. (5) Designers should cooperate with DoNRE, to ensure the level of release water to Mekong is quality enough (After treatment). (6) DED should be adjusted to suitable condition and remain times around 2-3 weeks. (7) After DED is final draft, it should be presented to committee again before adopted the final DED.
15	(1) 3-04-2019; (2) Fa Ngum road, KP WWM-HLK and KP SWM subproject. (3) 10/2	Savannakhet DoNRE Environment Inspection	(1) Monitor HLK construction, Fa Ngum construction and SWM subproject site at construction in each subproject. (2) Contractor require to increase safety in the construction sites in general, (3) increase watering and cleanliness of the construction sites. (4) KP WWM-HLK should eliminate wastewater from the worker's camp & clean and unblock the water flow in the diversion channel.
14	(1) 1-2-04-2019 (2) KP road subproject (3) 10/3	Savannakhet DoNRE Environment Inspection	(1) Monitor construction sites, cashing plant, asphalt plant, borrow pits. (2) Contractor should (a). Increase safety priority in the construction and associated areas (b). Cleanliness of worker camp is necessary (c). develop ditch for muddy from asphalt plant
13	(1) 28-03-2019 (2) Phine Urban road subproject (3) 12/2	Savannakhet DoNRE Environment Inspection	(1) Monitor construction sites, bitumen boiling place, borrow pits, worker's camp (a) One concrete mix area is required to move for using the one located a bit far from community (b) Increase dust control by increase watering from 3 times to 6 times in the unpaved roads (c)Increase signage for warning public, where are risks to accident or unsafe
12	(1) 27-03-2019 (2) Dansavan Urban road subproject (3) 14/1	Savannakhet DoNRE Environment Inspection	(1) Monitoring team included Savannakhet DoNRE, Sepon NRE Office, head of village, contractor, PMU & consultant. (2) Monitor construction sites, worker camp, subcamp, and borrow pits. (3) Recommend for contractor to improve subcamp with same standard as main worker camp.
11	(1) Feb 25-Mar 1, 2019, (2) Indonesia (3) 11/3 (4) Solid Waste Management Study Tour	Study Tour on Solid Waste Management in Indonesia	(1) Visit laboratory of road in Bandung and presentation from Laboratory. *(2) Suwung* Community based Solid Waste Management and Land fill area (3) Tabanan community based solid waste management. Each community, there are presentation on solid waste management system, particular involving or participating of community on solid waste management.

NO	DATE, LOCATION, PARTICIPANT, TOPIC	CONTENTS/ AGENDA	ISSUES/ DISCUSSION/ RESULT
10	(1) January 22, 2019. (2) Savannakhet DPWT (3) 41/9 (4) Road Maintenance	(1) Principle for road construction (2) Road Operation (3) Road maintenance and management	No record
9	(1) January 21, 2019. (2) Savannakhet DPWT (3) 44/9 (4) Solid Waste Management Training	(1) lesion community base solid waste management from Indonesia (2) 3R principle (3) Site visit of KP solid Waste Management	Solid Management Workshop (3R Management system, which is community Base Solid Waste Management, example from Indonesia) 1. Establishment of community base on solid waste management, 2. Financial management, 3. Operation 4. Regulation framework and government support. 5. Field Visit in KP-Solid Waste Management landfill
8	Date: December 29, 2018. Location: Main worker camp of R8CE Participant:33 persons, included 2 females Topic: STD & HIV prevention, symptom & treatment.	1). What is STD & common STD for prevention 2). What is HIV?? Symptom & Prevention 3). Demonstration for using condom & free distribution of condom	No record.
7	Date: December 27-28, 2018 Location: DPWT meeting hall Participant: 16 persons, included 4 females Date: December 27-28, 2019 Location: DPWT Meeting hall Participant: 14 persons/ 4females Topic: Environment Training	1). Env background 2). Env law 3).National Env standard 4). Waste instruction 5). EMP responsible party & roles 6). Env potential impacts 7). Env mitigation 8). Env Monitoring and report 9) Env checklist 10). Monthly EMR 11). Grievance, public consultation & Emergency plan.	1). Environment training program has 16 participants included 4 females and two trainers, this training was conducted for two days at DPWT meeting hall during 27-28 December, 2018. There are 11 staffs from 6 subprojects, one person from PMU and another 4 persons from relevance agencies. 2). Based on evaluation, the participants have increased their knowledge on environment particular for EMP/CEMP management an average 27.53%. 1). Environment training program has 16 participants included 4 females and two trainers, this training was conducted for two days at DPWT meeting hall during 27-28 December, 2018. There are 11 staffs from 6 subprojects, one person from PMU and another 4 persons from relevance agencies. 2). Based on evaluation, the participants have increased their knowledge on environment particular for EMP/CEMP management an average 27.53%. 3). The advance group in participants have increase their knowledge on environment management 19.67%, but the intermediate and lower group of participants have increased 34.20%. 4). This training has been provided significantly environment management to all participants that focus on EMP/CEMP implementation management. The training also emphasize on MEMR, monitoring checklist and background on environment.

NO	DATE, LOCATION, PARTICIPANT, TOPIC	CONTENTS/ AGENDA	ISSUES/ DISCUSSION/ RESULT
6	Date: December 16, 2018 Location: Phonxay Temple Participant: 58 persons, including 21 females. Topic: public consultation during construction	Present current status of construction & plan Environment, Health and safety mitigation Consultation for each issue	The conclusion of consultation: Contractor agreed to increase and obtain moisture of construction to avoid dust pollution that might affect to local people health Contractor agreed to maintain road, where are numerous of holes, eventual construction not arrive yes, it should be maintained Villagers also require contractor to construct drainage to finish as soon as possible to avoid business disruption from long procedure of construction Villager also request contractor to maintain access road, cross Kaysonephomvihane road as unpaved road on the way to cemetery.
5	Date: November 9, 2018 Participant: 28 persons, 14 Females Location: Nalao village meeting hall Organizer: FA Ngum Road subproject (CPK) Topic: public consultation during construction phase	Present current construction status, issues & mitigation Grievance Redness Mechanism Consultation for each topic	1). Villagers required for more watering in the construction sites, consultant asked villagers that contractor regular water as promised at least 4 times per day in 2A and 2B, 6 times per day in F1 section. Contractor responded that before promising and during boat racing festival, because all staffs were off, regarding public holidays. And villagers also agreed during this period, water is regular spray and moisture in the construction. 2). CPK/contractor asked for announcing for children or any persons are prohibited to take out reflection sticker and destroy safety ropes or safety poles. Village authority agreed to warn all villagers for obeying the rules and agreed to cooperate with contractor 3). Villager also consulted regarding access road, how long access road will be built from main road, contractor stated that so far, there is no budget in BoQ, but surely it will be built 4). Villager consulted the stagnant wastewater in front of restaurant, odor, how contractor to solve it. Contractor claimed that we immediately to fix it this week, to drain out the stagnant wastewater to drainage system. 5). Villager also consulted regarding connection among household wastewater to drainage system. Contractor explain that pile will be built by household and contractor responsible only collection hole for each household at the drainage. 6). NES also emphasis regarding environment, health and safety issues as priority for construction, mobile phone is available, please contact for any concern or issue occur
4	(1)Kaysonephomvihane road: October 11-12, 2018 total 8 persons, include 2 females. (2)Fa Ngum raod: Oct 13, 2018. Participant: 8 persons included 2 females. (3)KP-SWM & KP-WWM-HLK-Channel: Oct 14, 2018. 16 persons including 4 females (8 person per subproject) (4) Dansavan Urban road: Oct 16-17, 2018, 7 persons included 2 females (5) Phine Urban: Oct 17-18, 2018. 7	DoNRE Environment Inspection on construction sites at least 2 location each subproject Inspect worker's camp Inspect borrow pit for 6 subprojects	The common issues found and recommended to each subproject Install extinguisher near fuel tank, with warning sign and prohibit sign regarding smoke, fire… Construction Material must be stored tidy and build specific stockpile for material for KP-SWM subproject, Phine Urban road. Toilet and bathroom must be installed and garbage bin specific for KP-WWM-HLK-channel subproject. the camp is weak and need to be improved. There is drainage construction, and there are many locations without properly cover, it is risk accident, contractor must immediately cover with cover specific for all road construction Increase safety warning sign, safety rope, safety poles or barriers in the construction sites, specific for Kaysonephomvihane road and Phine urban road Not allow to waste construction equipment directly to natural stream, specific for Phine urban road (concrete mixer washing) Build temporary storage for garbage for waste of construction & not all to burn any garbage specific for Phine urban road Increase more watering in the construction at least 3-4 times per day specific in Phine urban road construction

NO	DATE, LOCATION, PARTICIPANT, TOPIC	CONTENTS/ AGENDA	ISSUES/ DISCUSSION/ RESULT
	persons, included 2 females.		
3	(1) Date: Sept 29, 2018 (8:30-11:00) (2) Location: PhonsavangTai village meeting hall (3)Participant: Total: 37 persons, Female: 26 persons (4) Topic: public consultation during construction with villagers in Phonsavangtai village(5) Organizer: Fa Ngum Road Construction Subproject (CPK)	Present current construction status, issues & mitigation Grievance Redness Mechanism Consultation for each topic	1) Villager consult regarding Park construction: CPK representative explain location, and criteria and briefly information regarding design and completed date of construction CPK/contractor asked for announcing for children or any persons are prohibited to take out reflection sticker and destroy safety ropes or safety poles. Village authority agreed to warn all villagers for obeying the rules and agreed to cooperate with contractor. 2) Villagers also request for support on fix the old bridge at the temple, because during rainy season, it is very difficult to access, CPK PM mentioned that eventual it is not related to construction issues, We are happy to support, we will send engineer to check and assist village based existing material we have, but we can support only in dry season. 3) NES also inform villagers, if there is any issues regarding environment don't forget to call relevance agency for better and faster solving environmental issues.
2	(1) Date: Sept 7 & 11, 2018 Location: Fa Road, KaysonePhomvihane road, Dansavan Urban road, and Phine urban road construction sites. Participant: interviewer: total 19 persons, Female: 9 persons, but each subproject 9 persons. Interviewee: 482 persons, Female: 244 persons Location: Kaysonephomvihan road, Fa Ngum road, Dansavan urban Road & Phine urban road construction areas. Topic: Assessment of local perception on Environment, Safety prevention in 4 road subprojects, Organizer: Join among Consultant, PMU, PIT & contractors	Interview local people who live around projects for their perception on environment management in each subproject Interview local passengers, who travel cross the construction on their perception on safety management in each subproject	Conclusion of report: Environmental and safety performance is very importance and priority in construction project, all mitigations are implemented according the plan, it clearly shows local people gave high rate on environmental mitigation action for all subprojects, on the other hand, safety management in each subproject is quite low rating. The most significant environment management in each subproject that are well mitigated as dust control, cleanliness and tidiness, noise control, flood protection and water stagnate prevention, consultation before excavation & temporary access road. The critical question asking perception rate on grievance information is very low rate because this information was not well disseminated, or local people played less attention on information. The safety management in each subproject has low rate from local perception, this safety management has focus only traffic safety management, which is related to installation on signages, safety poles, safety rope, barrier, including speech truck and information regarding grievance and insurance in case there was any accident. This safety management found higher rate only Dansavan urban road subproject. After interview, there are some mitigations have been improved and addressed to the concerning of local people and comments from provincial assembly. Based on results from local perception, some environmental mitigations and safety management are recommended below: Dust Control: Water spraying in the main town construction should operate at least 4 times per day and increase 6 times per day where are many cars and dense traffic, project like Phine & Dansavan should spray water at least 3 times per day. All subprojects are required to increase more signages, safety poles, safety rope and reflection in construction sites. All signages and safety tools should be adequate installation. Where are excavations areas should install signages and other safety tools in advance. Public consultation must re-organize with each village to disseminate information regarding grievance, insurance, including signpost contact for public, Safety officer in each subproject is required to regular check & monitor environment and safety issues in the construction sites as

NO	DATE, LOCATION, PARTICIPANT, TOPIC	CONTENTS/ AGENDA	ISSUES/ DISCUSSION/ RESULT
			daily for remove all unsafety from construction and obtain environment mitigation.
1	Date: August 1, 2018 (8:30-12:00) Location: Phonsavanh village meeting hall Participant: Total: 27 persons, Female: 8 persons Topic: Pre-construction Consultation in KP-Wastewater Management-HLK-Channel	Presented Project Background Construction Environment, Grievance Process of resettlement Construction scheme, environment impact & mitigation Consultation for each topic	Automatic hydraulic gate: we agreed and appreciate to have a hydraulic gate at the bridge for protecting the flood to the HLK catchment areas and we hope, it won't be repeated same mistake in the past as void from villager. Local also emphasizes that after install automatic hydraulic gate, it must have better management system and budget for maintenance and management of the gate. Roads along the channel: There are question raise up that what type of roads for both sides of channel? Mr. Chanthapasouth clearly answers that both sides of channel are unpaved road, but it is good condition enough because both roads needed to check the quality by consultant. Villager also commended that road might be too narrow during car drive and meet in opposite direction. Mr. Phomma also commended that It might design for one-way drive, it would be easier for driving, however, he also emphasizes that road over 3 meters, but car only 1.2 meters wide, so car can go two directions and carefully drive and limited speed. One villager also commended that It would be better, if road construction provides more space for avoiding accident during two cars meet in the opposite directions. Villager also asked, where are two bridges crossing the channel? Mr. Chanthapasouth, Mr. Phomma mentioned it is not clearly defined, where are the bridges, but when actual construction can be discussed again. Anouxay also said that villagers can comment where are importance for majority and necessary for local people, because bridges are built for local people. One person recommended, location 1 must be area for crossing among the Thahae and Saphantai village, and another person also commended that another location must be crossed the channel to the Thapthalar market. Mr. Phomma also end up with commend to villagers to go back and consult with villagers and provide information to our project, so during the construction, we can design for the best places. Resettlement: Villager asked regarding the compensation, and method of payment. Mr. Phomma, project director provides clearly answer to the audients that all affected lands will be compensated based on the unit prices from different sources, and it will be based on land price valuation from PoNRE. He also emphasizes on methodology of payment, it is different from the past, all compensation is directly transferred to affected persons by bank account, no cash system anymore. Cash system might linkage the compensation, which is might have question regarding transparency and accountability in the future. Transfer through bank account system is safe and protected corruption. Mr. Phomma also request all affected person to cooperate with resettlement team for provide accurate information and participate during the impact areas measurement in the field. Dust control: Villager raise up the question regarding the dust control during the dry season and it is responded by contractor that water spray will be regularly applied and maintain road condition. Villager also warns the contractor that works in the camp, they eventual work for JV, but when they stay in the areas of village authorize, they must obey and restrict to rules and law of village authority. Coming and leave must be reported to village authority.

APPENDIX B: PHOTOS OF ENVIRONMENT QUALITY MONITORING

A. Ambient Air/dust Monitoring at KP SWM Subproject

TSP, PM10, CO2, SO2, NO2 Monitoring at KP SWM subproject

B. Surface & Ground Water Sample Collection in KP SWM Subproject

Locations of Surface water sample collection/ponds at the back of KP SWM subproject

Ground Water samples from nearest households to KP landfill

C. Second Monitoring of TSP, PM10 & Noise in 4 subprojects.

Phine District Hospital

Phine District Government Office

Blinding People Office of Savannakhet Province

Justice Department Office at Savannakhet Province

D. Third Monitoring of TSP, PM10 & Noise in 4 Subprojects

Dansavan Urban Road

KP Road Subproject

KP Urban Road Subproject

Fa Ngum Road Subproject

TSP & PM10 at SVK Justice Department

Noise Level at SVK Justice Department

APPENDIX C: PHOTOS OF MISSION AND DONRE INSPECTION

A. Selected Photos of Exciting Agency Mission for visiting construction sites

Construction Site Visited at KP-WWM-HLK subproject

Construction Site Visited at Phine Urban Road Subproject.

B. Selected Photos of Joint Env Monitoring with DoNRE

Visited Asphalt Boiling Situation in Phine Urban Road Subproject

Meeting After Field Visit at Phine's Consultant Office

C. Selected Photos of ADB Mission

Group Photo at road construction in Dansavan subproject

Meeting at Dansavanh Consultant Office

APPENDIX D: PHOTOS OF CAPACITY BUILDING

A. Training on Solid Waste Management and Road Management

Field Visited at current landfill in Savannakhet Province

B. Study Tour in Indonesia

C. Selected Photos of Worker Awareness Raising (Conducted by Contractor)

Dansavan Urban Road Subproject (PPE Requirement and General Safety)

Dansavan Urban Road Subproject (Thinking before take action)