



Lao People's Democratic Republic

Peace Independence Democracy Unity Prosperity

Ministry of Natural Resources and Environment

and

Ministry of Public Works and Transport

Lao Environmental and Waste Management Project (P175996)

Environmental and Social Management Framework (ESMF)

Volume I Main Report

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Table of Contents

ABBREVIATIONS AND ACRONYMS.....	5
EXECUTIVE SUMMARY.....	8
1 PROJECT DESCRIPTION.....	18
1.1 PROJECT BACKGROUND.....	18
1.2 PROJECT OBJECTIVE AND INDICATOR.....	18
1.3 PROJECT COMPONENTS.....	20
1.4 PROJECT LOCATIONS.....	25
2 LEGAL AND INSTITUTIONAL FRAMEWORK AND WB ESF REQUIREMENTS.....	27
2.1 NATIONAL LEGAL FRAMEWORK.....	27
2.2 APPLICABLE WORLD BANK ENVIRONMENT AND SOCIAL STANDARDS (ESS) AND ESF INSTRUMENTS PREPARED FOR THE PROJECT 29	
2.2.1 <i>Relevance World Bank Environment and Social Standards (ESS)</i>	29
2.2.2 <i>ESF Instruments Prepared for the Project</i>	29
2.3 GAP ANALYSIS: WB ESF AND LAO LEGISLATION.....	44
3 SUMMARY OF ENVIRONMENTAL AND SOCIAL CONTEXT.....	57
3.1 OVERVIEW ON E&S CONDITIONS IN LAO PDR.....	57
3.2 SOLID WASTE MANAGEMENT IN LAO PDR.....	63
3.3 BRIEF BACKGROUND OF VIENTIANE CAPITAL.....	65
3.4 BRIEF BACKGROUND OF PROPOSED SITES TO BE INVESTED UNDER C2.....	69
3.4.1 <i>Vientiane Capital Landfill at Km32</i>	69
3.4.2 <i>Waste Transfer Station at Km16</i>	72
3.4.3 <i>Waste Transfer Station in Naxaythong District</i>	74
4 RISKS AND IMPACTS, AND PROPOSED MITIGATION MEASURES.....	76
4.1 POSITIVE IMPACTS.....	76
4.2 E&S RISKS AND IMPACTS AND PROPOSED MITIGATION MEASURES OF C1 AND 3.....	78
4.3 E&S RISKS AND IMPACTS AND PROPOSED MITIGATION MEASURES OF C2.....	83
4.4 CLIMATE CHANGE RISKS, ADAPTATION AND MITIGATION.....	98
5 E&S MANAGEMENT PROCEDURES.....	99
5.1 E&S MANAGEMENT PROCEDURES FOR C1 AND C3.....	99
5.1.1 <i>ESF Instruments to be implanted by C1 and C3</i>	99
5.1.2 <i>Simple ESCOP and Simple Do and Don't Measures for C1 and C3</i>	101
5.2 E&S MANAGEMENT PROCEDURE FOR C2.....	102
6 ESMF IMPLEMENTATION ARRANGEMENTS AND CAPACITY BUILDING.....	106
6.1 PROJECT IMPLEMENTING AGENCIES.....	106
6.2 SUBPROJECT CYCLE AND ADMINISTRATION.....	109



6.3	ESMF IMPLEMENTATION ARRANGEMENTS	110
6.3.1	<i>ESMF Implementation Arrangement for CC1 and C3</i>	111
6.3.2	<i>ESMF Implementation Arrangement for C2</i>	113
6.4	CAPACITY ASSESSMENT AND NEEDS	114
6.5	PROJECT ESF PERSONALS AND CONSULTANTS	120
7	CONSULTATION AND STAKEHOLDER ENGAGEMENT.....	122
7.1	CONSULTATIONS DURING PROJECT PREPARATION.....	123
7.2	CONSULTATIONS DURING PROJECT IMPLEMENTATION	125
7.3	REPORTING BACK TO STAKEHOLDERS	126
8	GRIEVANCE REDRESS MECHANISM	127
9	MONITORING AND REPORTING	129
9.1	MONITORING AND REPORTING FOR C1 AND C3.....	129
9.2	MONITORING AND REPORTING FOR C3	132
9.3	EXTERNAL MONITORING.....	135
10	INDICATIVE BUDGET	136
11	LIST OF ESMF ANNEXES AND ATTACHMENTS	137



List of Tables

Table 1-1: C1 Subcomponents (reference: revised PAD/Dec 2022)	20
Table 1-2: C2 Subcomponents (reference: revised PAD/Dec 2022)	22
Table 1-3: C3 Subcomponents (reference: revised PAD/Dec 2022)	25
Table 2-2: Key objectives and relevance of World Bank’s E&S Standards to the EWMP Project	32
Table 2-3: Gap Analysis of Legislative and Regulatory Framework of Laos PDR VS. Relevant WB ESSs	45
Table 3-1 Projection of MSP SMP generation in Vientiane from 2021-2030	67
Table 3-2: Waste Generation and collection Amount in Vientiane Capital	68
Table 4-1: Summary of the E&S Risks and Impacts and proposed Mitigation Measures for C1 and C3	79
Table 4-2 Summary of the E&S Risks and Impacts and proposed Mitigation Measures for C2	86
Table 5-1: Overview of ES Management Measures/ Instruments for C1 and C3	99
Table 5-2: Overview of ESF Instruments for C2	103
Table 6-1 Agency Implementation of project activities	106
Table 6-2: Institutional Capacity Assessment and Needs in Implementing E&S Instruments	114
139. Table 6-3 Proposed E&S Trainings and Workshops	120
Table 9-1 Proposed Monitoring Measures for C1 and C3	131
Table 9-2: Proposed Monitoring Measures for C2	134
Table 10-1 Estimated Budget for the ESMF Implementation	136

List of Figures

Figure 3-1 Map of Vientiane Capital (JICA, 2011a)	66
Figure 3-4 The Conceptual Landfill Design (Pre-FS Report, June 2022)	70
Figure 3-5 Location of Xaythany District, Vientiane Capital (Pre-FS Report, June 2022)	71
Figure 3-6 Surrounding of the Km32 Landfill Project Site	72
Figure 3-7 Site location Map (Google Earth Image 2022)	74
Figure 6-2 Coordination arrangements for the EWMP Project	109
Figure 6-3 ESMF Institutional Arrangements	111



ABBREVIATIONS AND ACRONYMS

3R	Reduce, Reuse and Recycle
ARAP	Abbreviated Resettlement Action Plan
ASEAN	Association of Southeast Asian Nations
AWPB	Annual Work Plan and Budgets
C1 and C3	Component 1 and Component 3
C2	Component 2
CERC	Contingency Emergency Response Component
CHSP	Community Health and Safety Plan
COC on SEA/SH and VAC	Code of conduct on Sexual Exploitation Abuse/Sexual Harassment and Violence Against Children
COVID19	Corona Virus 19
CTA	Chief Technical Advisor
DCC	Department of Climate Change
DGs/DDGs	Director Generals/ Deputy Director Generals
DHUP	Department of Housing and Urban Planning
DNEI	Department of Natural Resources and Environmental Inspection
DPF	Department of Planning and Finance
DOE	Department of Environment
DOP	Department of Planning
DONRE	District Offices of Natural Resource and Environment
DPWT	Department of Public Works and Transport
ECC	Environmental Compliance Certificate
ECOP	Environment Code of Practice
EDPD/PTI	Environmental and Disaster Prevention Division
EGEF	Ethnic Group Engagement Framework
EGEP	Ethnic Group Engagement Plan
EHSG	Environmental, Health and Safety Guidelines of WB Group
EIA	Environmental Impact Assessment
EPF	Environmental Protection Fund
EPFO	Environment Protection Fund
E&S	Environmental and Social
ESCOP	Environmental and Social Code of Practice
ESCP	Environmental and Social Commitment Plan
ESF	Environmental and Social Framework
ESIA	Environment and Social Impact Assessment
ESMF	Environment and Social Management Framework
ESMP	Environment and Social Management Plan
ESS	Environmental and Social Standards
EWMP	Environmental Waste Management Project



EXRI	EX Research Institute Ltd
FGD	Focused Group Discussion
FM	Financial Management
FPIC	Free Prior and Informed Consent
GBV	Gender Based Violence
GGGI	Global Green Growth Institute
GRM	Grievance Redress Mechanism
GRS	Grievance Redress Service
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
IEE	Initial Environmental Examination
IFC	International Finance Corporation
Km	Kilometer
km ²	Square kilometre
LFND	Lao Front for National Development
LMP	Labour Management Procedures
LWU	Lao Women's Union
MAF	Ministry of Agriculture and Forestry
M&E	Monitoring and Evaluation
MOF	Ministry of Finance
MOIC	Ministry of Industry and Commerce
MONRE	Ministry of Natural Resource and Environment
MPWT	Ministry of Public Works and Transport
MEM	Ministry of Energy and Mines
MPI	Ministry of Planning and Investment
NGO	Non-Government Organization
NRERI	Natural Resources and Environmental Research Institute
NPAP	National Plastic Action Plan
NPSC	National Project Steering Committee
OHS	Occupational Health and Safety
PAD	Project Appraisal Document
PAP	Project Affected People
PCU	Project Coordination Unit
PDO	Project Development Objective or Program Development Objective
PMU	Project Management Unit
PONRE	Provincial Offices of Natural Resource and Environment
PPE	Personal Protective Equipment
Pre-ESIA	Preliminary Environmental and Social Impact Assessment
PTI	Public Works and Transport Institute
RAP	Resettlement Action Plan
RDF	Refuse-Derives Fuel
RPF	Resettlement Policy Framework
SCOC	Social Code of Conduct



SDAs	Subproject Delivery Agencies
SEA	Strategic Environmental Assessment
SEA-MaP	Southeast Asia Regional Program on Combating Marine Plastics
SEP	Stakeholder Engagement Plan
SIA-SMP	Social Impact Assessment and Social Management Plan
SMP	Social Management Plan
SWM	Solid Waste Management
US\$ or \$	United States dollar
UXO	Unexploded Ordnance
VCOMS	Vientiane City Office for Management and Service
VTC	Vientiane Capital
WB	The World Bank
WBG	World Bank Group



EXECUTIVE SUMMARY

E1. Project Background

In Lao People's Democratic Republic (Lao PDR) rapid development during the past 10 years (pre-Covid-19) has resulted in degradation of natural resources and environmental quality and increased generation of solid wastes. To address these challenges, the Government of Lao PDR (GOL) through the Ministry of Natural Resources and Environment (MONRE), the Ministry of Public Works and Transport (MPWT), and the Environment Protection Fund (EPF) has been preparing a project, namely Environment and Waste Management Project (EWMP), for possible financing by the World Bank (WB). The project will be implemented between 2023 and 2029 with a total budget cost of \$ 45.08 million. Project objectives and activities are provided in Section 1 and Annex 1.

The WB's Environmental and Social Framework (ESF) will be applied to the project. With support from the WB on-going project, a team of international and national consultants have been mobilized to prepare the necessary ESF documents for the project comprising an Environment and Social Commitment Plan (ESCP), a Stakeholders Engagement Plan (SEP), and Environment and Social Management Framework (ESMF), a Social Impact Assessment and Social Management Plan (SIA-SMP), and a Pre-ESIA (PESIA) for selected site. Scope of the ESCP, SEP, ESMF, and SIA-SMP will cover all components while Pre-ESIA will cover only Component 2. This document is the ESMF of the EWMP which covers all project components.

E2. Project Objectives and Activities

The Project Development Objectives (PDO) of EWMP is to strengthen Laos' capacity for waste and pollution management, improve municipal solid waste management in targeted areas in Lao PDR, and provide immediate and effective response in case of an Eligible Crisis or Emergency.

The EWMP will also contribute to the SEA-MaP program development objective (PDO), which is to reduce plastics consumption, increase recycling, and minimize leakages to prevent land- and sea-based marine plastic pollution in Southeast Asia (see Section 1 of the main text).

Achievement of the EWMP PDO and SEA-MaP PDO will be measured by the following indicators:



- Projects with ECCs in full compliance with environmental risk management policies (Percentage)
- Increased coverage of municipal waste collection from households and businesses in Vientiane Capital (percentage)
- Solid waste recycled, composted and/or treated to reduce waste disposal volumes (percentage)
- Net greenhouse gas emissions reduced (metric tons/year)
- Plastics policies, guidelines, or standards developed (of which in alignment with the ASEAN Regional Action Plan) (number)

The Project activities will be implemented through the following 4 components while more details are provided in Section 1 of the main text and Annex 1 in Volume II:

- **Component 1 (C1). Supporting Policy Implementation and Capacity Enhancement.** This component aims to strengthen the GOL's policies and capacities for pollution control and waste management. Activities will be implemented through the following two subcomponents: Subcomponent 1A focusing on capacity support to GOL for implementing environmental risk management (ERM) for air and water pollution management in selected sectors and Subcomponent 1B focusing on supporting the GOL with new policies and regulations and capacity support for waste and plastic management.
- **Component 2 (C2): Infrastructure for the integrated solid and plastic waste management system and capacity building in waste management planning and operations.** This component aims to enhance the capacity of MPWT and the Vientiane City Office for Management and Services (VCOMS) to improve their capacities in the policy development and implementation of solid and plastic waste management. Activities will be implemented through the following two subcomponents i.e. Subcomponent 2A focusing on capacity building for waste management planning, operations, monitoring, waste service delivery, and cost recovery at the local level and Subcomponent 2B focusing on waste and plastics management infrastructure investments at the target areas (Km32, Km16 and Naxythong District).
- **Component 3 (C3): Project coordination and reporting.** This component will focus on inter-ministerial coordination, progress reporting, and monitoring and evaluation. Strengthening implementation and management capacity will involve support for monitoring and evaluation systems for the proposed program, enhancing stakeholder's collaboration at all levels. Two subcomponents are: Subcomponent 3A (*Project management and administration*) and Subcomponent 3B (*Communication, Engagement, and EPF Capacity building*).
- **Component 4 (C4). Contingent Emergency Response Component (CERC).** This component will provide an immediate response to an Eligible Crisis or Emergency, as



needed by enabling the GOL to request the World Bank to reallocate project funds to support emergency response and recovery.

On Project locations, under Component 1, the Project activities will be implemented nationwide on the part related to policy, regulations, and technical assistances (TA) while some activities, such as those related to the Reduce, Reuse, and Recycle (3R), the National Plastic Actions Plan (NPAP), and the pilot (Pilot) for improving environmental compliance of investment projects and activities will be conducted in Vientiane Capital and nearby provinces and the target areas to be identified during Project implementation according to the agreed objective and scope of the proposed activities.

Component 2 will finance waste management and recycling infrastructure investments in Vientiane Capital in Xaythany District and Naxaythong District. In Xaythany, there are two specific sites: one at the Km 32 (the existing landfill) and another at the existing transfer station at Km16. In Naxaythong, specific site to establish a new transfer station is being considered. More details can be found in Pre-ESIA and SIA-SMP. Environmental and Social (E&S) baseline conditions of Vientiane Capital and the 3 sites to be invested under C2 are provided in Section 3.4.

E3. Purpose and scope of the ESMF

This ESMF sets out the principles, rules, guidelines and procedures to assess and mitigate the E&S risks and impacts of the Project based on information currently available from the prefeasibility of the proposed investment under Component 2 and/or data collection during the design of the project and field visit and data collection for the Preliminary Environment and Social Impact Assessment (Pre-ESIA) conducted for the specific site at Km 32 landfill of Component 2 and the Social Impact Assessment (SIA) conducted for all components. The ESMF contains measures and frameworks to reduce and mitigate adverse E&S risks and impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for implementation of the activities and addressing the Project risks and impacts. The ESMF is prepared in line the World Bank's Environment and Social Framework (ESF) and its Environmental and Social Standards (ESSs) considered to relevance for the project. The social instruments (LMP, CHSP, COC, RFP and EGEF) to be applied to all components are provided in a standalone SIA-SMP. The ESMF will be applied to all Project components.

E4. Positive and Potential E&S Risks and Negative Impacts

The Project impacts are broken down into positive impacts and negative E&S risks and impacts as presented below.

Positive Impacts:

The Project will continue to support GOL efforts to strengthen its capacity for waste and pollution management, improve municipal solid waste management in target areas in Lao PDR,



and provide immediate and effective response in case of an Eligible Crisis or Emergency building on key outcomes of existing and/or recent projects financed by WB as well as initiate policy, regulations, and capacity building to address priority issues related to solid waste and plastics in Lao PDR. The Project will seek to comprehensively support capacity building and stakeholder collaboration across priority aspects of key agencies of MONRE, MPWT, other sector agencies and selected local governments responsible for solid waste management.

Key benefits from Project intervention through the efforts to improve policy and regulations related to environmental risk management (ERM) measures such as EIA, IEE, SEA, 3R, NPAP, TA and capacity building of local authorities to be implemented under Component 1 will clearly support urban cleanliness, waste reduction, pollution control, and overall ERM capacity of GOL. This will indirectly impact the quality of health of residents, which will lead to healthy long lives, money savings on health medication and support for urban poverty alleviation. Implementation of the SEA regulations as well as other ERM tools and pollution control measures will also contribute to reduction of waste generation and of negative impacts and promote positive impacts and participation of the sector agencies and local authorities on ways to incorporate E&S consideration into the upstream planning and monitoring especially those related to potential cumulative impacts and uncertainty related to climate change. Implementation of Component 3 will continue to strengthen EPFO capacity to engage key stakeholder and tap more funding supports from national and international sources and thus enhance sustainability of Project activities.

The EWMP investments proposed under Component 2 aim at significantly improving waste management in Vientiane Capital through an integrated waste management approach comprising upgrading the existing waste management and disposal facilities at the existing Km 32 landfill, establishment of Integrated Waste Management Facilities at the existing Km16 transfer station, and at a new transfer station to be established in Naxaythong District including capacity building of VCOMS and mitigation of potential negative impacts to waste pickers and other disadvantage groups.

The construction and operation of two new landfill cells proposed under the Km 32 landfill site will reduce some of the environmental impacts associated with disposal of the future incoming waste to the landfill. The proposed new landfill cells include leachate collection and treatment, which when managed and maintained properly will to some extent reduce the current pollution of surface water bodies draining from the landfill site and thereby also reduce adverse impacts caused by discharge of polluted water on agricultural fields. Human health risks due to contamination of water polluted by wastewater/leachate from the landfill site will also be reduced. Overall, compared with a “do nothing” scenario, the proposed improvements to waste disposal, leachate collection and treatment and waste disposal operations including a complete stop for open burning of waste, daily cover of incoming waste, and reduced littering - are expected to reduce odour nuisances, air and water pollution and improve health and safety for landfill workers and waste pickers. Furthermore, there are likely to be significant global and



regional beneficiaries of improved environmental conditions with decreases in (plastic) waste entering oceans and greenhouse gas GHG releases to the atmosphere.

Direct and indirect beneficiaries of the project are expected to be the approximately 1 million inhabitants of Vientiane Capital who will benefit from improvement to the waste management system, and an addition of some inhabitants in the target areas to be selected for the 3R and NPAPs who will benefit from improved policies, regulations, monitoring and enforcement, legislation, strengthened institutions, and increased capacities the agencies responsible for implementation of Component 1.

The 264 waste-pickers at the Km-32 landfill will benefit directly from improved working conditions at the landfill, training and skills development provided through the Project, and opportunities for work at the waste management facilities planned for Naxaythong and Km16. Women and vulnerable groups currently involved in informal (and formal) waste collection, sorting, and disposal networks will be specifically targeted to ensure they benefit from re-skilling and training opportunities, with the objective of incorporating informal workers into formal waste management systems and identifying alternative and/or substitute livelihood operations.

The poor and near poor, on average 10 percent of the population, are likely to experience significant positive impacts of collected waste, decreased waste burning, decreased pollution, and sanitary disposal of waste. The government will consider the effect on poorer households as it establishes new waste collection fees.

Furthermore, there will also be global and regional beneficiaries of improved environmental conditions with decreases in (plastic) waste entering oceans via the Mekong River and GHG releases to the atmosphere (see Section 4.4).

Overall Negative Impacts/Risk and Proposed Mitigations

Overall, the Project is classified as a high-risk project while the Project components have differing risk profiles. The E&S risks and impacts of the Component 1 and Component 3 are classified as low to moderate while those for Component 2 are classified as moderate to high mainly due to the on-going significant pollution at Km32 landfill site and risk if E&S considerations and implementation during each phase of activities as well as lack of clear policies, regulations, and limited institution capacity including the risk of inadequate Detailed Design at Km32.

With effective implementation of appropriate ESF Instruments and adequate design measures for solid waste management facilities as proposed in the Pre-ESIA, E&S risks and negative impacts from the Project's activities is expected to be at acceptable level.

E&S Risks for Components 1 and 3 (C1 and C3)

E&S risk for C1 and C3 is considered low to moderate. Activities to be implemented under these components will be limited to technical assistance (TA); procurement of equipment and



other goods/supplies; policy development; training, workshops, and other capacity building. However, the TA related to 3R, NPAPs, and Pilot investment projects/activities may also involve very small civil works such as installation of septic tanks, grease/oil traps, and/or simple solid/plastic waste storage room or refurbishing of old containers. The proposed activities under the C1 and C3 will create positive impacts on GOL efforts to improve overall capacity on ERM, pollution control, and waste management. However, there are possible risks and negative impact as summarized below:

- Risks related to the working conditions, labour disputes transmission of infectious diseases (such as Covid-19) of Project Worker¹. This will be addressed through the implementation of LMP (Attachment 1 of the SIA-SMPs);
- Inappropriate behaviour by Project Worker during training, consultation workshops and working in communities or field data collection. This can be managed through the implementation of a simple Code of Conduct on SEA/SH and VAC (Attachment 3B of the SIA-SMPs);
- Temporary risks and disturbances related to OHS, CHS and dust and noise generation due to construction and/or rehabilitation of small and/or very small civil works as well as installation of environmental quality monitoring stations. This will be mitigated by simple ESCOP (Annex 6A)
- The risks and negative impacts of the implementation of the TA related to 3R, NPAPs, and Pilot investment projects/activities are expected to be low and associated to working conditions, labour disputes transmission of infectious disease and temporary disturbances related to OHS, CHS and dust and noise generation due to construction and/or rehabilitation of small and/or very small civil works. This will be mitigated by a simple ESCOP (Annex 6A) or Simple Do and Don't Measures (Annex 6B), LMP (Attachment 1B of the SIA-SMPs) and social assessment will be included in the TOR for TA activities.

E&S Risks for Component 2 (C2):

Component 2B will finance waste management and recycling infrastructure investments in Vientiane Capital including (i) a new waste transfer station in Naxaythong district; (ii) upgrading material recovery facility at the Km16 in Xaythany district; and (iii) partial rehabilitation of the existing landfill at the Km32 in Xaythany district. However, Component 2A will provide TA to VCOMS for development and implementation of regulations and capacity building on waste

¹ The World Bank ESS2 defines four categories of project workers are grouped into direct workers, contracted workers, primary supply workers, community workers and civil services. The definition of project workers is provided in the Attachment 1 LMP of the SIA-SMP.



management planning, financing and cost recover, and development of operation manuals as well as providing supports for improving waste picker's working conditions and other supports for solid waste and plastic waste infrastructure and equipment, and management.

In this context, the overall risks and impacts of C2 are classified as moderate to high. The E&S risks and impacts associated with the pre-construction and construction are assessed to be moderate, temporary and localized while the E&S risks and impacts associated with the operation phases are assessed to be high due to the existing waste at the Km32 Site and associated legacy risks and impacts such as degraded surface and soil and groundwater quality and impacts on aquatic and agricultural resources, and community health due to leakage of leachate/toxic waste components into soil, water resource; air pollution and odor including air pollution from landfill fire; poor health and safety and sanitation, etc); and (ii) weak legal and institutional capacity on waste management.

To ensure that the E&S risks and impacts from the Project will be assessed and managed to an acceptable level, a Pre-ESIA has been prepared for the proposed activities at the Km32 landfill based on the preliminary design and feasibility study. The Pre-ESIA has confirmed that the Km32 landfill currently has significant E&S issues such as degraded surface and groundwater quality and impacts on aquatic and agricultural resources due to leakage of leachate/toxic waste components into soil, water resource; air pollution and odor including air pollution from landfill fire; poor health and safety and sanitation, etc. With the Project intervention, the impacts from the future incoming waste are expected to be reduced compared to a "without the project" scenario due to better management of future coming waste and upstream segregation at Km16 and Naxaythong facilities. However, as mentioned sensitive environment receptors (surface and groundwater, soil, air, etc.) in and nearby Km32 landfill has been affected by pollution from existing waste.

Based on the proposed Project activities at the Km 32 landfill described in the preliminary design and feasibility study, the Pre-ESIA has identified several opportunities for reducing ES impacts through strengthening the originally proposed conceptual technical design as the preferred project alternative. This strengthened technical design proposed in the Pre-ESIA is considered a preferred alternative that will be further evaluated and developed during the Detailed Design.

The project design will be subject to a full-scale environment and social impacts assessment (ESIA) as required by GOL regulation and will also covering the proposed project activities at the waste transfer stations in Naxaythong District and at Km16.

The key E&S risks and impacts and proposed mitigation measures of the C2 are provided in Section 4.3 while the details are provided in the standalone Pre-ESIA and SIA-SMP. Annex 7 provides an Executive Summary of the Pre-ESIA for the Km32.

Risk and Impacts on Climate Change:



An analysis on risk and impacts of the Project on climate change and details are provided in Section 4.4 of the main text.

E6. ES Management Procedures

The ESMF describes procedures for (i) Criteria for site Selection for Naxaythong and new construction materials sites provided in Annex 3; (ii) guidance note on regulatory impact assessment provided in Annex 4; and (ii) guidelines for preparation of site specific ESIA and ESMPs provided in Annex 5 including the information required, responsibilities and capacity needs and training necessary for project staff in charge of ESMP monitoring. Institutional arrangements for the project at the MPWT and government-level, as well as for consultants and contractors, are also described in Section 6 of this report.

E7. Implementation Arrangements

The MONRE will be the lead agency for implementation of Components 1 while the MPWT will be the lead agency for implementation of Component 2 and the EPF will be responsible for overall supervision, coordination, and reporting through the Component 3 activities. Project activities will be implemented by several agencies under the MONRE and MPWT while key sector agencies and selected target provinces considered priority will also be eligible for Project supports. The ESMF implementation arrangements are broken down into EPFO PCU and MPWT PMU.

EPF Project Coordinating Unit (PCU). A PCU will be established at the EPF Office (EPFO) to support project management and oversee the implementation of Components 1 and 3 as well as the overall coordination of Project activities including submission of a progress report to WB every 6 months. The PCU is proposed to include: a chief technical advisor (CTA), FM team, M&E team, E&S consultant team, a project coordinator and subproject coordinators.

MPWT Project Committee and PMU. The MPWT will establish a committee to oversee the implementation of activities under Component 2. The committee will be chaired by the Vice Minister of MPWT and include Director Generals (DGs) and Deputy Director Generals (DDGs) of MPWT's Department of Planning and Finance (DPF), Department of Housing and Urban Planning (DHUP), Public Works and Transport Institute (PTI), VCOMS and Vientiane Capital Departments of Public Works and Transport (DPWT). The MPWT PMU will consist of technical staffs of the DHUP, the DPC and the PTI with assistance from the E&S consultant team. A gender focal points will be assigned to oversee the gender activities and support reporting on gender-relevant indicators.

The MPWT PMU will be responsible for planning, supervision, monitoring and reporting of ESMF implementation for the C2 including reporting directly to WB in case of any emergency and/or accidents related to C2 activities with a copy provided to EPF PCU.

E8. Consultation and Stakeholder Engagement



During preparation of the ESF instruments, Focus Group Discussions (FGD) were carried out on 11 August 2022 by the EPF consultants together with technical staffs from EPFO, NRERI and PTI in Ban Naphasouk village, the KM32 landfill and Nahai village (KM16 Transfer Station) with a total of 82 participants including 52 females. There were representatives from village authorities, local residents, informal waste pickers², and registered waste pickers at the Km32. The team was divided into two sub-teams and carried out the FGD at the three locations given above on the same date and during FGD the participants were divided into small group of 8-10 participants. Key Informant Interviews were undertaken during 09 to 16 August 2022 with a total of 22 key representatives (9 women) from DOE, DINE, NRERI, PTI, DHUPD, VCOMS, Small B, and Xaythany district hospital. The summary results of KII and FGD are provided in Section 7 while list of participants is provided in SEP including details on the survey including the questionnaires used. The draft ESF documents (ESCP, SEP, ESMF, SIA-SMP, and Pre-ESIA) were disclosed on 29 November 2022 and consulted at national level on 20 December 2022. The details will be provided in the project's Stakeholder Engagement Plan (SEP).

E9. Grievance Redress Mechanism (GRM):

The grievance mechanism seeks to resolve concerns promptly, using an understandable process that is culturally appropriate and readily accessible at no cost. Grievances can be submitted if someone believes the Project is having a detrimental impact on the community, the environment, or on their quality of life. Stakeholders may also submit comments and suggestions. The GRM is described in full in the project's SEP, as well as in the ESMF.

In the EWMP it is envisaged there could be five types of grievances:

- Grievances relating to land acquisition, that follow the Resettlement Action Plan's GRM (detailed in the project's RPF).
- Grievances related to ethnic groups who may be excluded from project activities, attachment to land, different cultural practices, low literacy levels, lack of Lao language.
- Grievances related to Gender-Based Violence (GBV), Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH); and Violence Against Children (VAC).
- Grievances related to project implementation (including relating to environmental and social impacts, health, worker's camp, pollution and waste, etc.). Some of these may be specific to ethnic groups.
- Job-related disputes (detailed in the project's LMP).

More details are provided in the SEP.

² General villagers who are seasonal waste pickers



E10. Monitoring and Reporting

Monitoring is the method of ensuring mitigation measures are being implemented in accordance with ESMF and ESCP and are effective and also to ensure compliance with ESF requirement. Semi-annual monitoring reports will need to be undertaken in order to:

- Improve E&S management practices;
- Ensure the efficiency and quality of the E&S assessment processes;
- Establish evidence- and results-based E&S impact assessment; and
- Provide an opportunity to report the results of the implementation of mitigation measures in future ESMPs and other project related documents.

To ensure effective implementation of the ESMF requirements, the MPWT PMU will be responsible for monitoring and reporting of C2 while the EPFO PCU will be responsible for monitoring and reporting for C1 and C3 to WB. The monitoring and reporting system will include both internal monitoring and reporting by each PMU and overall project monitoring and reporting as required by WB.

E11. Budget

The total indicative cost reviewed is estimated at **USD1,226,000** plus the costs of specific mitigation measures in the ESMPs, ARAPs and EGEPs (if applicable). The cost for ESMF implementation for C1 and C3 is estimated at **USD606,000** while for C2 is estimated at **USD620,000** including the cost for full ESIA study. Cost for implementation of the site-specific ESMPs for C2 will be part of the construction contract cost. Funds for implementation of the E&S training, monitoring, and capacity building for C1 and C3 will be from the project management of C3 while that for C2 is part of C2 budget. This budget is indicative only and should be further refined during the preparation of a full ESIA for Component 2 and its site-specific ESMPs. The cost for resettlement and compensation will be the responsibility of the Government of Laos (GOL) if necessary. The cost of the implementation of E & S measures by the contractors will be included under contractor's contracts while the cost for External Monitoring for C2 will be under MPWT PMU budget. The estimated budget for ARAP/RAP including livelihood restoration of waste pickers will be confirmed during full ESIA stage and will be covered by the MPWT. See Annex 8 for detailed of the Estimated ESMF Implementation Budget.



1 PROJECT DESCRIPTION

1.1 PROJECT BACKGROUND

1. In Lao People's Democratic Republic (Lao PDR,) rapid development during the past 10 years (pre-Covid-19) has resulted in degradation of natural resources and environmental quality and increase generation of solid wastes. In response, the Government of Lao PDR (GOL), through the Ministry of Natural Resources and Environment (MONRE) and Ministry of Public Works and Transport (MPWT), has prepared the Environment and Waste Management Project (EWMP or the Project) for possible financing by the World Bank (WB) to be implemented in 2023 to 2029 with a budget of about US\$45.08 million.

2. The WB's Environmental and Social Framework (ESF) will be applied to the project.

3. This ESMF sets out the principles, rules, guidelines and procedures to assess and mitigate the environmental and social risks and impacts of the project based on the project design, prefeasibility study of investments under Component 2, and further information collected to support preparation of ESF instruments in August 2022. The ESMF also provides technical guidance on the E&S screening, the Guideline for preparation of ESF instruments to be required to mitigate potential E&S risks and negative impacts.

1.2 PROJECT OBJECTIVE AND INDICATOR

4. Main development objective of EWMP is to strengthen Laos' capacity for waste and pollution management, improve municipal solid waste management in target area in Lao PDR, and provide immediate and effective response in case of an Eligible Crisis or Emergency.

5. The EWMP will also contribute to the SEA-MaP³ program development objective (PDO), which is to reduce plastics consumption, increase recycling, and minimize leakages to prevent land- and sea-based marine plastic pollution in Southeast Asia. The SEA-MaP will support marine plastic solutions in South-East Asia at the regional and national levels to tackle marine plastic pollution and support national plastic-related investments and policies. This will include supporting knowledge sharing with national programs through the development and implementation of regional actions related to plastic policies, standards, guidelines, and training. The SEA-MaP will also promote innovation and knowledge exchange, and support the development of viable public and private sector investments in plastic circularity. Marine

³ The EWMP will be one of the national-level projects contributing to the Southeast Asia Regional Program on Combating Marine Plastics (SEA-MaP) (P175659) which was approved in June 2022 and follows a Series of Projects (SOP) approach to support marine plastics solutions at the regional and national levels.



plastic is a transboundary issue, with shared river systems acting as conduits for plastic waste, and shared coastlines receiving plastic waste carried by ocean currents. Accordingly, single country solutions to manage marine litter risk will not be sufficient; there is a need for regional collaboration to combat marine plastic pollution in critical countries with mismanaged plastic waste. This will benefit the participating countries and with support of the regional program, benefit the wider Southeast Asia region. The SEA-MaP will also support several priority actions under the Regional Action Plan, such as strengthening plastic policies and regulatory frameworks aligned with the ASEAN Regional Action Plan. Measures at the regional level could support national actions to correct market inefficiencies, overcome poor incentives to recycle plastics or explore alternatives, and help unlock the potential for bankable solutions for innovations to reduce marine plastic pollution. Through the SEA-MaP, GOL can tap into resources for developing the enabling policies, regulations, and guidelines required for the recycling sector, and for stimulating private sector investment in the recycling sector.

6. The Project activities will support policy development and institutional strengthening at the national level to enhance regulatory oversight and planning of the solid waste sector, supporting environmental risk management and climate change actions, and enhance monitoring and regulation of key types of pollution in the country.

7. At the provincial and district levels, the Project will focus on supporting improved solid waste services and increasing the financial and environmental sustainability of solid waste management operations through technical assistance and investments in infrastructure and equipment focusing in priority areas in Vientiane capital. The Project will facilitate the creation of models for solid waste management in target areas that can demonstrate improved and cost-effective performance and serve as inspirations for other areas.

8. The Project will seek to comprehensively support stakeholder collaboration across all aspects of the sector, most notably MONRE, MPWT, key sector agencies, and local governments responsible for solid waste management.

9. The Project will measure its success by the following indicators:

- (a) Projects with ECCs in full compliance with environmental risk management policies (Percentage);
- (b) Increased coverage of municipal waste collection from households and businesses in Vientiane Capital (percentage)
- (c) Solid waste recycled, composted and/or treated to reduce waste disposal volumes (percentage)
- (d) Net greenhouse gas emissions reduced (metric tons/year), and
- (e) Plastics policies, guidelines, or standards developed (of which in alignment with the ASEAN Regional Action Plan) (number).



1.3 PROJECT COMPONENTS

10. The project activities will be implemented through the following 4 components (Please see Annex 1 for Details Project Description):

11. **Component 1. Supporting Policy Implementation and Capacity Enhancement (US\$16.12 million of which US \$13.74 million IDA, and US \$2.38 million ProBLUE).** This component aims to strengthen the GOL's policies and capacities for pollution control and waste management. Activities will be implemented through the following two subcomponents: Subcomponent 1A focusing on capacity support to the GOL for implementing environmental risk management (ERM) for air and water pollution management in selected sectors and Subcomponent 1B focusing on supporting the GOL with new policies and regulations and capacity support for waste and plastic management (see Table 1-1).

Table 1-1: C1 Subcomponents (reference: revised PAD/Dec 2022)

Component	Lead Implementing Agency	Total Budget (US\$ millions)
Component 1: Policy Implementation and Capacity Enhancement (PICE)	MONRE	16.17
Subcomponent 1A: Capacity support for implementing environmental risk management (ERM) for pollution management, with following activities; <ol style="list-style-type: none"> a. Develop (i) standard procedures for monitoring and evaluation of investment projects' compliance with Laos' environmental regulations; (ii) a compliance monitoring system for tracking environmental performance of investment projects; (iii) regulations for penalties for non-compliance with environmental regulations. b. Undertake compliance monitoring with focus on air and water pollution in the hydropower, mining, agriculture and industry sectors, and providing technical assistance to investment projects for improving environmental compliance. c. Provide technical assistance for strengthening air and water quality monitoring systems and for integrating the air and water quality data and information with the GoL's environmental compliance monitoring system. d. Provide technical assistance for enhancing capacity in other priority areas of ERM including on (i) ESIA's for the agriculture, mining, hydropower and industry sectors; (ii) developing and implementing SEAs in the mining sector; and (iii) integrating climate risk and mitigation management as part of ERM interventions in the four priority sectors for 	DOE-MONRE	10.53



environmental regulation.		
<p>Subcomponent 1B: Policy and capacity support for solid waste and plastic management, with the following activities:</p> <ol style="list-style-type: none"> Develop a National Waste Management Decree on non-hazardous and hazardous waste and relevant sub-regulations on waste management measures and establish a cross-ministerial National Solid Waste Management Coordination Committee to support implementation of the Decree and regulations. Develop a national waste and pollution data and information system. Provide technical assistance and finance for implementation, monitoring and enforcement of the National Plastics Action Plan (NPAP).⁴ Strengthen the domestic plastic waste recycling sector through technical assistance for establishment of minimum standards, compliance system, sub-decree, and capacity building for authorities for monitoring and inspection. It will also establish a recycling market information system and explore the potential on refuse-derived fuel (RDF). Provide finance GCB and 3R activities: scaling-up small-scale plastic waste reduction, collection and processing initiatives including waste banks for plastics collection at villages and schools, composting at schools, waste separation at the household level in target districts, training support for the informal sector with a focus on women, and piloting refill and reuse stations with a focus on tourism hotspots. 	DNEI-MONRE	5.59 ⁵

- Component 2: Infrastructure for the integrated solid and plastic waste management system and capacity Building in waste management planning and operations (US\$25.15 million of which US\$21.53 million IDA and US\$3.62 million ProBLUE grant).** This component aims to enhance the capacity of MPWT and the Vientiane City Office for Management and Services (VCOMS) to improve their capacities in the policy development and implementation of solid and plastic waste management. Activities will be implemented through the following two subcomponents i.e. Subcomponent 2A

⁴ At this time, the NPAP is under development led by MONRE and supported by the World Bank and other development partners.

⁵ US \$3.21 million is from IDA and US \$2.38 million is from ProBLUE



focusing on capacity building for waste management planning, operation, monitoring, waste service delivery, and cost recovery at the local level and Subcomponent 2B focusing on waste and plastics management infrastructure investments in Vientiane Capital to improve the effectiveness and efficiency of waste and plastics management to enhance services and environmental sustainability in three selected locations (see Table 1-2).

Table 1-2: C2 Subcomponents (reference: revised PAD/Dec 2022)

Component	Lead Implementing Agency	Total Budget (US\$ millions)
Component 2: Infrastructure for the integrated solid and plastic waste management system and capacity building in waste management planning and operations	MPWT	25.15
<p>Subcomponent 2A. Capacity building for waste management planning, operation, monitoring, waste service delivery, and cost recovery at the local level (US\$0.53 million), with the following activities:</p> <p>a) Provide technical assistance to VCOMS for:</p> <ul style="list-style-type: none"> • Development of regulations and capacity building for waste management planning and collection zoning; contract management and supervision of private waste operators; tariff setting; waste collection from waste service users and private waste operators; and landfill operations and management. • Financing and cost recovery for the Vientiane Capital waste management system including developing a mobile application for waste fee collection. • Development of a waste management plan for collection zoning per private waste operators, collection scheduling, collection truck and human resources management, service charge collection, contract management, engagement with waste service users, transfer stations operation, landfill operation, waste data collection and regular environmental monitoring. <p>b) Develop operational manuals for integrated waste management facilities (sorting and recycling facilities and composting facilities) and landfill management including site selection, standard landfill design, and standard</p>	VCOMS	0.53



Component	Lead Implementing Agency	Total Budget (US\$ millions)
<p>operational procedures for construction, operation, and closure of landfill.</p> <p>c) Provide support for improving waste pickers working conditions through:</p> <ul style="list-style-type: none"> • Vocational skills building and training, provision of protective equipment and health and safety training. • Interventions for improving female workers’ access to jobs in the SWM sector described in the Gender assessment (Section C) of the PAD (December 2022). • Support measures for children engaged in waste picking described in Annex 2 of this PAD (December 2022). • Allowing informal waste workers to safely access incoming waste at the KM32 landfill. <p>d) Support investment preparation for solid and plastic waste infrastructure, equipment, and their management including:</p> <ul style="list-style-type: none"> • Detailed Design (DD) of integrated solid waste and plastic waste management system and specifications for each waste management equipment and infrastructure. • Site-specific Environmental and Social Impact Assessments (ESIAs), Environmental and Social Management Plan (ESMP), Resettlement Action Plans (RAPs) and Livelihood Restoration Plans (LRPs) per project site according to the World Bank’s Environmental and Social Management Framework. • Bidding documents for each project site. 		
<p>Component 2B: Waste and plastics management infrastructure investments (US\$24.62 million of which US\$21 million IDA and US \$3.62 million ProBLUE):</p> <p>a) Establish the Naxaythong transfer station and Integrated Waste Management Facility (in the north-west of Vientiane Capital) with financing for:</p> <ul style="list-style-type: none"> • Civil works - a material recovery facility, composting 	MPWT	24.62



Component	Lead Implementing Agency	Total Budget (US\$ millions)
<p>plant, administration office building including rest rooms, canteen, training rooms. Separate bathroom facilities including changing room for males and female workers and waste pickers.</p> <ul style="list-style-type: none"> • Equipment - sorting, washing, shredding plastics waste equipment; weighbridge; transportation truck, wheel loader, forklift and other equipment for transfer station operation. <p>b) Upgrade the KM16 transfer station in Xaysettha District to be an Integrated Waste Management Facility with financing for:</p> <ul style="list-style-type: none"> • Civil works - waste collection, sorting, and material recovery facilities; upgrading the existing composting plant; • Separate bathroom facilities including changing room for males and female workers and waste pickers. • Equipment - a weighbridge; transportation truck, wheel loader, forklift and other equipment for transfer station operation. <p>c) Rehabilitate the KM32 landfill to extend its lifetime by at least 10 years with financing for:</p> <ul style="list-style-type: none"> • Civil works - capping waste cells, installing landfill liner, constructing an internal access road in the landfill and regulation pond and treatment facility, installing methane gas capturing pipes and leachate collection piping system, developing new sanitary landfill cells with waste reception area, developing hazardous waste storage, developing bathroom facilities for waste workers and upgrading of the administration office. • Equipment – a weighbridge and washing crushing and pelletizing equipment at the waste management community centre, a solar plant for on-site electricity generation, and trucks and other equipment for landfill operation. <p>d) Establish riverine plastics collection at priority pollution</p>		



Component	Lead Implementing Agency	Total Budget (US\$ millions)
<p>hotspots with financing for:</p> <ul style="list-style-type: none"> • Technical assistance for setting up viable plastics collection and disposal systems that are integrated into the general SWM system and involve communities in monitoring and reporting. • Civil works and equipment for plastics pollution monitoring stations. 		

- **Component 3: Project coordination and reporting (US\$3.81 million IDA).** This component aims to maintain and enhance project management, monitoring, learning and coordination across the implementing agencies. Activities will be implemented through two subcomponents i.e Subcomponent 3A for project management and administration support to strengthen the capacity of the EPFO and the implementing agencies in project management, fiduciary management, results monitoring, impact assessments, and reporting. ESF implementation support will also be supported under this subcomponent. Subcomponent 3B to strengthen the capacity of the EPFO for coordination and communication, and fundraising for waste and pollution management and environmental protection (see Table 1-3):

Table 1-3: C3 Subcomponents (reference: revised PAD/Dec 2022)

Component	Lead Implementing Agency	Total Budget (US\$ millions)
Component 3. Project Coordination and Reporting	EPFO	3.81
Subcomponent 3A. Project management and administration	EPFO	2.90
Subcomponent 3B. Communication, engagement, and EPFO capacity building	EPFO	0.91

- **Component 4. Contingent Emergency Response (CERC) (US\$0 million).** This component is designed to provide swift response in the event of an eligible crisis or emergency, by enabling the GOL to request the World Bank to reallocate project funds to support emergency response and reconstruction.

1.4 PROJECT LOCATIONS

12. Under Component 1, the Project activities will be implemented nationwide on the part related to policy, regulations, and technical assistance (TA) related to Reduce, Reuse, and Recycle (3R), the National Plastic Actions Plan (NPAP), and pilot for improving environmental compliance of investment projects and activities will be conducted in Vientiane Capital and



nearby provinces and the target areas to be identified during Project implementation according to the objective and scope of the proposed activities to be discussed and agreed with WB.

13. Component 2 will finance priority low-cost infrastructure to improve effectiveness and efficiency of waste and plastics management in Vientiane Capital in Xaythany District and Naxaythong district. In Xaythany district, there are two specific sites: one at the existing solid waste landfill at Km32 (the existing landfill) and another at the existing waste facilities at Km16. In Naxaythong, the specific site is being considered for the proposed Project activities to establish a transfer station and Integrated Waste Management Facilities (IWMF). Site selection criteria, including environmental and social criteria considered for Naxaythong site selection is presented in Annex 3. More details description on project locations for investments under Component 2 are provided in *Section 3.4* and details of project activities at Km32 landfill are provided in *Annex 7*.



2 LEGAL AND INSTITUTIONAL FRAMEWORK AND WB ESF REQUIREMENTS

2.1 NATIONAL LEGAL FRAMEWORK

14. The Lao PDR has many laws and regulations that govern environmental and social impacts and risks assessment and management applicable for all development projects financed by both public and private sectors. The key Lao laws and regulations relevant to the EWMP Project are listed in Table 2-1 below while details are provided in **Annex 2**.

Table 2-1: National Policies and Legislations

Subjects	Related national policies, strategies, laws, regulations
Natural Environment (Land, water, forest)	<ul style="list-style-type: none"> • Constitution of the Lao PDR People’s Democratic Republic (amended) No. 63/NA, 08/12/2015 • The Law on Making Legislation, No. 19 /NA, 12 July 2012 • Law on Environment Protection, No. 29/NA, dated 18/12/2012 • Law on Land, No. 70/NA, dated 21/06/2019 • Law on Forestry, No. 08/NA, dated 13/06/2019 • Law on Disaster Management, No. 15/NA, dated 24/06/2019 • Law on Water and Water Resources, No. 23/NA, dated 11/05/2017 • The Law on Aquatic and Wildlife Animals No. 07/NA (2007) • Decree on Environmental Impact Assessment, No. 21/GoL, dated 31/01/2019 • Decree on the Promulgation and Enforcement of National Environmental Standards, No. 81/PMO, dated 21 February 2017 • Decree on Occupational Health and Safety, No. 22/GOL, dated 05/02/2019 • The Law on Resettlement and Occupation, No. 086/NA, dated 15/06/2018 • The Decree on Compensation and Resettlement of People Affected by Development Projects, No. 84/GoL, dated 05/04/2016
Waste management	<ul style="list-style-type: none"> • Ministerial Decision on landfill management No. 521/MPWT, 23 February 2007 • Ministerial Instructions on Hazardous Waste Management, No. 0744/MONRE, 11-Feb-2015.



Subjects	Related national policies, strategies, laws, regulations
<p>Labour: OHS, child labour non-discrimination, freedom of association, worker grievance; labour code; Sexual Exploitation and Abuse/Harassment (SEA/SH)</p>	<ul style="list-style-type: none"> • The Law on Labour Protection, No. 43/NA, dated 24/12/2013; • The Law on Grievance Redress, No. 023/NA, dated 09/11/2016; • The Law on Hygiene, Prevention and Health Promotion, No. 73/NA, dated 22/11/2019; • The Law on Prevention of HIV Disease, dated 01/NA, dated 29/6/2010; • The Law on Entry-Exit and Management of Foreigners, No. 59/NA, dated 26 December 2014; • The Law on Lao Union, No. 3-/NA, dated 15/11/2017; • The Law on Anti-Human Trafficking, No. 73/NA, dated 17 December 2015; • The Law on Preventing and Combating Violence against Women and Children, Law No. 56/NA, 23/12/2014; • The Law on the Protection of Children Rights and Benefits, No. 05/NA, dated 27/12/2006; • The Law on the Development and Protection of Women, No.08/NA, dated 22/10/2004; • The Law on Prevention of HIV Disease, dated 01/NA, dated 29/6/2010; • The Family Law, No. 05/NA, dated 26/9/2008; • Health Impact Assessment No. 365, MOPH, 01 March 2006 • Health Impact Assessment Guidelines, Ministry of Public Health, 2010. • The Decree on Occupational Health and Safety, No. 22/GoL, dated 05/02/2019; • The Decision on Occupational Health and Safety at Construction Sites, No. 3006/MLSW, dated 21/08/2013;
<p>Ethnic Groups including engagement</p>	<ul style="list-style-type: none"> • The Constitution of the Lao PDR People’s Democratic Republic (1991, amended, No. 63/NA, 08/12/2015); • The Ethnic Minority Policy (1992); • The Law on Lao Front for National Development, No. 49, dated 20/8/2018; • The Law on Media No. 01/NA, dated 4/11/2016; • The National Assembly of the Lao PDR –2009 and National Assembly Meeting No. VIII, 28/12/2018 for Ethnic Groups in Lao PDR. • The National Guideline on Consultation with Ethnic Groups, 2013; • The Guidelines for the Implementation of the State Decree on the



Subjects	Related national policies, strategies, laws, regulations
	<p>Management and Protection of Religious Activities in the Lao PDR, no 16/MoI, 09/11/2016;</p> <ul style="list-style-type: none"> • The Public Involvement Guidelines in ESIA Process, No. 707/MONRE, dated 05/02/2013;

2.2 APPLICABLE WORLD BANK ENVIRONMENT AND SOCIAL STANDARDS (ESS) AND ESF INSTRUMENTS PREPARED FOR THE PROJECT

2.2.1 Relevance World Bank Environment and Social Standards (ESS)

15. According to the Environmental and Social Review Summary (ESRS) of the WB identified during the project concept stage and confirmed during project preparation, of the WB's ten ESSs, nine (9) ESSs, except for ESS 9 – Financial Intermediaries are considered relevant to the project. These include:

- ESS1 – Assessment and Management of Environmental and Social Risks and Impacts;
- ESS2 – Labor and Working Conditions;
- ESS3 – Resource Efficiency and Pollution Prevention and Management;
- ESS4 – Community Health and Safety;
- ESS5 – Land Acquisition, Restrictions on Land Use and Involuntary Resettlement;
- ESS6 – Biodiversity Conservation and Sustainable Management of Living Natural Resources;
- ESS7 – Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities;
- ESS8 – Cultural Heritage; and
- ESS10 – Stakeholder Engagement and Information Disclosure.

The following ESS is not relevant to the project:

- ESS9 – Financial Intermediaries.

16. Potential E&S risks related to Component 3 are different from those related to Components 1 and 3. The risk and mitigation measures discussed in this ESMF (see Section 2.2.2 and Table 2-2) are divided into those related to Component 3 and Components 1 and 3 activities. This is also consistent with the implementation arrangement of the project.

2.2.2 ESF Instruments Prepared for the Project

17. The following E&S instruments as listed in Table 2.2 have been prepared during project preparation to manage E&S risks from the Project activities in the manner consistent with the ESF requirements and objectives:



- i) A standalone Environment and Social Management Commitment Plan (ESCP). Given the different implementation arrangement between Component 2 and Components 1 and 3, the ESCP identifies the measures and the entities responsible for implementation.
- ii) A standalone Stakeholder Engagement Plan (SEP). This document identifies key stakeholders to be consulted throughout the project preparation and implementation process. It also identifies Grievance Redress Mechanism (GRM) to be applied at project, subproject, and activities levels. SEP will be applied to all project components. GRM monitoring will be conducted and included in the Project monitoring report.
- iii) Environmental and Social Management Framework (ESMF). This ESMF sets out the principles, rules, guidelines and procedures to assess and mitigate the E&S risks and impacts of the Project based on information currently available from the prefeasibility of the proposed investment under Component 2 and/or data collection during the design of the project and field visit and data collection for the Preliminary Environment and Social Impact Assessment (Pre-ESIA) conducted for the specific site at Km 32 of Component 2 and the Social Impact Assessment (SIA) conducted for all components. The ESMF contains measures and frameworks to reduce and mitigate adverse E&S risks and impacts, provisions for estimating and budgeting the costs of such measures, and information on the agency or agencies responsible for implementation of the activities and addressing the Project risks and impacts. The ESMF is prepared in line the World Bank's Environment and Social Framework (ESF) and its Environmental and Social Standards (ESSs) considered to relevance for the project. The social instruments (LMP, CHSP, COC, RFP and EGEF) to be applied to all components are provided in a standalone SIA-SMP. The ESMF will be applied to all Project components.
- iv) As agreed during the Project concept stage, a standalone Preliminary Environmental and Social Impact Assessment (Preliminary ESIA, Pre-ESIA) for one landfill site (Km32) has been prepared since information on activities and design available during project preparation is at preliminary level and inadequate for preparation of a full ESIA. This document describe baseline information on the E&S baseline condition and potential key E&S risks and impacts and mitigation measures required for the activities to be implemented at the Km32. The preliminary design will be further examined and revised during the detailed design taking into account necessary design improvement measures recommended in the Pre-ESIA. In parallel, the Pre-ESIA will be developed into a full ESIA that cover project activities at Km 32 landfill, Km16 transfer station and new Naxaythong transfer station during Detailed Design phase of Project implementation.
- v) A standalone Social Impact Assessment and Social Management Plan (SIA-SMP). This document provides social background and discussion on social risks and impacts related to all components. The SMP provides technical guidance for addressing social issues related to (a) Labour Management Procedures (LMP); (b) Worker Grievance Procedures;



(c) Community Health and Safety Plan (CHSP); (d) Resettlement Policy Framework (RPF) (including livelihoods restoration); and (e) Ethnic Group Engagement Framework (EGEF). Details on application of these instruments are provided as an attachment (Attachment 1 to Attachment 5).



Table 2-2: Key objectives and relevance of World Bank’s E&S Standards to the EWMP Project

Key objectives	Relevance to the EWMP Project
ESS1 (Assessment and Management of Environmental and Social Risks and Impacts): Relevant	
<ul style="list-style-type: none"> • Identify and assess social and environmental impacts, both adverse and beneficial, in the project’s area of influence; • Avoid, or where avoidance is not possible, minimize, mitigate or compensate for adverse impacts on workers, Project Affected Communities (PACs) and the environment; • Adopt differentiated measures so that adverse impacts do not fall disproportionately on the disadvantaged or vulnerable, and they are not disadvantaged in sharing development benefits and opportunities resulting from the project; • Utilize national environmental and social institutions, systems, laws, regulations and procedures in the assessment, development and implementation of projects, where 	<p>Overall, the project is classified a high-risk project. With effective implementation of appropriate ESF Instruments and adequate design measures (as recommended by the Pre-ESIA) for solid waste management facilities, environmental and social risk and impact from the project’s activities is expected to be at acceptable level and likely to generate long-term positive E&S impacts. Project components have differing risk profiles.</p> <p>Activities to be implemented under C1 3 will include technical assistance (TA); procurement of equipment and other goods/supplies; policy development; training, workshops, and other capacity building; small and/or very small civil works which may be required as part of the TA for 3R, GCB, NPAPs, and pilot investments/activities.. The risks and negative impacts of 1and 3 are classified low to moderate and associated to working conditions, labour disputes transmission of infectious disease and temporary disturbances related to OHS, CHS and dust and noise generation due to construction and/or rehabilitation of small and/or very small civil works. The risks can be mitigated through effective implementation of ESF instruments and management plans including LMP (Attachment 1 of the SIA-SMPs); Code of Conduct on SEA/SH and VAC (Attachment 3B of the SIA-SMPs); ESCOP (Annex 6A); and Do and Don’t Measures (Annex 6B)</p> <p>Component 2 (C2) will finance waste management and recycling infrastructure investments in Vientiane Capital including (i) a new waste transfer station in Naxaythong district; (ii) upgrading material recovery facility at the Km16 in Xaythany district; and (iii) rehabilitation of the existing landfill at the Km32 in Xaythany district. The activities will also include supports and TA to VCOM on waste management planning and operations.</p> <p>In this context, the overall risks and impacts of C2 are classified as moderate to high. The E&S risks and</p>



Key objectives	Relevance to the EWMP Project
<p>applicable;</p> <ul style="list-style-type: none"> Promote improved social and environmental performance, in ways which recognize and enhance Borrower capacity. 	<p>impacts associated with the pre-construction and construction are assessed to be moderate, temporary and localized while the E&S risks and impacts associated with the operation phases are assessed to be high due to the existing waste at the Km32 Site and associated legacy risks and impacts such as degraded surface and soil and groundwater quality and impacts on aquatic and agricultural resources, and community health due to leakage of leachate/toxic waste components into soil, water resource; air pollution and odor including air pollution from landfill fire; poor health and safety and sanitation, etc); and (ii) weak legal and institutional capacity on waste management.</p> <p>To ensure that the E&S risks and impacts from the Project will be assessed and managed to an acceptable level, a Pre-ESIA has been prepared for the proposed activities at the Km32 landfill based on the preliminary design and feasibility study. The Pre-ESIA has confirmed that the Km32 landfill currently has significant E&S issues such as degraded surface and groundwater quality and impacts on aquatic and agricultural resources due to leakage of leachate/toxic waste components into soil, water resource; air pollution and odor including air pollution from landfill fire; poor health and safety and sanitation, etc. With the Project intervention, the impacts from the future incoming waste are expected to be reduced compared to a “without the project” scenario due to better management of future coming waste and upstream segregation at Km16 and Naxaythong facilities. However, as mentioned sensitive environment receptors (surface and groundwater, soil, air, etc.) in and nearby Km32 landfill has been affected by pollution from existing waste.</p> <p>Based on the proposed Project activities at the Km 32 landfill described in the preliminary design and feasibility study, the Pre-ESIA has identified several opportunities for reducing ES impacts through strengthening the originally proposed conceptual technical design as the preferred project alternative. This strengthened technical design proposed in the Pre-ESIA is considered a preferred alternative that will be further evaluated and developed during the Detailed Design.</p> <p>The project design will be subject to a full-scale environment and social impacts assessment (ESIA) as</p>



Key objectives	Relevance to the EWMP Project
	<p>required by GOL regulation and will also covering the proposed project activities at the waste transfer stations in Naxaythong District and at Km16.</p> <p>The project may also cause the loss/reduction of the existing livelihoods of waste collectors, waste-pickers and other groups like informal recyclers who rely on revenue from the waste stream for their livelihood (e.g., small-scale waste buyers). Some of these impacts will be assessed as part of the preparation of NPAP and other related activities on the sector, including policy and legal / regulatory support. The assessment of poverty and social impacts as well as related consultation activities will be integrated in the TORs for such TA assignments.</p>
ESS2 (Labour and Working Conditions): Relevant	
<ul style="list-style-type: none"> Promote safety and health at work; Promote the fair treatment, non-discrimination and equal opportunity of project workers; Promote project workers, including vulnerable workers such as women, person with disabilities, children (of working age, in accordance with WB’s ESS) and migrant workers, contracted workers, community workers and 	<p><u>Component 2:</u></p> <p>The main risks relating to labour and working conditions are related to the construction and operation of solid waste disposal sites and recycling facilities. These are contracted workers (employees of civil works contractors and subcontractors, service providers, employees of consulting firms. Risk and impacts related to this are the following: i) employment discrimination of women and/or vulnerable groups; ii) payment for unskilled workers below the minimum wage⁶ of KIP 1,200,000 as per GOL mandated minimum wage; iii) inadequate working facilities for workers (including housing for government staff at the Km32 and Km16), in particular lack of sanitation facilities for women; and (iv) occupational health and safety or OHS related issues such as inadequate personal protective equipment (PPE); (v) labour related disputes, (vi) Sexual Exploitation and Abuse and Sexual Harassment (SEA/SH), (vii) child labour (waste pickers); (viii)</p>

⁶ The improved minimum wage in Lao PDR (1 August 2022 – 30 April 2023) is a single rate applicable to all employees, and does not differ based on region, skill level, or employer characteristics.



Key objectives	Relevance to the EWMP Project
<p>primary supply workers, as appropriate;</p> <ul style="list-style-type: none"> Prevent the use of all forms of forced labour and child labour; Support the principles of freedom of association and collective bargaining of project workers in a manner consistent with national law; and <p>Provide project workers with accessible means to raise workplace concerns.</p>	<p>accidents and injuries, exposure to toxic waste component/ air pollution (dust and bio-aerosols, odours nuisances, and vehicle emissions/noise and vibration/ pathogens and vectors in waste collection, transport and management processes as well as risks of Covid-19 and other transmission diseases including HIV.</p> <p>In this context, Labour Management Procedures (LMP) have been prepared as part of the SMP to be applied to Component 2 (Attachment 1A) The LMP will also include OHS issues and ensure that different project teams and workers will be provided with adequate resources, including personal protective equipment (PPE), accommodation, transport, first aid-kits available at working sites, and can be contacted/reached in case of emergency. The PMU of MPWT will ensure that Social Security (health and life insurance) is provided to all workers according to the Labour Law for all project consultants and workers involved in Component 2 before the commencement of project activity. Labour, especially construction labour and drivers have an increased risk for substance abuse, such as alcohol and amphetamine. Such substance abuse is often a contributing factor to accidents and incidents. The LMP also includes the risks and impacts of substance abuse including Codes of Conduct (CoCs). The CoCs which will be included in the letter of appointment for government staff and contractors.</p> <p>The LMP will also include dedicated Worker Grievance Mechanism for all groups of workers, to collect and address potential grievances coming from these workers.</p> <p>In addition, the LMP) will take into account the latest COVID-safe guidelines mandated by the government and/or best practice in the country, in order to maintain a safe working environment for workers and for the community and minimize the risk of COVID transmission. This should include hygiene practices, use of PPE and ensuring sick workers can self-isolate and access pay.</p> <p><u>Components 1 and 3:</u></p> <p>The PCU of EPFO will ensure full compliance with the proposed LMP (Attachment 1B) to be applied to Components 1 and 3.</p>



Key objectives	Relevance to the EWMP Project
ESS3 (Resource Efficiency and Pollution Prevention and Management): Relevance	
<p>Promote the sustainable use of resources, including energy, water and raw materials;</p> <p>Avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing pollution from project activities;</p> <p>Avoid or minimize project-related emissions of short and long-term climate pollutants;</p> <p>Avoid or minimize generation of hazardous and non-hazardous waste; and</p> <p>Minimize and manage the risks and impacts associated with pesticide use.</p>	<p>Inadequate waste control is one of key challenges that undermine the efficiency use of natural resources and cause environmental pollution, health and economic impacts. Solid and plastic waste is continuously increasing particularly in urban areas. Inadequate collection, recycling and disposal will lead to environmental problem including air pollution and emission, surface and ground water contamination.</p> <p><u>Component 2:</u></p> <p>For Component 2, the “Integrated Waste Management System (IWMS)” concept which attempts to address the whole waste value chain is applied for the technical design of the EWMP. The project will overall help to reduce waste to the KM32 landfill in Vientiane Capital through interventions at different nodes along the waste value chain. As part of EWMP IWMS, two waste transfer stations (at Km16 and Naxaythong district), and each will be equipped with sorting facilities to extract the recyclable wastes and compostable waste and minimize residual waste that will be brought to the KM 32 landfill in line with 3R principle.</p> <p><u>Components 1 and 3:</u></p> <p>For Components 1 and 3, efforts will also be made by EPFO and MONRE agencies to address these issues during the planning and implementation of the subprojects and/or proposed activities, especially those related to 3R, GCB, and NPAP through ESCOP (Annex 6A) or Do and Don’t Measures (Annex 6B)</p>
ESS4 (Community Health and Safety): Relevance	
<ul style="list-style-type: none"> Anticipate and avoid adverse impacts on the health and safety of project-related communities during the project life cycle from both routine and no routine circumstances; 	<p><u>Component 2:</u></p> <p>For Component 2, the main risks and impacts of the community health and safety include: (i) health damages of residents from household waste burning and open waste burning at landfill sites; (ii) impacts on the health of waste pickers at illegal dumpsites (as a result of increased waste dumping fees in the Km32) and the unmanaged open landfills; (iii) problems on respiratory system of people living nearby</p>



Key objectives	Relevance to the EWMP Project
<ul style="list-style-type: none"> • Promote quality and safety, and considerations relating to climate change, in the design and construction of infrastructure; • Avoid or minimize community exposure to project-related traffic road safety risks, diseases and hazardous materials; • Provide effective measures to address emergency events; and <p>Ensure the safeguarding of personnel and property is carried out in a manner that avoids or minimizes risks to the project-affected communities.</p>	<p>landfills from toxic smoke accidental landfills inferno, etc.; (iv) road damages and road accidents associated with transportation of waste to the landfill and recycling facilities; (v) the leachate from the landfill or recycling facilities, when not properly collected and treated may pollute the drinking water source for the communities; (vi) the bio-gas from landfills could cause fire and explosion if not properly collected and treated, threatening the safety of communities nearby; (vii) the nuisance odor from the landfills may cause impact on the health of residents nearby; (viii) risk of SEA/SH and VAC including COVID transmission and incidence of HIV/AIDS. Details will have to be identified in the site-specific ESMP to be prepared during the preparation of full ESIA for Component 2 (Annex 5)</p> <p>Community Health and Safety Plan (CHSP) as part of the SMP (Attachment 2).</p> <p>To address the risk of SEA/SH, the Project’s CHSP will include provisions to prevent and manage SEA/SH; violence against children (VAC) and incidence of HIV/AIDS. Among others, it will include provisions to promote local recruitment of the workforce, plus mitigation measures such as a worker codes of conduct (including requirements for both worker-community and worker-worker interactions), mapping of third-party service providers, plus specific actions (training, public awareness, etc.) to avoid sexual harassment, sexual assault, and exploitation and human trafficking.</p> <p>The Project also has a potential risk of spreading COVID19 to communities and the CHSP will also need to take into account the latest COVID-safe guidelines mandated by the government and/or best practice in the country.</p> <p>The full site-specific ESIA/ESMPs will be developed to include mitigation measures on pollution management in line with WBG EHS for Waste Management Facilities (Annex 5).</p> <p><u>For Components 1 and 3.</u></p> <p>The PMU of EPFO will ensure full compliance with the proposed CHSP (Attachment 2 of SIA-SMP) to be applied to Components 1 and 3.</p>



Key objectives	Relevance to the EWMP Project
ESS5 (Land Acquisition, Restrictions on Land Use and Involuntary Resettlement): Relevant	
<ul style="list-style-type: none"> • Avoid involuntary resettlement or, when unavoidable, minimize involuntary resettlement by exploring project design alternatives; • Avoid forced eviction; and • Mitigate unavoidable adverse social and economic impacts from land acquisition or restrictions on land use by: (a) providing timely compensation for loss of assets at replacement cost, and (b) assisting displaced persons in their efforts to improve, or at least restore, their livelihoods and living standards, in real terms, to pre-displacement levels or to levels prevailing prior to beginning of project implementation, whichever is higher; • Improve living conditions of poor or vulnerable persons who are physically displaced; • Conceive and execute resettlement activities as suitable development 	<p>Based on the updated information of the Component 2 activities and information on land owner provided by VCOMS, acquisition of private land and economic displacement are not required for the rehabilitation of Km32 Landfill and Transfer Station of Km16 because the land at both locations are exclusively owned by VCOMS. However, the Naxaythong location is being considered may also require land acquisition and/or result in impacts on livelihoods. By contrast, the establishment of air quality measurement networks is foreseen to be placed within the compound of district MONRE offices and as such, is unlikely to require land acquisition.</p> <p>A Resettlement Policy Framework (RPF) as part of SMP including measures for livelihood restoration for waste pickers was prepared and included in the SMP. The RPF specifies the requirements for the preparation of site-specific land acquisition and resettlement plans, as well as livelihood restoration plans, once the location of activities are known, and relevant designs have been prepared.</p> <p>For Components 1 and 3, activities will not require land acquisition, resettlement, etc. as minor civil works under GCR/3B will only related to waste bank activities (construction and operation of small plastic waste, paper waste, and recyclable wastes storage on public land (school, temple, market, etc.).</p>



Key objectives	Relevance to the EWMP Project
<p>programs, providing sufficient investment resources to enable displaced persons to benefit directly from the project; and</p> <p>Ensure that resettlement activities are planned and implemented with appropriate disclosure of information, meaningful consultation, and the informed participation of those affected.</p>	
ESS6 (Biodiversity Conservation and Sustainable Management of Living Natural Resources): Relevant	
<ul style="list-style-type: none"> • Protect and conserve biodiversity and habitats; • Apply the mitigation hierarchy and the precautionary approach in the design and implementation of projects that could have an impact on biodiversity; • Promote the sustainable management of living natural resources; and <p>Support livelihoods of local communities, including Indigenous Peoples, and inclusive economic development, through the adoption of practices that integrate conservation needs and development</p>	<p>For Component 2: No biodiversity significance as the project activities at Km 32 and Km16 will be carried out inside existing landfill and waste transfer station. Areas nearby the site were disturbed for agricultural purposes. Some rubber trees and banana trees remained on site.</p> <p>Site for new transfer station in Naxaythong is being identified. Screening criteria will be applied to minimize impacts on biodiversity.</p> <p>The Pre-ESIA has been prepared as a standalone document during preparation of this ESMF.</p> <p>The full ESIA and site-specific ESMP will be prepared by the MPWT PMU for C2 to ensure that the potential risks and impacts to biodiversity, ecosystem services and sustainable management of living natural resources are evaluated. The site-specific ESMP will set out appropriate material measures in compliance with environmental Law and ESS6 to ensure that environment receptors including plant species, aquatic, animals and their habitats are protected (Annex 5).</p> <p>Site selection criteria for Naxaythong site under C2 (Annex 3)</p>



Key objectives	Relevance to the EWMP Project
priorities.	
ESS7 (Indigenous People/Sub-Saharan African Historically Underserved Traditional Local Community) Relevant	
<ul style="list-style-type: none"> • Avoid adverse impacts of projects on communities of Indigenous Peoples, or when avoidance is not feasible, to minimize, mitigate, or compensate for such impacts, and to provide opportunities for development benefits, in a culturally appropriate manner; • Foster good faith negotiation with and informed participation of Indigenous Peoples when projects are to be located on traditional or customary lands under use by the Indigenous Peoples; and • Respect and preserve the culture, knowledge and practices of Indigenous Peoples; • Promote sustainable development benefits and opportunities for Indigenous People in a manner that is accessible, culturally appropriate and 	<p>The project area is culturally diverse, there 50 ethnic groups in Laos and the project covers the whole country as such this standard has been applied. It is likely that if there are ethnic groups in the project area they could be more adversely impacted due to their attachment to land, different cultural practices, low literacy levels, lack of Lao language (especially among women) and other vulnerabilities.</p> <p>An EGEF, as part of SMP, has been prepared consistent with ESS7 (Attachment 5), to screen the presence of ethnic groups with collective attachment to the project area following the four criteria included in WB’s ESS7, as well as procedures to conduct a Social Assessment and Ethnic Groups Engagement Plans (EGEPs) if needed. In addition, both the project’s EGEF and SEP include provisions to ensure meaningful and culturally appropriate consultations with EGs.</p> <p><u>For Component 2:</u></p> <p>As the Naxaythong location is being considered and will not be known prior to appraisal (for example PPP under Component 2 for waste recycling) an Ethnic Group Development Framework (EGPF) will be included in the SMP (Attachment 5). Where necessary Free, Prior, and Informed Consent (FPIC) will be used in the preparation of site-specific plans. There is a need to ensure that ethnic groups are not excluded from any benefits and there is equity in the benefits.</p> <p>The grievance mechanism for the project has been prepared and communicated taking into consideration the needs of the ethnic groups, and accessibility for ethnic groups to submit feedback or grievances. Whenever feasible, locally appropriate GRMs have been built upon. Also, whenever feasible, the GRM includes traditional grievance or conflict resolution systems. If EGEPs are prepared, the GRM may need to be adjusted in consultation with relevant ethnic groups.</p>



Key objectives	Relevance to the EWMP Project
<p>inclusive;</p> <ul style="list-style-type: none"> • Improve project design and promote local support by establishing and maintaining an ongoing relationship based on meaningful consultation with the Indigenous People throughout the project’s life’s cycle; • Obtain FPIC of affected Indigenous People; and <p>Recognize, respect and preserve the culture, knowledge, and practices of Indigenous People, and to provide them with opportunities to adapt to changing conditions in a manner and in a timeframe acceptable to them.</p>	<p><u>Components 1 and 3.</u></p> <p>The PMU of EPFO will ensure full compliance with the proposed SEP and EGEP as part of SS-ESMP to be applied to Components 1 and 3 (Attachment 5 of SIA-SMP)</p>
ESS8 (Cultural Heritage): <i>Relevant</i>	
<ul style="list-style-type: none"> • Protect cultural heritage from the adverse impacts of project activities and support its preservation; • Address cultural heritage as an integral aspect of sustainable development; • Promote meaningful consultation with 	<p><u>Component 2:</u></p> <p>Cultural Heritage impacts are unlikely to occur in C2 (Km 32 and Km 16 does not have identified cultural heritage sites). Naxaythong site will be screened that there will be no sensitive cultural heritage to be affected by the site.</p> <p>However, this standard is relevant because there might be tangible and intangible cultural heritage within the sites identified during the civil works/earth works.</p>



Key objectives	Relevance to the EWMP Project
<p>stakeholders regarding cultural heritage; and</p> <p>Promote the equitable sharing of benefits from the use of cultural heritage.</p>	<p>This will be determined by respective full ESIAs/ESMPs, and if this is the case, respective mitigation measures will be proposed to avoid or minimize any impact on cultural heritage. Where tangible or intangible cultural heritage sites are known to be in the vicinity of the proposed landfill sites, those sites will be excluded from consideration. The ESMF will provide an overview of steps to be taken by the agencies and other stakeholders in case of chance finds (this will be included in the ESMP to be prepared as part of full ESIA report).</p> <p><u>For Component 1 and 3.</u></p> <p>This standard is relevant because there might be tangible and intangible cultural heritage within the sites identified during small civil works and installation of WQ/AQ monitoring stations and TA related to 3R, NPAPs, and pilot investment projects/activities. The ESMF will provide an overview of steps to be taken by the Borrower and other stakeholders in case of chance finds (ESCOPE: Annex 6A).</p>
<p>ESS10 Stakeholders Engagement and Information Disclosure: <i>Relevant</i></p>	
<ul style="list-style-type: none"> • Establish a systematic approach to stakeholder engagement that will help borrowers identify stakeholders and build and maintain a constructive relationship with them, in particular project-affected parties; • Assess the level of stakeholder interest and support for the project and to enable stakeholders' views to be taken in to account in project design and environmental and social performance; 	<p>A Stakeholders Engagement Plan (SEP), including a GRM, has been prepared incorporating the findings from the pre-ESIA. The SEP will be implemented, updated, and disclosed throughout the different phases of the project life cycle. This was developed early in the project preparation process to inform engagement to address key risks and develop communication and engagement strategies and materials to effectively reach out to affected and interested stakeholders to ensure accessibility and culturally appropriateness. Stakeholder identification, analysis and engagement will inform assessment of both the social assessment and processes and practices prescribed in the ESMF. The approach to engagement activities will take into account the needs of ethnic groups, vulnerability, language, literacy as well as consent, and child protection measures, both as part of engagement and also assessment process. The engagement will ensure not only risks are managed but benefits are accessible to all.</p>



Key objectives	Relevance to the EWMP Project
<ul style="list-style-type: none">• Promote and provide means for effective and inclusive engagement with project-affected parties through the project life cycle on issues that could potentially affect them; and• Ensure that appropriate project information on environmental and social risks and impacts is disclosed to stakeholders in a timely, understandable, accessible and appropriate manner and format.	<p>The ESF instruments prepared include ESMF, SIA-SMP, preliminary ESIA, SEP and ESCP. Following review by the World Bank Task Team, EPFO, and DHUP, the draft ESF Instruments were revised and disclosed on 29 November 2022 at the EPF website⁷ and consulted with stakeholders at the national level on 20 December 2022. The findings from the national stakeholder consultation will be incorporated into the ESF instruments prior to project appraisal.</p>

⁷ <https://laoepf.org.la/en/esf-documents-for-ewmp/>



2.3 GAP ANALYSIS: WB ESF AND LAO LEGISLATION

18. This Section builds upon the information on relevant legislations of the GOL and requirements of WBs recent ESF. It summarizes significant gaps that are identified by comparing the requirements of WB's ESF and relevant national legislations conducted by the EPF consultant team. Generally, the GOL has established a comprehensive regulatory framework including various laws, decrees, and instruction/regulation to govern the environment, and utilizing and conserving natural resources with explicit and implicit relevance for the ESMF and Social Standards (SSs) application. Many of them have been revised, updated, and amended more recently. For all ESS relevant to the Project, national legislation exists, and no significant gaps have been identified. However, there are minor deviations that the ESMF and its E&S instruments address. Table 2-3 summarizes the key requirements defined in the legislative and regulatory framework of Lao PDR and each relevant WB ESSs.



Lao PDR Environmental and Waste Management Project (P175996)

Table 2-3: Gap Analysis of Legislative and Regulatory Framework of Laos PDR VS. Relevant WB ESSs

Requirement	The World Bank Standard Requirements	Government of Lao PDR's requirements	Key Difference between WB Standard Requirements and Lao's PDR relevant to the Project	Measures included in the Project Design and ESF Preparation and implementation
<p>ESS1: Assessment and Management of Environmental and Social Risks and Impacts</p>	<ul style="list-style-type: none"> Conduct an environmental and social assessment of the proposed project, including stakeholder engagement. Undertake stakeholder engagement and disclose appropriate information in accordance with ESS10. Develop an ESCP, and implement all measures and actions set out in the legal agreement including the ESCP; and Conduct monitoring and reporting on the environmental and social performance of the project against the ESSs. Identification and differentiated approach towards potentially vulnerable and disadvantaged groups as 	<ul style="list-style-type: none"> A broad guidance for E&S assessment is articulated in the Environmental Protection Law (2012), Article 21 (for IEE), and Article 22 (for EIA). Further guidance for the conduct of ESIA and ESMP is provided in the Decree on Environmental Impact Assessment (2019). The Decision on the Endorsement and Promulgation on the List of Investment Projects and Activities (No. 8056/MONRE, 2013) indicates that rehabilitation or construction of new landfill facilities required the conduct of EIA. However, the final clause of this Decision asserts that any projects that cause involuntary resettlement shall require the conduct of ESIA. 	<ul style="list-style-type: none"> No capacity of the project owner to implement and monitor the ESMP is required There is no provision for the "no project" option. No reference to institutional capacity development and training measures. No separate ESCP, SEP and/or EGEF is required by the Lao laws. 	<ul style="list-style-type: none"> The Project activities under C1 will continue to support GOL efforts to strengthen its capacity for waste and pollution management, and improve municipal solid waste management in target areas in Lao PDR and policy and regulations related to environmental risk management (ERM) measures such as EIA, IEE, SEA, 3R, NPAP, TA and capacity building of local authorities to be implemented under Component 1 will clearly support urban cleanliness, waste reduction, pollution control, and overall ERM capacity of GOL. This will indirectly impact the quality of health of residents, which will lead to healthy long lives, money savings on health medication and support for urban poverty alleviation. Application of site selection



Lao PDR Environmental and Waste Management Project (P175996)

Requirement	The World Bank Standard Requirements	Government of Lao PDR's requirements	Key Difference between WB Standard Requirements and Lao's PDR relevant to the Project	Measures included in the Project Design and ESF Preparation and implementation
	<p>this aspect may come up in relation to informal waste workers.</p>			<p>criteria for Naxaythong site under C2 (Annex 3)</p> <ul style="list-style-type: none"> • Full ESIA, ESMP, RAP, EGEP, etc. are required for the Project. The full site-specific ESIA and C-ESMP will strengthen social risk management aspects. • Capacity building/training on implementation of the ESF instruments during the Project preparation will be provided for MPWT PMU, EPFO PCU, VCOMS, SIAs and Grant Receivers. • Additional capacity development and training programs on safety and mitigation of social impacts during civil works for C2 with the support consultants are included in Project design and ESMP mitigation measures. • Provide adequate budget supports to build EPFO and all implementing agencies E&S capacity and facilitate effective



Lao PDR Environmental and Waste Management Project (P175996)

Requirement	The World Bank Standard Requirements	Government of Lao PDR's requirements	Key Difference between WB Standard Requirements and Lao's PDR relevant to the Project	Measures included in the Project Design and ESF Preparation and implementation
				ESMP implementation with the support from consultants.
ESS2: Labour and Working Conditions	<p>ESS2 establishes minimum requirements in the following areas to be observed:</p> <ul style="list-style-type: none"> • Terms and Conditions of Employment • Non-Discrimination and Equal Opportunity • Rights to Organize. • Prevention / restriction of child Labour • Prevention of forced Labour • Grievance Mechanism for Labourers • Identification of potential hazards • Provision of preventive and protective measures • Training of workers and maintenance of training records 	<ul style="list-style-type: none"> • The employee rights and working conditions are specified in the Labour Protection Law (2013) which has provisions that are consistent with the Bank's ESS2; • In addition, the Prime Minister's Notification on the Minimum Wage of Labour in Lao PDR (2018) also sets out a minimum wage of LAK 1.2million/month. • The Law on Grievance Redress (2016) also outlines conflict resolution procedures. 	<ul style="list-style-type: none"> • In Lao PDR, the Trade Union is managed under the government system which is not a collective association of workers. However, the WB's ESS2 outlines that the project will not restrict project workers from developing alternative mechanisms to express their grievances and protect their legitimate rights regarding working conditions and terms of employment. The Borrower should not seek to influence or control discriminate to retaliate against project workers who participate, or seek to participate, in workers' organization and collective bargaining or alternative mechanisms. • There is no specific national 	<p>The national Labour Law is generally consistent with ESS2 with a few exceptions. To address some of the gaps, the project's LMP (SIA-SMP Attachment 2 for C2 and 2B for C1,2 & 4) includes:</p> <ul style="list-style-type: none"> • Procedure to Prevent Child Labour and Forced Labour (PPCLFL). • Project Workers' Grievance Mechanism. • In addition, the LMP sets out requirements for additional measures to comply with ESS2, which will include: • Direct Project Workers' Occupational Health and Safety Strategy • Terms and Conditions of Employment for Direct Project Workers. • Environmental, Social, Health



Lao PDR Environmental and Waste Management Project (P175996)

Requirement	The World Bank Standard Requirements	Government of Lao PDR's requirements	Key Difference between WB Standard Requirements and Lao's PDR relevant to the Project	Measures included in the Project Design and ESF Preparation and implementation
	<ul style="list-style-type: none"> Documentation and reporting of occupational accidents, disease, and incidents. Emergency Preparedness; and Remedies for adverse impacts on workers safety, including occupational health, and safety and SEA/SH. 		<p>guideline for labour conflict resolution.</p>	<p>and Safety Specification (ESHSS) for contracts.</p> <ul style="list-style-type: none"> Community Labour Management Procedure. Provisions in location and site - specific ESMP Site-specific Occupational Health and Safety Plans (works) The project will only allow employment of people 18 years old and above.
<p>ESS3: Resource Efficiency and Pollution Prevention and Management</p>	<p>Resource Efficiency and Pollution Prevention requires project to:</p> <ul style="list-style-type: none"> Promote more sustainable use of resources including energy and water and the reduction of project related GHG emissions; and <p>Avoid or minimize pollution from project activities.</p> <ul style="list-style-type: none"> To avoid or minimize adverse impacts on human health and the environment by avoiding or minimizing 	<ul style="list-style-type: none"> Key legislation regarding resource efficiency and pollution prevention include the Decree on Lao PDR National Environmental Standards (2017); Ministerial Instructions on Hazardous Waste Management (2015); and the Law on Environmental Protection (2012); Decision on Pollution Control (2021), Decree on Energy Saving and Efficiency (2020), National Policy on Energy Efficiency 	<ul style="list-style-type: none"> Seasonal burning of waste and agricultural fields, and area-wide dust, may cause high concentrations during certain periods during the dry season both in urban and rural areas. A lack of enabling AQM framework, with unclear lines of responsibility and authority across jurisdictions or levels of government. Similar to AQM, WQM also faces capacity and resource 	<ul style="list-style-type: none"> The project has been designed to strengthen environmental protection systems, improve municipal solid waste management in selected cities in Lao PDR The standalone Pre-ESIA includes measures in compliance with the national regulation and ESS3 to ensure the rational and sustainable resource uses, management, and prevention the pollution through project activities of the project component 2



Lao PDR Environmental and Waste Management Project (P175996)

Requirement	The World Bank Standard Requirements	Government of Lao PDR's requirements	Key Difference between WB Standard Requirements and Lao's PDR relevant to the Project	Measures included in the Project Design and ESF Preparation and implementation
	<p>pollution from project activities.</p> <ul style="list-style-type: none"> To avoid or minimize project-related emissions of short and long-lived climate pollutants. To avoid or minimize generation of hazardous and non-hazardous waste. To minimize and manage the risks and impacts associated with pesticide use. 	<p>(2016), Law on Water and Water Resources (2017).</p>	<p>constraints including lack of guidelines, standard operating procedures (SOPs) and manuals for water quality monitoring and insufficient capacities of NRERI staffs on maintaining water quality monitoring (including limited staff knowledge and limited budgets to maintain water quality monitoring activities).</p> <ul style="list-style-type: none"> Solid waste generation has increased substantially over the years in the Lao PDR, due to rapid urbanization, economic development, and tourism growth. Municipal solid waste management (MSWM) in the Lao PDR is challenging as provinces and cities due to (i) insufficient waste infrastructures are also a challenge for GOL as well as Vientiane Capital, (ii) insufficient financial resources for waste 	<p>including site selection and design options, construction and disposal operation.</p> <ul style="list-style-type: none"> The full ESIA and ESMP will be prepared by MPWT PMU.



Lao PDR Environmental and Waste Management Project (P175996)

Requirement	The World Bank Standard Requirements	Government of Lao PDR's requirements	Key Difference between WB Standard Requirements and Lao's PDR relevant to the Project	Measures included in the Project Design and ESF Preparation and implementation
			<p>management and human, technical and operational capacities are typically low; (iii) a lack of subsidies for waste management and overarching legislation on solid waste management in Lao PDR; (iv) no adequate enforceable legislations and policies are in place for hazardous and toxic waste management including medical waste management.</p>	
<p>ESS4: Community Health and Safety</p>	<p>The Bank's Standard requires for Community Health, Safety and Security and requires projects to:</p> <ul style="list-style-type: none"> Avoid or minimize adverse impacts on the health and safety of project affected communities; and Ensure safeguarding project property and personnel is carried out in accordance with relevant human rights principles and in a manner that avoids or minimizes 	<ul style="list-style-type: none"> Key legislation for community health, safety, and security in Lao PDR include the Decree on Occupational Health and Safety (2019), Law on Road Traffic (2012), Lao PDR National UXO / Mine Action Standards (2012); and discharge / hazardous waste legislation. 	<ul style="list-style-type: none"> Currently, there is no national law, regulation or guideline specific to community health and safety. 	<ul style="list-style-type: none"> The Community Health and Safety Plan (SIA-SMP Attachment 2 for C2 and 2B for C1 & C3) provide guidelines on how to address the identification and mitigation measures associated with these issues. Specific guidelines have been provided in terms of Labour Management Procedures (SIA-SMP Attachment 2 for C2 and 2B for C1 & C3)



Lao PDR Environmental and Waste Management Project (P175996)

Requirement	The World Bank Standard Requirements	Government of Lao PDR's requirements	Key Difference between WB Standard Requirements and Lao's PDR relevant to the Project	Measures included in the Project Design and ESF Preparation and implementation
	risks to project affected communities.			<ul style="list-style-type: none"> • Code of Conduct (COC) including SEA/SH Action Plan is provided in (SIA-SMP Attachment 3A for C2 and 3B for C1 & C3)
ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	<ul style="list-style-type: none"> • Avoid or at least minimize involuntary resettlement wherever feasible by exploring alternative project designs and layouts; • Mitigate adverse social and economic impacts from land by: (i) Providing compensation for loss of assets at replacement cost; and (ii) Ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation and the informed participation of those affected; • Improve or at least restore the livelihoods and standards of living of 	<ul style="list-style-type: none"> • Key national legislation related to land acquisition and involuntary resettlement includes the Law on Land (2019); Forestry Law (2019), Law on Resettlement and Vocation (2018); and the Decree on Compensation and Resettlement (2016). 	<ul style="list-style-type: none"> • According to the Land Law (2019), Article 130: Acquisition of Customary Land Use Rights, rights can only be assigned to individuals that can demonstrate continual use of the land for more than 20 years. • However, the World Bank's ESS5 articulates that those who suffer negative social and economic impacts as a result of the acquisition of land for a project and / or restrictions on land use, may include those having legally recognized rights or claims to the land; those with customary claims to land; and those with no legally 	<ul style="list-style-type: none"> • The project's Resettlement Policy Framework (RPF) (SIA-SMP Attachment 4) introduces some additions to the provisions established at the Degree 84: <ul style="list-style-type: none"> ○ Avoidance of resettlement as the preferred option. ○ Rights of land users without formal title. ○ Alternative and/or substitute livelihood options. ○ restoration of livelihood activities ○ additional protection for vulnerable households ○ disclosure, consultation and informed participation arrangements.



Lao PDR Environmental and Waste Management Project (P175996)

Requirement	The World Bank Standard Requirements	Government of Lao PDR's requirements	Key Difference between WB Standard Requirements and Lao's PDR relevant to the Project	Measures included in the Project Design and ESF Preparation and implementation
	<p>displaced persons; and</p> <ul style="list-style-type: none"> • Improve living conditions among displaced persons through provision of adequate housing with security of tenure at resettlement sites. 		<p>recognized claims.</p>	<ul style="list-style-type: none"> • Provisions of the RPF, in line with ESS5, will apply in the project.
<p>ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources</p>	<ul style="list-style-type: none"> • The E&S assessment will consider direct, indirect and cumulative project-related impacts on habitats and the biodiversity they support. • The Borrower will avoid adverse impacts on biodiversity and habitats. • Where the project occurs within or has the potential to adversely affect an area that is legally protected, designated for protection, the Borrower will ensure that any activities undertaken are consistent with the area's legal protection status and 	<p>EIA process provides for analysis of all potential alternatives. There is no explicit rule providing for use of land already converted and to avoid land located within protected area, water catchment and area containing high forest.</p>	<ul style="list-style-type: none"> • Lack of clear reference to siting project on lands already converted. • In the hypothesis that no feasible alternative exists as demonstrated by an ESIA, there is no legal obligation to provide for compensation for conversion of non-critical habitats. • There is no mention of "critical natural habitats" or prohibition on investing in projects that would degrade or convert them. 	<p>The ESMF include activities that may cause "significant conversion or degradation of natural habitat or where the conservation and/or environmental gains do not clearly outweigh any potential losses" in the negative list.</p> <p>Measures and process to avoid and/or mitigate impacts on natural habitats has been included in the ESMF and Pre-ESIA.</p> <p>The full ESIA and ESMP will be prepared by MPWT PMU.</p>



Lao PDR Environmental and Waste Management Project (P175996)

Requirement	The World Bank Standard Requirements	Government of Lao PDR's requirements	Key Difference between WB Standard Requirements and Lao's PDR relevant to the Project	Measures included in the Project Design and ESF Preparation and implementation
	management objectives.			
ESS7: Indigenous People/Sub-Saharan African Historically Underserved Traditional Local Community	<ul style="list-style-type: none"> Requires the Borrower to avoid adverse impacts on communities of indigenous peoples and to engage with affected communities to ensure they have given their Free Prior and Informed Consent. The consultations should: (i) involve representative bodies and organizations and, where appropriate, other community members; (ii) provide sufficient time for ethnic groups' decision-making processes; and (iii) allow for the effective participation by ethnic groups in the design of project activities or mitigation measures that could potentially affect them either positively or negatively. Feedback on the project would be gathered 	<ul style="list-style-type: none"> The Decree on Ethnicity (2020) confirms that the GOL has special policies for ethnic, vulnerable and disadvantaged groups. The National Social Protection Strategy (2020) states that ethnic groups, women, children, vulnerable people and those living in remote areas are specially promoted to access education, health care and equal economic activities. 	<ul style="list-style-type: none"> The Land Law does not specifically mention customary to land used by ethnic and vulnerable groups who are often found to be present and have collective attachment to the forestlands in rural area in Laos. There is no sub-law registration with implementable procedures in place for registering communal and non-communal (individual) customary rights. This may negatively impact ethnic groups and other vulnerable communities, since excluding such communities from the benefits of land registration and overruling or replacing their actual customary land (e.g with smaller area or poorer quality of land) could increase inequality and their 	<ul style="list-style-type: none"> An EGEF has been prepared as a stand-alone document to cover the existing gaps. The EGEF provides proactive and inclusive approach and measures to ensure the vulnerable and ethnic groups will not be negatively affected by the project activities. The EGEF (SIA-SMP Attachment 5) includes requirements and process of engaging the ethnic groups in risks assessment, meaningful consultation, Free, Prior and Informed Consent (FPIC) to identify risk management and benefit engagement measures. In case of land-related impacts, the RPF will provide guidance in the development of RAPs aligned with the EGEF/EGEP



Lao PDR Environmental and Waste Management Project (P175996)

Requirement	The World Bank Standard Requirements	Government of Lao PDR's requirements	Key Difference between WB Standard Requirements and Lao's PDR relevant to the Project	Measures included in the Project Design and ESF Preparation and implementation
	<p>through separate group meetings with ethnic groups, vulnerable groups, including their traditional leaders, NGOs, community-based organizations, CSOs and other affected persons.</p>		<p>vulnerability.</p>	
<p>ESS8: Cultural Heritage</p>	<ul style="list-style-type: none"> Aims to protect cultural heritage through consultation procedures, community access and removal of replicable cultural heritage. Provides specific requirements for chance finds, consultation, community access, removal of replicable and non-replicable cultural heritage, as well as critical cultural heritage. 	<ul style="list-style-type: none"> Key applicable national legislation includes the Law on National Heritage (2013), Agreement of the National Assembly on Ethnicity (2008) and the Decree of the President of Lao PDR on the Preservation of Cultural, Historical and Natural Heritage (1997). Mandatory reporting to authorities (Ministry of Culture and Information and EPFO). The project owner and contractor must interrupt all construction activities and measures must be adopted to preserve the vestiges uncovered by chance until the classification of those assets 	<p>No significant gap. Reference to "chance finds" is formally lacking in applicable laws and regulations.</p>	<ul style="list-style-type: none"> This ESMF includes a Cultural Heritage Framework to be applied in case there is a risk of impacts on heritage, whether tangible or intangible.



Lao PDR Environmental and Waste Management Project (P175996)

Requirement	The World Bank Standard Requirements	Government of Lao PDR's requirements	Key Difference between WB Standard Requirements and Lao's PDR relevant to the Project	Measures included in the Project Design and ESF Preparation and implementation
		<p>or until conclusion of the archaeological research shall be prescribed by the Ministry of Culture and Information. The area of archaeological patrimony accidentally revealed must be delimited, as suitable and protected under the responsibility of the project owner and contractor.</p>		
<p>ESS10: Stakeholder Engagement and Information Disclosure</p>	<ul style="list-style-type: none"> Requires effective community engagement through disclosure of project-related information and consultation with local communities on matters that directly affect them. Provides specific requirements for Stakeholder Analysis and Engagement Planning, Disclosure of Information, Consultation and Indigenous Peoples. 	<p>GOL's requirements are covered by various legislations, especially those on consultation and grievance including the Constitution, the Law on Government (amended 2016), the Law on Handling Petitions (amended 2016), as well a subordinate decrees such as the EIA Decree (2019) and the Compensation and Resettlement Decree (2016), as well as the Public Involvement Guideline (2012) and the Ethnic Group Consultation Guideline (2013)</p>	<ul style="list-style-type: none"> There is a lack of clarity about when engagement activities can be considered meaningful. Those affected by a project can file grievances using the existing system, not a project-based system. There are also unclear procedures on public disclosure of E&S documents, and on how to respond to concerns and grievances of project-affected parties The ethnic group consultation guideline (2013) is the sole document 	<ul style="list-style-type: none"> The ESMF as well as this SIA-SMP discusses the requirements of the SEP in terms of consultations and disclosure. A SEP consistent with ESS10 has been prepared for this project. A SEP has been developed which details a GRM for the project covering all project aspects, including concerns about environmental and social impacts. The LMP in this SIA-SMP also describes a specific GRM for workers that contractors must have in place. The GRM must be accessible to



Lao PDR Environmental and Waste Management Project (P175996)

Requirement	The World Bank Standard Requirements	Government of Lao PDR's requirements	Key Difference between WB Standard Requirements and Lao's PDR relevant to the Project	Measures included in the Project Design and ESF Preparation and implementation
			requiring consultation with ethnic groups. The EIA decree only requires dissemination of information to them.	all stakeholders, in particular vulnerable, ethnic group people, and women and suitable receive and respond to SEA/SH.



3 SUMMARY OF ENVIRONMENTAL AND SOCIAL CONTEXT

19. The project detailed activities to be implemented under Components 1, 2, 3 are provided in Section 1.3 while the project locations are provided in Section 1.4. Section 3.1 provides brief overview on the general E&S background in Lao PDR while Section 3.2 provides information on solid waste management including health, legal, and institutional aspects. Section 3.3 provides brief environment baseline conditions of Vientiane Capital. Section 3.4 provide information of the selected sites to be implemented under Component 2B while more details description on the E&S baseline conditions of Km32 are provided in the standalone Pre-ESIA report.

3.1 OVERVIEW ON E&S CONDITIONS IN LAO PDR⁸

20. Lao PDR is a land-locked country located in Southeast Asia region, it shares border with Thailand, Vietnam, Cambodia, Myanmar and China with a total area of 236,800 km². About 80% of the country landscape is mountainous. In 2020, the country had 7.2 million people live in 18 provinces, with an estimated annual growth rate of 1.5%⁹. Vientiane is the capital and the largest city of Lao PDR; it had the land area of 3,920 km² with population of 787,529. The country has a total of approximately 1.3 million households with average household size of 5.3 people per family and population density of 31 people per km².

21. About 80% of the country landscape is mountainous and the remaining 20% comprising plateaus and lowland valleys along the Mekong floodplain. Approximately 58% of a total land is forest, 26.7% is potential forest (unstocked forest of regenerating vegetation and bamboos), 10.8% is agricultural land the rest proportions are water resource and infrastructure areas¹⁰

22. Lao PDR is characterized by a tropical climate, influenced by the southeast monsoon which brings 70% of annual rainfall and high humidity. There are two distinct seasons: the rainy season, or monsoon, from May to mid-October and the dry season from mid-October to April. Average rainfall can be as high as 3,000 millimeters (mm) per year. Mean annual temperatures of 20°C was observed in the northern and eastern mountainous areas and the plateaus, whereas temperatures are higher in the plains at 25-27 °C. Relative humidity typically ranges between 65%-80%¹¹. ()

⁸ Some of data and information are from Project Appraisal Document (PAD), October 2022

⁹ Lao Statistic Bureau, 2020a

¹⁰ <https://laos.opendevlopmentmekong.net>

¹¹ <https://climateknowledgeportal.worldbank.org>



Natural disasters, flood & drought

23. Lao PDR faces high disaster risk levels and is ranked 69th out of 191 countries by the 2019, due to extremely high exposure to flooding (ranked 6th), including, riverine and flash flooding. Lao PDR also has some limited exposure to tropical cyclones and their associated hazards (ranked 47th). Drought exposure is lower (ranked 115th) but must be monitored as hydropower development on the Mekong River significantly alters the hydrology of the region. Lao PDR's overall ranking on the INFORM risk index is somewhat exacerbated by its lack of coping capacity and to a lesser extent the vulnerability of its population¹².

24. **In Lao PDR, climate hazards such as droughts and floods are predicted to increase and exacerbate the degradation of natural resources, lead to losses in jobs and economic growth, and increase poverty.** Lao PDR faces a significant projected warmed climate against baseline conditions, with dry seasons getting longer and a projected increase in the number of hot days (> 35°C) rising from 40 days to 50-110 days per year, on average. The country is also exposed to major natural hazards with droughts and flooding becoming more severe and frequent. Lao PDR has extremely high exposure to flooding (including riverine and flash flooding) and increases in rain are projected to be between 10 and 30 percent, particularly in the east and south (PAD, October 2022)

Socioeconomic development

25. Despite being among the fastest-growing economies in the world before COVID-19, Lao's growth model is showing its limitations. Economic growth averaged about 7 percent over the two decades to 2019, but the economy's growth pattern was capital-intensive, resource-driven, and debt-fueled. Economic growth had been steadily decelerating from 8.0 percent in 2013 to 5.5 percent in 2019. Growth was predominantly driven by large foreign investments in hydropower, mining, and construction (of transport infrastructure), which provided few formal job opportunities.

26. Economic growth has been severely affected by the COVID-19 pandemic but is starting to recover gradually. Lockdowns, restrictions on economic activity, quarantine requirements, and social distancing measures have led to a reduction in employment and working hours. Real Gross Domestic Product (GDP) growth declined sharply from 5.5 percent in 2019 to 0.5 percent in 2020, owing to the wide-ranging economic impacts of COVID-19 – including the collapse of international tourism. Growth is estimated to have recovered to 2.5 percent in 2021.

27. Laos has made remarkable progress in reducing poverty over the past few decades, from 46.0 percent to 18.6 percent over 1992-2018 periods. Recent estimates show that the national poverty rate fell from 24.6 percent in 2012 to 18.3 percent in 2018, due to an annual

¹² <https://climateknowledgeportal.worldbank.org>



average GDP growth of about 7 percent during the same period.

28. Despite this progress, poverty in Laos remains high compared to its regional peers. A lack of non-farm job creation has limited gains in household income, especially at the lower end of the income distribution, weakening the impact of growth on poverty reduction and driving inequality. Despite improvement in farm incomes, poverty remains highly concentrated in agriculture. COVID-19 has set back progress on reducing poverty. Employment disruptions and remittance losses due to return migration resulted in a decline in household income, while rising prices put pressure on households' purchasing power.

29. Laos's rich natural resources and biodiversity continue to play a key role in the country's economic development prospects and resilience. The Lao population is directly dependent on forests, land, and related resources including non-timber forest products for livelihoods. Natural resources are furthermore critical for the national socio-economic development. Natural resource-based sectors contributed one-third of GDP in 2018, and the Lao natural capital value of assets were quantified at USD149 billion, with 78 percent coming from water and forests and a further 22 percent from agriculture. The natural resources are especially valuable in times of COVID-19 when thousands of migrant young laborers return home unemployed and without income.

30. While Laos is rich in natural resources, environmental degradation poses a threat to sustainable development and household livelihoods. As a result of agricultural expansion, mismanaged forest plantation development, shifting cultivation and unsustainable timber harvesting, forest cover decreased from 61 percent in 2000 to 58 percent in 2015 and the target of 70 percent in 2020 was not achieved but postponed to 2030. The annual cost of environmental degradation is estimated at 19.3 percent of GDP in 2017.

31. The most important environmental problems are associated with environmental health, representing an annual cost equivalent to 14.6 percent of GDP. Most costly are those related to air pollution, as well as inadequate disposal and widespread burning of solid waste, water pollution and inadequate wastewater treatment and lead exposure. As elsewhere in the world, the distribution of pollution impacts falls primarily on the vulnerable.

Ethnicity

32. The country is ethnically diverse country in Southeast Asia. The Lao government currently recognizes 160 ethnic subgroups within 50 ethnic groups. Out of the total population, the Lao ethnic group accounted for 53 percent, followed by Khmu (11%), Hmong (9%) and other ethnic groups (27%). Lao is official language and over 80 languages used by different ethnicities in Lao PDR and the most common are Khmu and Hmong languages. Other minority languages include Akha, Arem, Bana, Katu, Ksingmul, Maleng, Lamet, Phai, Tai Daeng, Phu Thai, and Tai Dam. The most vulnerable ethnic minorities have very few assets, are geographically isolated (mostly highlands), and face language and cultural barriers. Buddhism is the pre-dominant faith practiced by the population in Lao PDR. Sixty-five percent of the populations are Buddhist, while Christians constituted nearly 2%, and 32% reported



themselves as having no religion or being animist.

Pollution level, social and health aspect

33. Despite improvements cities and districts suffer from lack of infrastructure and municipal services. Urban population growth in Laos was the highest in Southeast Asia in 2021 at 3.2 percent which was twice the average of the East Asia Pacific region for the same year. City limits have expanded but often in the absence of spatial planning and urban development planning.¹³ The continued growth of the cities will require higher levels of infrastructure and municipal services, which are currently facing underinvestment together with weak institutional capacity in policy, planning implementation and enforcement.

34. Pollution levels in Lao PDR have severe public health and economic impacts and need improved monitoring and regulatory oversight, and improved environmental, pollution and solid waste management is emerging as a priority for the GOL. The most important environmental problems are associated with environmental health, representing an annual cost equivalent to 14.6 percent of GDP¹⁴. Most costly are those related to air pollution, as well as inadequate disposal and widespread burning of solid waste, water pollution and inadequate wastewater treatment and lead exposure. As elsewhere in the world, the distribution of pollution impacts falls primarily on the vulnerable.

35. Seasonal burning of waste and agricultural fields, and area-wide dust, may cause high concentrations during certain periods during the dry season both in urban and rural areas. Household use of solid fuels for cooking is also contributing to elevated levels of PM2.5 in rural villages as well as in urban areas. In Lao PDR, environmental pollution contributed to 10,000 deaths in 2017 (22 percent of all deaths in Lao PDR) and 27 percent of these deaths were from ambient air pollution. The cost of health effects from ambient air pollution in 2017 amounted to a 3.5 percent equivalent cost of GDP. Air quality is identified as a priority environmental issue in the 9th National Socio-Economic Development Plan (NSED),¹⁵ and the MONRE has been taking steps to improve its capacity for air quality monitoring with focus on training of staff at central level and provinces and increasing the number of air quality monitoring stations.

36. Water pollution is also a significant environment challenge for Laos, and the GoL has prioritized water quality management (WQM) as a national priority in the 9th NSED. Using

¹³ Government of Lao PDR (2021). National Progress Report on the Implementation of the New Urban Agenda. Ministry of Public Works and Transport.

¹⁴ Ibid.

¹⁵ Priority air quality measures include (i) conducting environmental quality inspections, in particular, on air quality (PM 2.5), establishing a database system and collecting information on sources of pollution; (ii) implementing measures to reduce and prevent bush fire, haze and slash and burn agricultural practices at all hotspots; and (iii) solve air pollution problems.



2017 data, Larsen (2019) estimated that about 1,549-3,002 deaths occur annually in Laos due to water pollution, and the annual cost of water pollution was estimated at 2,745-5,384 billion Lao kip (LAK) which is about 1.95-3.82 percent of 2017 GDP.¹⁶ Two major sources of water pollution in Laos are fecal contamination or microbial pollution of drinking water, and arsenic in groundwater tube wells in central and southern parts Laos that are used for drinking.¹⁷ Of the two, microbial pollution accounts for the greater share (92 percent) of health impacts and mortality. The use of unprotected drinking water sources declined from 24 percent in 2011/2012 to 16 percent in 2017.¹⁸ As about 15 percent the population to date still rely on natural sources (surface water and groundwater) for drinking water, water quality monitoring of these sources is of high priority. Priority activities under the NSEDP-9, include the development of management plans to allocate and use and manage water resources efficiently, effectively and sustainably, and to establish strategies and policies at the national and local levels to encourage effective investment in appropriate sanitation services for water resource management and use.

37. While the amount of solid waste generation has substantially increased, the infrastructure for collection and sanitary disposal has not kept up with the demand, causing significant environmental problems. Waste collection and transfer systems to the dumpsites are not properly organized (waste collection trucks are not covered, overloaded and waste leakage before it even gets to dumpsite). Landfills in Lao PDR are usually operated as open dumpsites without proper waste and leachate treatment, with the landfills of Vientiane or secondary cities such as Luang Prabang or Savannakhet being no exception. Currently, approximately 30 controlled landfills and 60 open dumps are in operations in Lao PDR. Waste dumping is done without compaction and disposal planning. There is a high risk that toxic waste components are or will in the future contaminate soil at adjacent farmland, surface water bodies and groundwater. Uncollected methane from anaerobic decomposition of organic waste significantly contributes to greenhouse gas emissions and poses a high risk of landfill fires.

38. Medical waste treatment facilities are still limited with two medical waste incinerators in Vientiane while medical wastes are placed in landfills in other places. Inadequate solid and plastic waste management system leads to widespread practices of open burning, household burying, littering along roadsides and rivers, and dumping in vacant lands which has

¹⁶ Larsen, B. 2019. Economic Assessment of Major Environmental Health Risks in Lao PDR. Report prepared for the World Bank. Washington D.C.: World Bank.

¹⁷ Ibid.

¹⁸ Larsen, B. 2019. Benefit-Cost Analysis of Interventions to Address Priority Environmental Health Risks, in Sánchez-Triana, Ernesto. 2021. Environmental Challenges for Green Growth and Poverty Reduction: A Country Environmental Analysis for the Lao People's Democratic Republic. World Bank, Washington, DC. © World Bank. <https://openknowledge.worldbank.org/handle/10986/36266> License: CC BY 3.0 IGO



contributed to pollution generation. Household burning of waste is one of the major sources of ambient air pollution in VTE capital. Open burning and occasional accidents, such as inferno, at landfill sites could also aggravating the already pressing air pollution issues. Toxic waste components are contaminating surface and groundwater, including of adjacent farmland. Uncollected methane significantly contributes to national greenhouse gas emissions and results in a high risk of landfill fires.

39. Plastics pollution is an increasing concern in the country. The amount of plastic waste is continuously increasing particularly in urban areas and often remains uncollected. In Vientiane, plastics constitute around 12 percent of the total waste stream. In a series of studies, the priority plastic items ending up in the environment and waterways were identified as: drinking bottles; caps and lids; bags; cups; food containers; and straws. In major cities such as Vientiane, Savannakhet, and Pakse, plastic waste is a key factor in blockage of drainage systems causing sudden flooding during rains. In key tourism hotspots such as Luang Prabang or Vang Vieng, widespread plastics littering poses a substantial threat to the touristic value. Fishers throughout the country report catching plastics almost every single time they are out fishing, and a study at the largest marshland of Vientiane found high amounts of microplastics in fish, surface water, and sediments. In addition, burning of plastics is widespread, contributing to air pollution and causing respiratory health issues. Lao PDR has seen an almost 10-fold increase in plastic waste imports from 2018 to 2019 due to the recent import regulations by China and other countries in the region. The quality and recyclability of the waste imports are unknown, and the capacity to cope with the large amounts of plastic waste in Lao PDR is not present.

40. Women and children in the informal waste sector tend to be socially disadvantaged and are exposed to health and safety threats posed by inadequate solid waste management. Their contributions to recovery and recycling in the context of underdeveloped formal waste management systems are largely overlooked and unsupported. Improving the management of waste collection systems must consider the informal sector, where substantial amount of waste pickers are women, and work in hazardous and unsanitary environments without adequate protection and safety.

41. Due to the lack of appropriate collection systems, open burning, household burying, littering along roadsides and rivers, and dumping in vacant lands are widely spread practices in both urban and rural areas. Illegal dumpsites are also common in urban areas. Open waste burning contributes to respiratory infections for urban residents resulting in significant health damages and lost working days, and further aggravates the severe air pollution in the country. Poor and vulnerable populations are the most likely to suffer from inadequate sanitation due to uncollected waste, which can be a heavy financial burden through health-related expenditures and lost productivity.



3.2 SOLID WASTE MANAGEMENT IN LAO PDR

42. **Solid waste generation has increased substantially over the years in the Lao PDR**, due to rapid urbanization, economic development, and tourism growth. Municipal solid waste (MSW) generation in Lao PDR was estimated to be 0.75 kg/capita/day and the total waste generation is approximately 970t/day in Vientiane Capital in 2020¹⁹ which is one of the lowest amounts in the Asia and Pacific region. However, the average waste generation in the major cities varies in the region with reported amounts ranging from 0.65-1.4 kg/capita/day, depending on the sources²⁰. Based on the average GDP growth rate of 6%, Global Green Growth Institute (GGGI) has estimated that total MSW generation amount will increase up to 1513 t/day in 2030 if no waste reduction effort is taking place.

43. **Plastics are an increasing proportion of the solid waste composition as consumption of single-use plastics is rapidly increasing in the Lao PDR and particularly in urban areas.** As much as 24% of the waste found in Lao cities is plastic. A 2020 World Bank study of six Lao cities found that 95% percent of plastic pollution is caused by only 10 items — all single-use plastics. Single-use food and drink packaging, including plastic bottles, cups, and containers, is the top plastic product category, combined accounting for more than 50% of plastics leakage. Plastic bags alone account for 23%. The hospitality and tourism sectors have been identified as key contributors to plastics pollution, with centers of restaurants, cafes and bars, and tourist activity being linked to the majority of plastic pollution hotspots. The increase in single-use plastics due to COVID-19 and escalating plastic waste imports since 2018 (a more than 10-fold increase from 2018 to 2019), are making the problem worse.

44. PDR are small in population, with only the capital city Vientiane having a population of more than 100,000 people and few high-rise buildings. City centres are not very densely built up and have wide peri-urban areas around them, requiring trash collection and recycling transportation. Waste collection schemes currently exist only in (parts of) the larger cities in the country. Collection of recyclable materials is informal and focuses only on materials for which there is an attractively priced market. When prices drop, specific materials may no longer be collected. In rural areas a market for some recyclable materials is lacking (e.g., plastic bottles) due to lower resale value and higher transportation costs. Collection of recyclable materials is mainly implemented by 3 actors: informal door-to-door collectors of recyclables; formal waste collectors separating valuable materials during their regular collecting rounds; and waste pickers (formal/informal) collecting at waste disposal sites. Waste separation at source is rare, except for some higher value materials such as scrap metal, used engine oil and re-use of glass beer bottles by the beer factories. Cleaning of

¹⁹ GGGI, Sustainable Solid Waste Management – Strategy and Action Plan for Vientiane 2021-2030, 2021

²⁰ E.g. Tokodai, 2017; Climate & Clean Air Coalition, 2015; Fourth Regional 3R Forum in Asia, 2013; GGGI, 2018



recyclable materials, such as plastic bags can add value, but is rare.

45. Waste collection in the country is largely limited to the urban centres but remains at low levels. While no accurate figures exist, it is estimated that in Vientiane city only around 30-50% of the waste generated, and only about 25% of household waste, is collected and transported to the landfill sites. Similar figures are estimated for secondary cities such as Savannakhet, Luang Prabang, and Champassak. The most reliable data is from Vientiane Capital where the waste generation has been estimated to 0.65 kg/person/day²¹. It is generally the case that waste generation is higher in urban areas than in rural areas and assuming a waste generation in urban areas of 0.65 kg/person/day, a waste generation in rural areas with road access of 0.5 kg/person/day and a waste generation in rural areas without road access of 0.3 kg/person/day, the total annual waste generation in 2020 would then amount to approximately 1.48 million tons. About 50 % of the wastes are disposed in open dumps. Hazardous waste is not collected or treated separately from general waste, resulting in toxic materials and medical waste being disposed of together with municipal waste. Due to the lack of appropriate collection systems, open burning, household burying, littering along roadsides and rivers, and dumping in vacant lands are widely spread practices in both urban and rural areas. Illegal dumpsites are also common in urban areas. Open waste burning contributes to respiratory infections for urban residents resulting in significant health damages and lost working days, and further aggravates the severe air pollution in the country. Poor and vulnerable populations are the most likely to suffer from inadequate sanitation due to uncollected waste, which can be a heavy financial burden through health-related expenditures and lost productivity.

Regulations and institutional arrangements

46. A clear institutional and specific regulatory framework for solid waste management is missing. At the national level, two main bodies are responsible for issues related to solid waste management are implemented mainly through two ministries. MPWT mainly responsible for construction of infrastructures while MONRE is tasked with a regulatory, supervisory and supporting role. The specific responsibilities of different central governmental agencies are however not clearly defined. MONRE's main tasks and responsibilities include the preparation of environmental laws and regulations; however few of these specifically target the solid waste sector. Urban Development Administrative Authorities (UDAAs), at provincial level are the main bodies tasked with solid waste management issues but undefined responsibility at the national level affects solid waste management at the local level in policy implementation, budget allocation, and provision of services.

²¹ Global Green Growth Institute 2018, Solid Waste Management in Vientiane, Lao PDR, Situation assessment and opportunities for waste-to-resource



47. In addition, regulatory oversight of solid waste management is limited and local governments (LGs) lack capacities for solid waste operations. Solid waste services are often outsourced to the private sector with limited financial sustainability of operations. UDAs are not equipped with sufficient budget and staffing to provide the regulatory oversight and services required. UDAAs do not receive public funding from the government for solid waste management and generate revenue through waste collection and landfill tipping fees which are spent for O&M. Many UDAs outsource (part of their) waste collection and disposal to private companies while sometimes also running direct operations in selected service areas. For example, in Vientiane around 10 collection companies currently operate in addition to UDAAs' own collection services. Services are however hampered by the general (i) lack of performance benchmarks and key performance indicators in the contracts and lack of regulation, monitoring and reporting; and (ii) a lack of financial sustainability to extend services. In Lao PDR, waste collection companies collect fees directly from households typically upon collection of waste. There is no enforcement mechanism for households to pay for waste services, thus the collection companies limit their services to more profitable urban centers and areas with ability and willingness to pay as well as to public institutions, and the commercial sector in order to achieve cost recovery.

48. The priority challenges within the solid waste sector can be summarized as follows. (a) lack of a clear legal framework for solid waste and pollution management and policies and regulations on pollution and solid waste management; (b) lack of capacities at national level to provide regulatory oversight; (c) lack of monitoring and enforcement capacities for environmental pollution (d) local governments are in charge of solid waste management but lack of capacities for operations, monitoring and regulations; (e) lack of financial sustainability due to limited willingness/ability to leading to partial services; (f) lack of proper treatment, recycling and disposal infrastructure causing environmental pollution and severe health and economic impacts; (g) strong increase of single-use plastic items and widespread plastics pollution. The project will address these key challenges and priorities at both national and local levels.

3.3 BRIEF BACKGROUND OF VIENTIANE CAPITAL

49. Vientiane is the capital and the largest city of Lao PDR located on the curve of Mekong River bordering Thailand. It has the land area of 3,920 km². It is divided administratively into 9 districts namely Chanthabouly, Sikhottabong, Xaisethha, Sisatthanak, Xaithany, Naxaythong, Hatxayfong, Pakngum, and Sengthong (Figure 3-1). Vientiane is the economic center of Laos. The city had a population of 948,477 as of the 2020. Vientiane topography is lowland valleys along the Mekong floodplain between 300 and 1284 meters above sea level. The majority of population is dominated by Lao Tai followed by Hmong and Khmu.

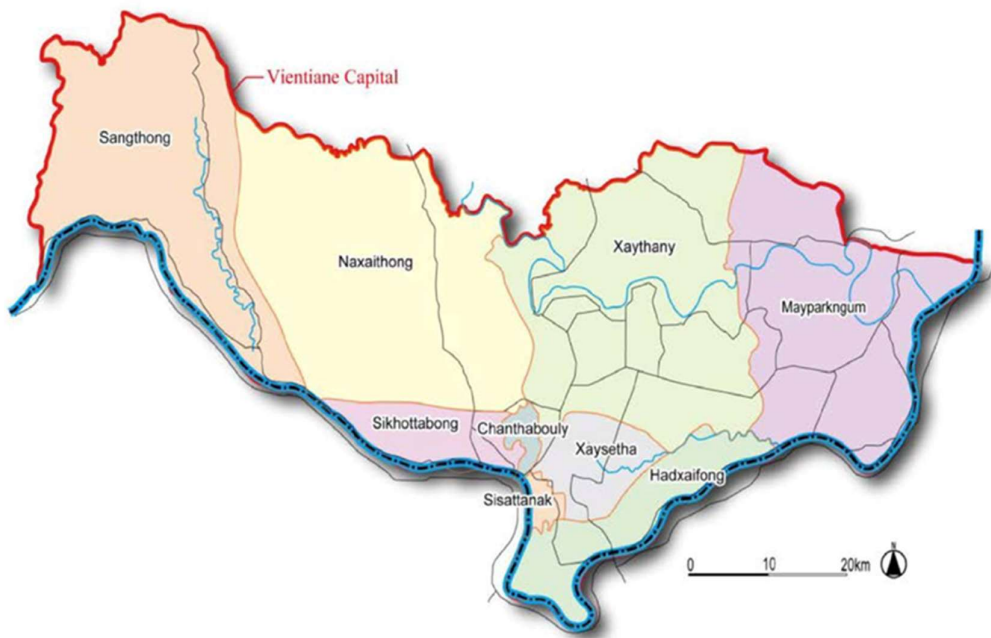


Figure 3-1 Map of Vientiane Capital (JICA, 2011a)

50. A dominant land use type in Vientiane capital is forest area, which occupied about 68% of total area, followed by 17% of paddy area. Rapid economic development and population growth is expected to affect the land use pattern. The built-up area doubled from approximately 3% of total area in 1995 to 6% in 2005²².

51. Much of the land to the west and northwest of the main urban centre is forested and hilly in parts with the peaks of Phusang (1,666 metres) and Phu Khao Khuay (1,039 metres) and a small area in the northeastern part at the rim of the forest protected by the Phu Khao Khuay National Biodiversity Conservation Area. The protected reserves in the Vientiane capital are the Houay Ngang Forest and the Phou Phanang National Biodiversity Conservation Area (which covers much of the forest in the west), although Phou Khao Khuay NBCA borders the northeast. The Houay Ngang Forest Reserve, within Vientiane, has many species of birds. The Nam Leuk, Nam Gnum and Mekong River also flow through the prefecture.

Waste Management

52. Currently there is no regulation on municipal solid waste management (SWM), however the agreement of waste collection service in Vientiane Capital is applicable, while the waste collection fee is set by Vientiane City Office for Management and Service (VCOMS). VCOMS is responsible for management of the Km32 and Km16 while solid waste

²² JICA: The Project for Urban Development Master Plan Study in Vientiane Capital A Brochure of the Final Report, March 2011



management in Naxaythong district is responsible by the Urban Development Administrative Authority (UDAA).

53. VCOMS is responsible for solid waste management policy development in Vientiane Capital. The UDAA of Naxaythong works under of District Administration Offices and is responsible for SWM operation within the district. There are three permanent staffs in the Naxaythong UDAA that are responsible for daily SWM.

Waste Generation and Collection

54. Vientiane capital has 161, 655 households with a total population of 948,447 people²³ as of 2020. The waste generation per capita in Vientiane is 750g/day², while the total household waste generation was calculated as 711 tons/day according to the Vientiane Capital population data from LSB. With waste generated from other sources such as business entities and public buildings counted, the total waste generation in Vientiane amounted to approximately 970 tons/day in 2020²⁴.

55. To calculate projected waste generation per capita from 2021 to 2030, the World Bank’s regression model (World Bank, 2018) is used as a methodology to capture the correlation between GDP per capita and waste generation per capita. The World Development Indicator’s GDP per capita (2011 PPP international \$/year) is applied to the GDP per capita projection for target year from 2021 to 2030 and to determine change in the proxy waste generation rate. The population projection data from LSB is used to calculate the projection of the total household waste generation from 2021 to 2030. The average annual GDP per capita growth rate of 6% from 2021 to 2030, obtained from the time series analysis on the GDP per capita PPP projection, is applied to estimate the volume of other waste generation from 2021 to 2030. The Table 3-1 below presents the projected waste generation from 2021 to 2030.

Table 3-1 Projection of MSP SMP generation in Vientiane from 2021-2030

2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Population (person)									
968,999	289,289	1,009,272	1,028,914	1,048,170	1,067,286	1,068,217	1,104,975	1,123,532	1,141,911
Household waste generation per capita (g/person/day)									
766	783	799	816	833	850	867	884	901	918

²³ Lao Statistics Bureau (LSB)

²⁴ Sustainable Solid Waste Management, Strategy and Action Plan for Vientiane 2021-2030, GGGI in 2020



Household waste generation amount (Ton/day)									
742	774	807	840	873	907	926	977	1,012	1,048
Other waste ²⁵ generation amount (Ton/day)									
275	291	308	327	347	367	389	413	438	464
MSW generation (Ton/day)									
1,017	1,065	1,115	1,167	1,219	1,274	1,315	1,389	1,450	1,512

Source: Sustainable Solid Waste Management, Strategy and Action Plan for Vientiane 2021-2030, GGGI in 2020

56. Naxaythong is the proposed district for installing a new waste transfer station (new transfer station to be developed under this Project) under the Component 2. The amount of waste generated in Naxaythong district (2019) is 101.1 tons/day, the amount of waste collected is 40.1 tons/day and collection rate is 39.7%. Since it is difficult to collect actual SWM data of Naxaythong district due to COVID-19 issue, these values are estimated based on the waste generation and waste collection volume of the entire Vientiane capital in 2019 as described in the JICA report of 2021 and the population ratio of each district in 2019 (Table 3-2). Although there is a difference between the collection volume calculated from the population ratio of each district and the collection volume calculated from the number of units contracted for collection services, the collection volume is calculated from the population ratio of each district because many residents dispose of waste without a collection service contract.

Table 3-2: Waste Generation and collection Amount in Vientiane Capital

No	District	Population ²⁶	Waste Generation (ton/day) ²⁷	Collection (ton/day)
1	Chanthabouly	52,875	67.4	27.2
2	Sikhottabong	115,201	146.9	59.4
3	Xaisethha	109,188	139.2	56.3
4	Sisatthanak	59,200	75.5	30.5
5	Xaithany	194,970	248.6	100.4
6	Naxaythong	79,266	101.1	40.8
7	Hatxayfong	95,679	122.0	49.3
8	Pakngum	50,570	64.5	26.1
9	Sengthong	30,580	39.0	15.8

²⁵ Other waste include waste from commercial areas (café, restaurants, hotels) and public buildings

²⁶ Vientiane Health Department (2019)

²⁷ Total waste generation and collection of Vientiane capital (2020)



No	District	Population ²⁶	Waste Generation (ton/day) ²⁷	Collection (ton/day)
	Total	787,529	1,004	405.8

3.4 BRIEF BACKGROUND OF PROPOSED SITES TO BE INVESTED UNDER C2

57. The investments will be divided into three locations strategically selected (at the existing landfill Km32, existing waste transfer station Km16, and in Naxaythong district) to improve the integrated waste management in Vientiane Capital to maximize the waste-to-resource opportunity, to minimize the waste volume that will be landfilled at the Km 32 landfill, and to mitigate the negative environmental and social impacts from waste management.

58. The brief baseline of the three sites to be invested under C3 is provided below while the detailed E&S baseline conditions for the Km 32 are provided in the Pre-ESIA (see **Annex 7** for Executive Summary of the Pre-ESIA) and more social baseline conditions of the Km16 and Naxaythong sites are provided in the SIA-SMP.

3.4.1 Vientiane Capital Landfill at Km32

59. The preliminary design of the proposed Km 32 Landfill Project includes the following main activities and facilities:

- Civil works: capping waste cells, installing landfill liner, constructing an internal access road in the landfill and regulation pond and treatment facility, installing methane gas capturing pipes and leachate collection piping system, developing new sanitary landfill cells with waste reception area, developing hazardous waste storage, developing bathroom facilities including changing rooms (separate for male and female waste pickers and workers) and upgrading of the administration office including rest rooms, canteen, training rooms.
- Equipment: a weighbridge and washing crushing and pelletizing equipment at the waste management community centre, a solar plant for on-site electricity generation, and trucks and other equipment for landfill operation.
- Figure 3-2 shows the Conceptual Landfill Design. More details are provided in the Annex 7 – Executive Summary of the Pre-ESIA for the Km32.



Figure 3-3 the Conceptual Landfill Design (Pre-FS Report, June 2022)

60. The Km 32 Landfill Project is proposed to be developed at Vientiane Capital's existing Km 32 landfill located in Ban Naphasouk, Xaythany District, and Vientiane Capital. The landfill is connected to Road No. 13 South by a 2.8 km two-lane unpaved access road (see Figure 3-5). The total area of the landfill site is 100 hectares of which 50 hectares on the north side are granted as a 50-year concession to Khouanmouang Group Company, where the concessionaire plans to make a waste complex management system that includes recyclable waste plants and a Refuse Derived Fuel (RDF) plant. This part is currently inactive. This facility does not fall into the definition of Associated Facilities defined in the ESF which requires that Associated Facilities is necessary for the project to be viable and would not have been constructed, expanded or conducted if the project did not exist. The southern part of the site (50 ha) is managed by Vientiane City Office for Management and Service (VCOMS). VCOMS has a contractual arrangement with a private company under which the company implements waste management-related administrations, fee collection, data collection, waste collection, and landfill operation and management. This private company, as a VCOMS's contractor, will also have ES related responsibilities as a contractor of VCOMS under the project i.e., on labor procedures, OHS, grievance mechanism, and livelihood options offered to informal waste workers.

61. The 50 ha large southern part managed by VCOMS constitutes the Km 32 Landfill Project site.

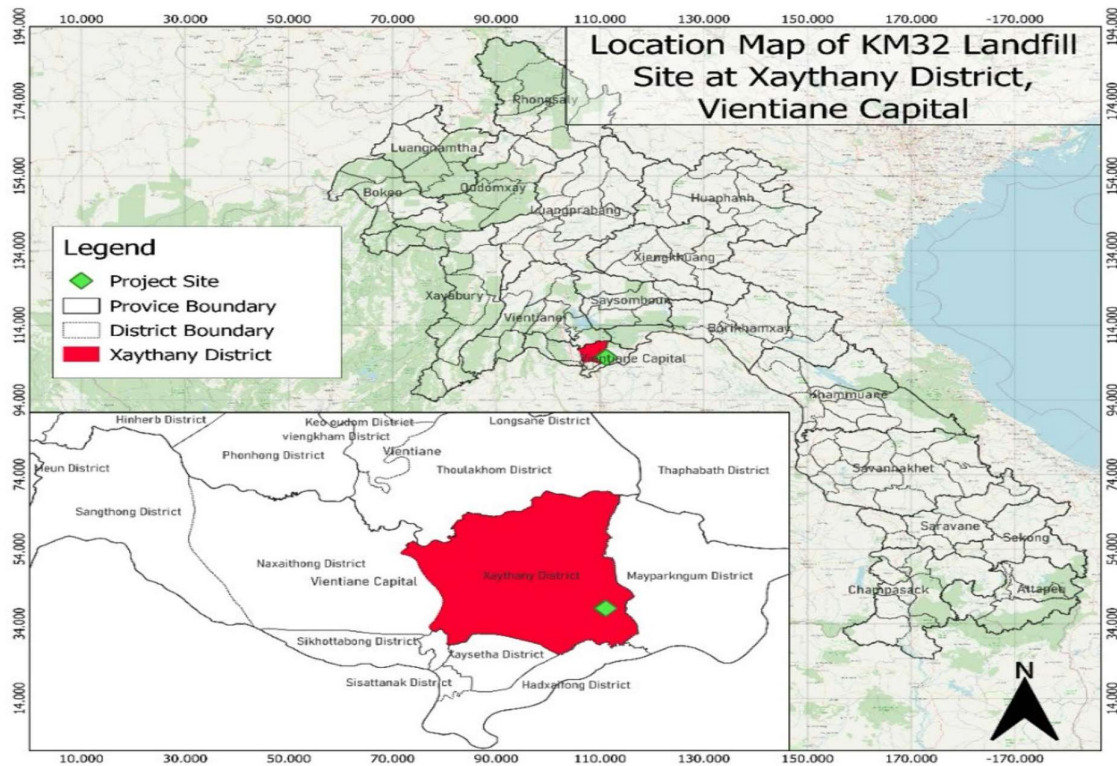


Figure 3-4 Location of Xaythany District, Vientiane Capital (Pre-FS Report, June 2022)

62. The landfill compound in the existing landfill boundary facility includes (1) a control entrance and fence, (2) administration office, (3) weighbridge, (4) waste incineration plant only for medical waste, (5) two sludge ponds (6) wheel-washing, (7) storm-water ponds (8) recyclable plant (one active, and one disabled), and (9) a garage, truck parking, and recyclable waste storage. See Figure 3-6 for surrounding of the Km32 Landfill Project Site.



Figure 3-5 Surrounding of the Km32 Landfill Project Site

63. More details on the E&S baseline conditions of the Km32 are provided in the standalone Pre-ESIA report.

3.4.2 Waste Transfer Station at Km16

64. Under C2, upgrade the KM16 transfer station in Xaysettha District to be an Integrated Waste Management Facility with financing for:

- Civil works - waste collection, sorting, and material recovery facilities; upgrading the existing composting plant;
- Separate bathroom facilities including changing room for males and female workers and waste pickers.
- Equipment - a weighbridge; transportation truck, wheel loader, forklift and other equipment for transfer station operation.

65. The integrated waste management facilities will provide job opportunities and priority will be given to Km 32 waste pickers with quotas for women.

66. The Project will improve workplace safety for women and men through providing personal protective equipment (PPE) and safety training as by improving the security standards and protocols at the waste facilities.

67. The Km 16 Transfer Station was built with technical and financial support from JICA and commissioned in January 2016. The 2-ha large waste transfer station is located in Ban Nahai, Xaysettha District, Vientiane Capital (Figure 3-7). The transfer station only reloads waste from smaller trucks to larger trucks without compaction or sorting. The waste is transported to the



Km 32 Landfill. Currently, the Transfer Station only receives commercial and domestic solid waste.

68. In 2013, prior to establishing the transfer station, an Initial Environmental Examination (IEE) was undertaken and the Vientiane Capital Department of Natural Resources and Environment issued an Environmental Compliance Certificate.

69. The existing facilities include:

- A main building 20 m x 40 m
- An office building
- A parking lot
- A weighbridge
- A workshop
- A wastewater retention pond, and
- A composting plant.

70. The site is accessible from the 450-highway through the access road that is divided into two sections, a 1 km unpaved and 0.8 km concrete access road. According to the IEE of 2013, the waste transfer station was developed on vacant land that was cleared by the villagers. The study did not identify any big trees or wildlife. The Consultant visited the site on 10 August 2022 and noted that the site is surrounded by some households and shops, agricultural land including rubber and cassava plantations. The nearest single residences are located about 300 m from the site and the nearest village, Ban Nahai is located about 600 m south of the site²⁸ (See Figure 3-7). **The detailed social baseline conditions of the KM16 will be collected and analysed during the full ESIA stage.**

71. According to the Ministerial Agreement No 8056, MONRE of 17 December 2013, recycling factories (Item 3.40 in the Ministerial Agreement) fall under the category that are required to develop an ESIA for review and approval by MONRE. The proposed investments belong in this category and these investments are planned to be covered under the full-scale ESIA to be prepared during detailed design. The full ESIA will build on KM32 Pre-ESIA and will cover all the three sites including the Km 32, the Km16 and Naxaythong site.

²⁸ According to the WB IFC standard, it should be at least 250m radius buffer zone.



Figure 3-6 Site location Map (Google Earth Image 2022)

3.4.3 Waste Transfer Station in Naxaythong District

72. Under C2, establishment of the Naxaythong transfer station and Integrated Waste Management Facility (in the north-west of Vientiane Capital) with financing for:

- Civil works - a material recovery facility, composting plant, administration office building including rest rooms, canteen, training rooms.
- Bathroom facilities including changing room for male workers and waste pickers.
- Bathroom facilities including changing room for female workers and waste pickers.
- Equipment - sorting, washing, shredding plastics waste equipment; weighbridge; transportation truck, wheel loader, forklift and other equipment for transfer station operation.

73. The integrated waste management facilities will provide job opportunities and priority will be given to Km 32 waste pickers with quotas for women.

74. The Project will improve workplace safety for women and men through providing personal protective equipment (PPE) and safety training as by improving the security standards and protocols at the waste facilities.

75. Naxaythong District is located in the middle of the north part of Vientiane Capital, next to Xaythany District. It has a total area of 1,131 km². To the north, there is Phonhong District



in Vientiane Province. To the south, there are the adjacent Sikhodthabong and Chanthabouly Districts. To the east, there is the adjacent Xaythany District. To the west, there is the adjacent Sangthong District. Currently, Naxaythong has no waste management facilities so all waste is transported around 50 km to the Km32 landfill in Xaythany District.

76. The location of the site for the Integrated Waste Management Facilities in Naxaythong District has not yet been determined. The location and design for a transfer station and RDF plant in Naxaythong District will be identified using criteria in Annex 3. The E&S baseline conditions and the potential risk, impacts, and mitigation measures will be collected and analysed during the full ESIA stage under the Component 3.

77. According to the Ministerial Agreement No 8056, MONRE of 17 December 2013, recycling factories (Item 3.40 in the Ministerial Agreement) fall under the category that are required to develop an ESIA for review and approval by MONRE. The proposed investments belong in this category and the investments are planned to be covered under the full-scale ESIA.

78. **The detailed social baseline conditions of the Naxaythong site will be collected and analysed during the full ESIA stage.**



4 RISKS AND IMPACTS, AND PROPOSED MITIGATION MEASURES

79. Overall, the project is classified a high-risk project. Project components have differing risk profiles. Environmental and social (E&S) risks and impacts of the Component 1 and 3 are classified as low to moderate while the Component 2 E&S risks and impacts are classified as substantial to high mainly due to the on-going significant pollution at Km32 landfill site and risk if E&S considerations and implementation during each phase of activities including Detailed Design is inadequate.

80. With effective implementation of appropriate ESF Instruments and adequate design measures for solid waste management facilities as proposed in the Pre-ESIA, E&S risks and negative impacts from the project's activities is expected to be at acceptable level. Risks and impacts are broken down into positive impacts and negative E&S risks and impacts as presented in Section 4.1, 4.2 and 4.3 accordingly.

4.1 POSITIVE IMPACTS

81. The Project will continue to support GOL efforts to strengthen its capacity for waste and pollution management, improve municipal solid waste management in target areas in Lao PDR, and provide immediate and effective response in case of an Eligible Crisis or Emergency building on key outcomes of existing and/or recent projects financed by WB as well as initiate policy, regulations, and capacity building to address priority issues related to solid waste and plastics in Lao PDR. The Project will seek to comprehensively support capacity building and stakeholder collaboration across priority aspects of key agencies of MONRE, MPWT, other sector agencies and selected local governments responsible for solid waste management.

82. Key benefits from Project intervention through the efforts to improve policy and regulations related to environmental risk management (ERM) measures such as EIA, IEE, SEA, 3R, NPAP, TA and capacity building of local authorities to be implemented under Component 1 will clearly support urban cleanliness, waste reduction, pollution control, and overall ERM capacity of GOL. This will indirectly impact the quality of health of residents, which will lead to healthy long lives, money savings on health medication and support for urban poverty alleviation. Implementation of the SEA regulations as well as other ERM tools and pollution control measures will also contribute to reduction of waste generation and of negative impacts and promote positive impacts and participation of the sector agencies and local authorities on ways to incorporate E&S consideration into the upstream planning and monitoring especially those related to potential cumulative impacts and uncertainty related to climate change. Implementation of Component 3 will continue to strengthen EPFO capacity to engage key stakeholder and tap more funding supports from national and international sources and thus enhance sustainability of Project activities.

83. The EWMP investments proposed under Component 2 aim at significantly improving



waste management in Vientiane Capital through an integrated waste management approach comprising upgrading the existing waste management and disposal facilities at the existing Km 32 landfill, establishment of Integrated Waste Management Facilities at the existing Km16 transfer station, and at a new transfer station to be established in Naxaythong District including capacity building of VCOMS and mitigation of potential negative impacts to waste pickers and other disadvantage groups.

84. The construction and operation of two new landfill cells proposed under the Km 32 landfill site will reduce some of the environmental impacts associated with disposal of the future incoming waste to the landfill. The proposed new landfill cells include leachate collection and treatment, which when managed and maintained properly will to some extent reduce the current pollution of surface water bodies draining from the landfill site and thereby also reduce adverse impacts caused by discharge of polluted water on agricultural fields. Human health risks due to contamination of water polluted by wastewater/leachate from the landfill site will also be reduced. Overall, compared with a “do nothing” scenario, the proposed improvements to waste disposal, leachate collection and treatment and waste disposal operations including a complete stop for open burning of waste, daily cover of incoming waste, and reduced littering - are expected to reduce odour nuisances, air and water pollution and improve health and safety for landfill workers and waste pickers. Furthermore, there are likely to be significant global and regional beneficiaries of improved environmental conditions with decreases in (plastic) waste entering oceans and greenhouse gas GHG releases to the atmosphere.

85. Direct and indirect beneficiaries of the project are expected to be the approximately 1 million inhabitants of Vientiane Capital who will benefit from improvement to the waste management system, and an addition of some inhabitants in the target areas to be selected for the 3R and NPAPs who will benefit from improved policies, regulations, monitoring and enforcement, legislation, strengthened institutions, and increased capacities the agencies responsible for implementation of Component 1.

86. The 264 waste-pickers at the Km-32 landfill will benefit directly from improved working conditions at the landfill, training and skills development provided through the Project, and opportunities for work at the waste management facilities planned for Naxaythong and Km16. Women and vulnerable groups currently involved in informal (and formal) waste collection, sorting, and disposal networks will be specifically targeted to ensure they benefit from re-skilling and training opportunities, with the objective of incorporating informal workers into formal waste management systems and identifying alternative and/or substitute livelihood operations.

87. The poor and near poor, on average 10 percent of the population, are likely to experience significant positive impacts of collected waste, decreased waste burning, decreased pollution, and sanitary disposal of waste. The government will consider the effect on poorer households as it establishes new waste collection fees.



88. Furthermore, there will also be global and regional beneficiaries of improved environmental conditions with decreases in (plastic) waste entering oceans via the Mekong River and GHG releases to the atmosphere (see Section 4.4).

4.2 E&S RISKS AND IMPACTS AND PROPOSED MITIGATION MEASURES OF C1 AND 3

89. The overall risk rating of Component 1 and 3 is classified as low to moderate. Activities to be implemented under Component 1 and 3 will include technical assistance (TA); procurement of equipment and other goods/supplies; policy development; training, workshops, TAs and other capacity building including small and/or very small civil works. The key E&S risks and impact of C1 and C3 are summarized below:

- Risks related to the working conditions, labour disputes transmission of infectious diseases (such as Covid-19) of Project Worker²⁹. This will be addressed through the implementation of LMP (Attachment 1B of the SIA-SMPs);
- Inappropriate behaviour by Project Worker during training, consultation workshops and working in communities or field data collection. This can be managed through the implementation of a simple Code of Conduct on SEA/SH and VAC (Attachment 3A of the SIA-SMPs);
- Temporary risks and disturbances related to OHS, CHS and dust and noise generation due to (construction and/or rehabilitation of small and/or very small civil works as well as installation of environmental quality monitoring stations. This will be mitigated by a simple ESCOP (Annex 6A) or Simple Do and Don't Measures (Annex 6B);
- The risks and negative impacts of the implementation of the activities and TAs related to 3R, NPAPs, and Pilot investment projects/activities to be implemented under C1 and 2B are low and associated to working conditions, labour disputes transmission of infectious disease and temporary disturbances related to OHS, CHS and dust and noise generation due to construction and/or rehabilitation of small and/or very small civil works. This will be mitigated by a simple ESCOP (Annex 6A) or Simple Do and Don't Measures (Annex 6B), LMP (Attachment 1B of the SIA-SMPs) and social assessment will be included in the TOR for TA activities.

90. The proposed project activities to be implemented under Component 1 and 3 and the expected E&S impacts and potential risks while ESS relevance and the proposed mitigation measures and/or ESF instruments to be applied during project implementation are presented in Table 4-1.

²⁹ The World Bank ESS2 defines four categories of project workers are grouped into direct workers, contracted workers, primary supply workers, community workers and civil services. The definition of project workers is provided in the Attachment 1 LMP of the SIA-SMP.



Lao PDR Environmental and Waste Management Project (P175996)

Table 4-1: Summary of the E&S Risks and Impacts and proposed Mitigation Measures for C1 and C3

Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
Component 1. Policy Implementation and Capacity Enhancement (PICE)				
<p>1A Capacity Support for Implementing Environmental Risk Management for Pollution Management with the following key activities:</p> <ul style="list-style-type: none"> Develop (i) standard procedures for monitoring and evaluation of investment projects' compliance with Laos' environmental regulations; (ii) a compliance monitoring system for tracking environmental performance of investment projects; (iii) regulations for penalties for non-compliance with environmental regulations. Undertake compliance monitoring with focus on air and water pollution in the hydropower, mining, agriculture and industry sectors, and providing technical assistance to investment projects for improving environmental compliance. Provide technical assistance for strengthening air and water quality monitoring systems and for integrating the air and water quality data and information with the GoL's environmental compliance monitoring system. 	<ul style="list-style-type: none"> OHS risks related to the working conditions, labour disputes transmission of infectious diseases (such as Covid-19) of Project Worker; Inappropriate behaviour by Project Worker during training, consultation workshops and working in communities or field data collection. Exclusion and/or inadequate or deficient meaningful consultation among key agencies and key stakeholders, preparation and implementation of SEA could lead to unexpected impacts to key sector agencies, local authorities, and local communities, and the private sector. CHS Temporary risks and disturbances related to dust and noise generation including transmission of infectious diseases during installation of environmental quality monitoring 	<ul style="list-style-type: none"> Update, implement, monitor and report LMP (Attachment 1), COC on SEA/SH and VAC (Attachment 3B of the SIA-SMP); Implement, monitor and report ESCOP (Annex 6A) or Simple Do and Don't Measures (Annex 6B); Implement, monitor and report of GRM and SEP; Implement, monitor and report of SEP including GRM; Each SDA to assign one E&S coordinator to oversee, coordinate, monitor and report the E&S implementation. 	<p>ESS1-5, 7 and 10</p>	<p>DOE-MONRE and PCU of EPFO throughout the project implementation</p>



Lao PDR Environmental and Waste Management Project (P175996)

Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
<p>Provide technical assistance for enhancing capacity in other priority areas of ERM including on (i) ESIA for the agriculture, mining, hydropower and industry sectors; (ii) developing and implementing SEAs in the mining sector; and (iii) integrating climate risk and mitigation management as part of ERM interventions in the four priority sectors for environmental regulation.</p>	<p>stations.</p> <ul style="list-style-type: none"> Risks/Impacts due to land acquisition for ambient environmental quality monitoring stations is low as they are in government- managed land; 			
<p>1B Policy and capacity support for solid waste and plastic management with the following key activities:</p> <ul style="list-style-type: none"> Develop a National Waste Management Decree on non-hazardous and hazardous waste and relevant sub-regulations on waste management measures and establish a cross-ministerial National Solid Waste Management Coordination Committee to support implementation of the Decree and regulations. Develop a national waste and pollution data and information system. Provide technical assistance and finance for implementation, monitoring and enforcement of the National Plastics Action Plan (NPAP). Strengthen the domestic plastic waste recycling sector through technical assistance for establishment of minimum standards, compliance system, sub-decree, and capacity building for authorities for monitoring and 	<ul style="list-style-type: none"> Decree development or capacity development or TA activities may result in downstream E&S risks if not properly assessed and consulted with all stakeholders. Plans may generate unmitigated social or environmental impacts and fail to adequately address the main current and likely future problems including impacts to businesses, waste collection/distribution/recycling value chains, including informal waste workers as a result of NPAP regulations and activities. Inadequate consultation among key agencies and key stakeholders, implementation of these activities could lead to unexpected impacts to key sector agencies, local authorities, 	<ul style="list-style-type: none"> The risks related to development of decrees and TAs activities will be mitigated through implementation of regulatory impact assessment, which is also required under Lao Law (Annex 4 for the guidance note on regulatory impact assessment and social impact assessment to be included in the TOR of the TA activities. This will also include the assessment on how much of the current waste collection is reliant on informal waste workers and how the value chains related to them may be affected with any new changes in regulation or organization of 	<p>ESS1-4, 7 and 10</p>	<p>DOE-MONRE throughout the project implementation</p>



Lao PDR Environmental and Waste Management Project (P175996)

Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
<p>inspection. It will also establish a recycling market information system and explore the potential on refuse-derived fuel (RDF).</p> <ul style="list-style-type: none"> Provide finance for GCB and 3R activities: scaling-up small-scale plastic waste reduction, collection and processing initiatives including waste banks for plastics collection at villages and schools, composting at schools, waste separation at the household level in target districts, training support for the informal sector with a focus on women, and piloting refill and reuse stations with a focus on tourism hotspots. 	<p>and local communities, and the private sector.</p> <ul style="list-style-type: none"> OHS risks related to the working conditions, labour disputes transmission of infectious diseases (such as Covid-19) of Project Worker; CHS and inappropriate behaviour by Project Worker during training, consultation workshops and working in communities or field data collection; 	<p>the solid waste management.</p> <ul style="list-style-type: none"> To address the issues related to consultation, under EWMP, these activities will be continued with more extensive consultation following SEP procedures that are being prepared and to be applied to all project activities; Implement GRM for project workers; Implement, monitor and report LMP (Attachment 1B) CHSP (Attachment 2) COC on SEA/SH and VAC (Attachment 3B); Each SIA to assign one E&S coordinator to oversee, coordinate, monitor and report the E&S implementation. 		
Component 3. Project Coordination and Reporting				
<p>C3: Project Coordination and Reporting with the following key activities:</p> <p><i>Project management and administration related activities including:</i></p> <ul style="list-style-type: none"> Finance will be provided under subcomponent 	<ul style="list-style-type: none"> OHS risks related to the working conditions, labour disputes transmission of infectious diseases (such as Covid-19) of Project Worker. Inappropriate behaviour by Project 	<ul style="list-style-type: none"> Implement, monitor and report LMP (Attachment 1B) CHSP (Attachment 2) COC on SEA/SH and VAC (Attachment 3B); Implement SEP including GRM; 	ESS1-4, 7 and 10	EPFO PCU during project implementation



Lao PDR Environmental and Waste Management Project (P175996)

Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
<p>3A for project management and administration support to strengthen the capacity of the EPF and the implementing agencies in project management, fiduciary management, results monitoring, impact assessments, and reporting. ESF implementation support will also be supported under this subcomponent.</p> <ul style="list-style-type: none">• Finance will be provided under subcomponent 3B to strengthen the capacity of the EPF for coordination and communication, and fund raising for waste and pollution management and environmental protection.	<p>Worker during training, consultation workshops and working in communities.</p>	<ul style="list-style-type: none">• Recruit CTA and E&S consultants to assist C3 for supervision, capacity/training, monitoring and reporting of implementation of ESF instruments.		



4.3 E&S RISKS AND IMPACTS AND PROPOSED MITIGATION MEASURES OF C2

91. The proposed activities to be implemented in three sites under Component 2 are likely to create E&S risks at substantial level; however, the risks are increased to high level when taking into account (i) the existing waste at the Km32 Site and associated legacy risks and impacts; and (ii) weak legal and institutional capacity on waste management. The Pre-ESIA identified high level of pollution contamination in sensitive surface water and soil and groundwater resources nearby Km32 landfill which are important water supply for paddy field and other farm land, groundwater is use for domestic purpose. Concerns were raised from nearby villages on impact to rice productivity and impact on human skin (rash). Air and nuisance odor from landfill burning, operation, and occasional landfill fire affect three nearby villages.

92. The main potential environmental and social risks during the construction phase, the operational phase, the closure phase and risks and impacts associated with the legacy waste to be addressed and mitigated at the VCOMS Site at the Km32 include the following:

Construction phase

- Risks related to labour management, employment and occupational health and safety.
- Health and safety risks for construction workers, landfill workers, waste pickers and collectors and nearby residents and farmers related to construction site hazards such as the movement of heavy equipment, construction dust and noise and malodour from excavating and relocating waste and traffic along the access road.
- The temporary influx of construction workers could affect nearby villages, potentially increasing incidence of substance abuse and gender-based violence and spread of communicable diseases.
- Earthmoving activities may generate sediment-laden runoff at the construction site and at borrow pits.

Operational phase

- Risks related to labour management, employment and occupational health and safety.
- Risk of groundwater pollution from leachate leaking through liner systems in the new landfills cells, the cell for relocated waste or the leachate regulation pond.
- Pollution of surface water by uncontrolled discharge of leachate or seepage from waste piles due to improper landfill operations impacting on agricultural production, aquatic flora and fauna, and human health.
- Pollution of the ambient air due to open burning of waste, dust from handling of waste and daily traffic, malodour from decomposing waste, and emission of landfill gas including greenhouse gasses.



- Community health and safety risks due to exposure of the waste pickers including children among the waste pickers to flies and other vermin attracted by the future incoming waste and to sharps and other hazardous items in the waste.
- Health and safety risks for communities along the hauling route due to accidents involving daily waste truck traffic.

Legacy waste on the VCOMS site

- Historic and on-going infiltration of polluted leachate from the legacy waste posing a significant long-term risk to the important regional groundwater resources.
- Significant long-term risk of contamination of surface water in streams and ditches draining the landfill site by polluted leachate or seepage from the legacy waste affecting the productivity and quality of crops and may also pose a risk to the health of farmers, domestic animals and wildlife in the area nearby Km32 landfill.
- Pollution of the ambient air due to open burning of legacy waste, malodour from decomposing legacy waste affecting landfill workers, waste pickers and nearby residents.
- Health and safety risks of waste pickers and landfill workers from exposure to polluted leachate, and flies and other vermin attracted by the legacy waste.

Closure phase

- Exposure to waste by people or animals.
- Spread of diseases by vectors and vermin.
- Odour nuisances, windblow litter and risk of fire.
- Breach of capping and ponding in depressions leading to increased infiltration and increased generation of leachate, erosion and crop death.
- Risk of pollution of surface water by leachate or seepage from waste impacting on agricultural production, aquatic flora and fauna, and human health.
- Risk of groundwater contamination due to failure of the liner and the leachate collection and treatment system.

Mitigation Measures

93. The most important environmental and social mitigation measures proposed implemented are summarized below:

- For the construction phase, the environmental and social impacts and risks are assessed to be moderate, temporary, and localized. These risks will be effectively mitigated by conventional construction methods and standard mitigation measures.
- The proposed preferred design of the new landfill cells including composite liner systems combined with proper implementation of the operational mitigation measures including daily cover of the waste, leachate collection and treatment will minimise the risk to groundwater and effectively stop the current pollution of surface water bodies draining from the VCOMS landfill site and prevent future adverse impacts on surface water and agricultural fields.



- The legacy waste on the VCOMS site will be regrouped and compacted and provided with a cap designed to minimise infiltration, and to collect landfill gas; and the cap will ensure a range of recreational or productive land uses.
- The occupational and community health and safety conditions will be improved through proper landfill operations including a complete stop for open burning of waste, daily cover of incoming waste, and reduced littering; and a waste reception area will be established where the waste pickers can segregate recyclables under improved health and safety conditions.
- Upon closure, the design of the final capping of the engineered landfill cells will allow a range of recreational or productive land uses.
- Impacts on the livelihoods of the waste pickers due to capping of the legacy waste is likely insignificant as recyclable items in the legacy waste currently on the landfill site most likely already have been removed by the waste pickers, and during the construction phase, the waste pickers will be provided with access to the incoming waste at the waste reception area.
- Risks of impacts on the waste pickers' livelihoods during the operational phase will likely be insignificant as the waste pickers will have access to segregating the recyclables from the incoming waste at the waste reception area.

94. A full ESIA to be prepared for Component 2 will further assess these potential risks and impacts of project activities at Km32 landfill, Km16 and Naxaythong sites. The proposed mitigation measures for improvement of design and operations of Km32 rehabilitation proposed in the Pre-ESIA will be considered in the Detailed Design. Revision/update of the preliminary design should ensure that adequate considerations on environmental and social risks and impacts are incorporated and that potential E&S risks and impacts from the project activities are acceptable.

95. All identified impacts/risks are assessed to be acceptable with the adoption of preferred alternative conceptual design proposed in the Pre-ESIA and implementation of the mitigation measures outlined in the Annex 7 for Executive Summary of the Km32 site and Pre-ESIA (Table 8-3 to Table 8-7).

96. The proposed project activities to be implemented under Component 2 and the expected E&S impacts and potential risks while ESS relevance and the proposed mitigation measures and/or ESF instruments to be applied during project implementation are summarized in Table 4-2.



Table 4-2 Summary of the E&S Risks and Impacts and proposed Mitigation Measures for C2

Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
Component 2: Infrastructure for the integrated solid and plastic waste management system and capacity building in waste management planning and operations				
<p>Subcomponent 2A: Capacity building for waste management planning, operation, monitoring, waste service delivery, and cost recovery at the local level, with the following activities:</p> <p>e) Provide technical assistance to VCOMS for:</p> <ul style="list-style-type: none"> Development of regulations and capacity building for waste management planning and collection zoning; contract management and supervision of private waste operators; tariff setting; waste collection from waste service users and private waste operators; and landfill operations and management. Financing and cost recovery for the Vientiane Capital waste management system including developing a mobile application for waste fee collection. Development of a waste management plan for collection zoning per private waste operators, collection scheduling, collection truck and human resources management, service charge collection, contract 	<p><u>Most of the proposed activities will create positive impacts and mitigate E&S risks including the existing waste at the Km32 Site and associated legacy risks and impacts identified above and under C2B. However, there are some E&S risks and impact as summarized below:</u></p> <ul style="list-style-type: none"> Lack of inclusive and meaningful consultation during the full ESIA study and development of landfill and transfer operational manuals for with all concerned stakeholders (esp. vulnerable/poor households, women, waste pickers and collectors) could result in the risk is regulatory non-compliance, project delays, reputational harm to project stakeholders; Social risks related TA activities if not properly assessed and consulted with all stakeholders. Risk of increase in illegal dumping, littering, and open burning, as results increase in waste fee collection, can exacerbate impacts on public health and the environment; OHS risks related to the working conditions, labour disputes transmission of infectious diseases (such 	<ul style="list-style-type: none"> Update, implement, monitor and report LMP (Attachment 1), COC on SEA/SH and VAC (Attachment 3B of the SIA-SMP); Implement, monitor and report of SEP including GRM; Ensuring that the full ESIA is carried out in compliance with compliance with the ESMF, SIA-SMP, Pre-ESIA and SEP. Careful assessment of impacts due to changes in fees or policies through stakeholder consultations. Include social assessment in the TOR of TA activities. This will also include the 	<p>ESS1-8, 10</p>	<p>MPWT PMU, PTI and VCOMS, Consultant firms (DD and Full ESIA study)</p> <p>throughout the project implementation</p>



Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
<p>management, engagement with waste service users, transfer stations operation, landfill operation, waste data collection and regular environmental monitoring.</p> <p>f) Develop operational manuals for integrated waste management facilities (sorting and recycling facilities and composting facilities) and landfill management including site selection, standard landfill design, and standard operational procedures for construction, operation, and closure of landfill.</p> <p>g) Provide support for improving waste pickers working conditions through:</p> <ul style="list-style-type: none"> • Vocational skills building and training, provision of protective equipment and health and safety training. • Interventions for improving female workers' access to jobs in the SWM sector described in the Gender assessment (Section C) of the PAD (December 2022). • Support measures for children engaged in waste picking described in Annex 2 of this PAD (December 2022). • Allowing informal waste workers to safely 	<p>as Covid-19) of Project Worker;</p> <ul style="list-style-type: none"> • Inappropriate behaviour by Project Worker during training and consultation workshops 	<p>assessment on how much of the current waste collection is reliant on informal waste workers and how the value chains related to them may be affected with any new changes in regulation or organization of the solid waste management.</p>		



Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
<p>access incoming waste at the KM32 landfill.</p> <p>h) Support investment preparation for solid and plastic waste infrastructure, equipment, and their management including:</p> <ul style="list-style-type: none"> Detailed Design (DD) of integrated solid waste and plastic waste management system and specifications for each waste management equipment and infrastructure. Site-specific Environmental and Social Impact Assessments (ESIAs), Environmental and Social Management Plan (ESMP), Resettlement Action Plans (RAPs) and Livelihood Restoration Plans (LRPs) per project site according to the World Bank's Environmental and Social Management Framework. Bidding documents for each project site. 				
<p>Subcomponent 2B: Waste and Plastics Management Infrastructure Investments, with the following activities:</p> <p>e) Establish the Naxaythong transfer station and Integrated Waste Management Facility (in the north-west of Vientiane Capital) with financing for:</p>	<p><u>Overall, the E&S risks and impacts associated with the pre-construction and construction are assessed to be moderate, temporary and localized as summarized below:</u></p> <p><i>(a) Environmental Risks and Impacts:</i></p> <ul style="list-style-type: none"> Dusts and noise generated by construction works and project related traffic affecting construction 	<ul style="list-style-type: none"> Full ESIA and Site Specific ESMPs (SS-ESMPs), as part of project activities under C2A, will be prepared by MWTP PMU with technical assistant from a qualified ESIA firm in compliance with the 	<p>ESS1-8, 10</p>	<p>MPWT PMU, PTI and VCOMS, Construction Supervision Consultant firm, Construction Contractors including VCOMS's</p>



Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
<ul style="list-style-type: none"> Civil works - a material recovery facility, composting plant, administration office building including rest rooms, canteen, training rooms. Separate bathroom facilities including changing room for males and female workers and waste pickers. Equipment - sorting, washing, shredding plastics waste equipment; weighbridge; transportation truck, wheel loader, forklift and other equipment for transfer station operation. <p>f) Upgrade the KM16 transfer station in Xaysettha District to be an Integrated Waste Management Facility with financing for:</p> <ul style="list-style-type: none"> Civil works - waste collection, sorting, and material recovery facilities; upgrading the existing composting plant; Separate bathroom facilities including changing room for males and female workers and waste pickers. Equipment - a weighbridge; transportation truck, wheel loader, forklift and other equipment for transfer station operation. <p>g) Rehabilitate the KM32 landfill to extend its</p>	<p>workers, landfill workers, waste pickers and collectors and nearby residents.</p> <ul style="list-style-type: none"> Earthmoving activities may generate sediment-laden runoff at the construction site and at borrow pits. Sediment-laden runoff generated by earthworks affecting nearby surface water bodies. Impacts on flora and fauna from construction activities are considered negligible because the landfill site is already a disturbed area with waste dumped on most part to the site and there is no flora or fauna of conservation value at or near the site. However, establishing new borrow pits or spoil disposal sites may generate impacts on flora and fauna. These risks can be avoided through proper siting of landfill facilities, borrow pits and disposal areas. <p>(b) Social risks and impacts:</p> <ul style="list-style-type: none"> Lack of inclusive and meaningful consultation during the full ESIA study with all concerned stakeholders (esp. vulnerable/poor households, women, waste pickers and collectors as well as nearby communities) could result in the risk is regulatory non-compliance, project delays, reputational harm to project stakeholders; Inadequate Stakeholder Engagement or inadequate management of the grievances 	<p>ESMF, SIA-SMP, Pre-ESIA and SEP;</p> <ul style="list-style-type: none"> Temporary impacts and disturbances will be managed through the implementation, monitoring and reporting of CESMP to be prepared by contractor(s) in compliance with the SS-ESMPs. PMU with technical assistant from PTI and CSC will conduct capacity building and training to contractor (s) and regularly monitor the contractor's E&S compliance. More details of mitigation measures are provided in Executive Summary of Pre-ESIA for the Km32 (Annex 7) and SIA-SMP for all components. 		<p>contractors</p> <p>Throughout the project construction phase</p>



Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
<p>lifetime by at least 10 years with financing for:</p> <ul style="list-style-type: none"> Civil works - capping waste cells, installing landfill liner, constructing an internal access road in the landfill and regulation pond and treatment facility, installing methane gas capturing pipes and leachate collection piping system, developing new sanitary landfill cells with waste reception area, developing hazardous waste storage, developing bathroom facilities for waste workers and upgrading of the administration office. Equipment – a weighbridge and washing crushing and pelletizing equipment at the waste management community centre, a solar plant for on-site electricity generation, and trucks and other equipment for landfill operation. <p>h) Establish riverine plastics collection at priority pollution hotspots with financing for:</p> <ul style="list-style-type: none"> Technical assistance for setting up viable plastics collection and disposal systems that are integrated into the general SWM system and involve communities in monitoring and 	<p>redresses mechanism during the construction stage</p> <ul style="list-style-type: none"> Risk of land acquisition and impact on the heritage assets or values including discovery of artifacts or relics during construction of the new Transfer Station in Naxaythong district and operation of new borrow pits, sand and quarry sites. Risks and impacts on land acquisition, resettlement and livelihood including impacts on ethnic minorities will be assessed in details during the full ESIA stage; For the Km32 and Km16, both sites are fully owned by VCOMS and there are no marginalized ethnic minorities claiming collective ownership or cultural connection to the landfill site and surrounding areas. OHS risks of existing waste pickers due to construction activities and increased traffic congestion (transportation of construction materials and solid wastes to the landfill); Poor condition of the access road causing excessive dust, increasing risks of accidents and increasing costs of maintenance; Risks related to labour management and working conditions, including (i) employment 			



Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
<p>reporting.</p> <ul style="list-style-type: none">Civil works and equipment for plastics pollution monitoring stations.	<p>discrimination, (ii) denial of basic labour rights; (iii) unresolved labour disputes, (iv) child labour; (v) accidents and injuries involving heavy equipment; and (vi) injuries and illnesses due to exposure to waste which may contain toxic agents, sharp objects, and pathogens as well as exposure to contaminated soils and dusts at construction site; (vii) Risks related SEA/SH and VAC including the temporary labour influx of construction workers is likely to increase the risk of substance abuse such as alcohol and amphetamine. Such substance abuse is often a contributing factor to accidents and incidents. It also is a contributing factor for gender-based violence;</p> <ul style="list-style-type: none">Community health and safety related to construction site hazards such as the movement of heavy equipment, construction dust and noise. Nearby residents and farmers working downwind could potentially be exposed to dusts while those along the construction routes may be impacted by the construction traffic. The temporary influx of construction workers could affect nearby villages, potentially increasing incidence of substance abuse and gender-based violence and spread of communicable diseases. Although the landfill areas are outside the UXO danger zone, there may			



Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
	<p>be risk of encountering UXOs at borrow pits.</p> <ul style="list-style-type: none"> • Damages to the local roads due to increased traffic; • Disruption or restrictions on recycling activities with risk of causing loss/reduction in income of the waste collectors, waste-pickers and other groups (informal recyclers or small-scale waste buyers) who rely on income from the waste stream. • More E&S risks and impacts are provided in the Pre-ESIA for the Km32 and SIA-SMP for all components. 			
	<p><u>Overall, the E&S risks and impacts associated with the operation phases are assessed to be high due to the existing waste at the Km32 Site and associated legacy risks and impacts as provide above; and (ii) weak legal and institutional capacity on waste management. The key E&S risks and impacts are summarized below while more details of risks and impacts of the Km32 are provided in Annex 7 – Executive Summary of Pre-ESIA.</u></p> <p>(a) Environmental Risks and Impacts:</p> <ul style="list-style-type: none"> • The operation of the new transfer station in Naxaythong district and at the Km16 may pose operational environmental risks such as degraded 	<ul style="list-style-type: none"> • The operational E&S risks and impacts will be mitigated to be an acceptable level through the implementation of project activities under C2A. • Implement the operational phase mitigation measures outlined in the Executive Summary of Pre-ESIA for the Km32 (Annex 7), Table 	ESS1-8, 10	Implemented by VCOMS and monitored by MPWT PMU/DHUP



Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
	<p>surface and groundwater quality and impacts on aquatic and agricultural resources due to leakage of leachate/toxic waste components into soil, water resource; air pollution and odour including air pollution from landfill fire; poor health and safety and sanitation, etc.</p> <ul style="list-style-type: none">• Risk of groundwater pollution from leachate leaking through liner systems and legacy waste piles.• Surface water contamination may affect the productivity and quality of rice production and other agricultural production in the surrounding fields; and may also pose a risk to the health of farmers, domestic animals and wildlife; and may in general render the water resources in the affected streams unusable.• Pollution of the ambient air due to open burning of waste, dust from handling of waste and daily traffic, malodour from decomposing waste, and emission of landfill gas including greenhouse gasses and air pollution posing a health hazards to landfill workers, waste-pickers and nearby residents.• Risk of uncontrolled site access leading to injury of people or loss of cattle.	<p>8-5 in the Pre-ESIA for Km32 and SIA-SMP for all components.</p> <ul style="list-style-type: none">• Provide opportunities to waste pickers to work at the new waste management facilities at km 32, and at km 16 and Naxaythong sites;• Waste pickers will have access to in-coming waste in Km 32.• The risks of loss/reduction of the existing livelihoods of waste collectors, waste-pickers and other groups like informal recyclers will be assessed as part of the preparation of NPAP and other related activities on the sector, including policy and legal / regulatory support. The assessment of poverty and social impacts as well		



Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
	<ul style="list-style-type: none"> • Risk of increase in illegal dumping, littering, and open burning exacerbating impacts on public health and the environment. • Accidental spills or spill/leaks due to improper management or storage of hazardous waste may affect workers, surface water and/or groundwater resources. • Odour nuisances from decomposing organic waste in the relocated waste, waste littered along the access road and from inadequately covered organic waste deposited in the new cells to be constructed by the project. • Potential fire hazards due to inadequate measures to capture landfill gas. • Risks of explosion from migration of landfill gas and build-up in confined spaces. • Spread of infectious diseases including water-borne diseases by disease-carrying vectors or by pollution of surface or groundwater with pathogens. • Contribution to climate change by fugitive emission of greenhouse gases (methane and carbon dioxide) in landfill gas generated by decomposing organic waste. 	<p>as related consultation activities will be integrated in the TORs for such TA assignments.</p> <ul style="list-style-type: none"> • The MPWT PMU will ensure that Social Security (health and life insurance) is provided to all workers according to the Labour Law and the Law on Social Security before the commencement of project activities. • Peg unit rates paid to waste pickers for recyclables to current market prices with deduction of a reasonable margin to ensure profitability for the appointed on-site buyer. • Updating, implementing, monitoring and reporting of SEP. • Monitoring and strict enforcement of 		



Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
	<p>(b) Social Risks and Impacts:</p> <ul style="list-style-type: none"> Based on the current preliminary conceptual liner design of the new cells in the Km32 landfill, there is a high risk of contamination of surface, groundwater and soil which could be or may in the future be used for domestic water supply, and which is therefore important for long-term water supply and public health, the productivity and quality of rice production and other agricultural production in the surrounding fields; and may also pose a risk to the health of farmers, domestic animals and wildlife; and may in general render the water resources in the affected streams unusable; The implementation of the integrated waste management facilities in Naxaythong District and Km16 may result in a reduction in recyclables arriving at the Km 32 and therefore affecting the current income (livelihood) of the seasonal and registered waste-pickers at the Km32 including vulnerable groups (currently one family working as waste pickers at the KM32 landfill) who rely on income from the waste stream at the landfill; Risk that waste-pickers do not receive a fair payment for the recyclables; OHS risks include the risk of: (i) employment 	<p>regulation for waste collection companies</p> <ul style="list-style-type: none"> Awareness raising on environmental impacts of waste dumping and burning Issue village-level regulations with penalties for illegal dumping. 		



Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
	<p>discrimination, (ii) labour related disputes, (iv) SEA/SH and VAC from alcohol, drug and amphetamine (as per FGD); (v) child labour (waste pickers); (vi) accidents and injuries, exposure to toxic waste component/ air pollution (dust and hazardous wastes/materials, odours nuisances, and vehicle emissions/noise and vibration/ pathogens and vectors in waste collection, transport and management processes;</p> <ul style="list-style-type: none">• CHS risks/impacts involving increased number of garbage trucks going back-and-forth to the landfill could lead to increased dust, noise, smells, water pollution, road safety (esp. children and vendors along the access road) and spread of infectious diseases (COVID-19, HIV-AIDS) and) SEA/SH and VAC.• Risk of uncontrolled site access leading to injury of people or loss of cattle;• Air pollution from open burning of waste or landfill fires can pose a health hazards to landfill workers, waste-pickers and nearby residents;• Risk of increase in illegal dumping, littering, and open burning exacerbating impacts on public health and the environment.• Inadequate Stakeholder Engagement or			



Component/Key Activities	Environmental and Social Risks	Environmental and Social Instruments and Measures	WB ESS	Responsibility / Implementation Stage
	<p>inadequate management of the grievances redress mechanism.</p> <p><i>The key E&S risks and negative impacts during closure phase³⁰ are as follows:</i></p> <ul style="list-style-type: none"> • Direct exposure to waste by people or animals • Disease spread by vectors and vermin • Odour nuisances, windblow litter and risk of fire • Breach of capping and ponding in depressions leading to increased infiltration and increased generation of leachate, erosion and crop death • Uncontrolled use of the land incompatible with the design of the caps or the integrity and stability of the cells. 	<ul style="list-style-type: none"> • These E&S risks will be mitigated through the implementation of the mitigation measures provided in the Annex 7 Executive Summary of Pre-ESIA and the Table 8-6 in the Pre-ESIA. 	<p>ESS1-4, 6,7,8, 10</p>	<p>Implemented by VCOMS and monitored by MPWT PMU/DHUP</p>

³⁰ This refers to risks and impacts that are solely associated with the Km 32 Landfill Project not including the risks and impacts from the existing conditions at the project site (the VCOMS site).



4.4 CLIMATE CHANGE RISKS, ADAPTATION AND MITIGATION

97. **Climate Change.** The project was screened using the World Bank's Climate and Disaster Risk Screening Tool and risk was classified as 'Moderate'. The EWMP supports the Government's climate policy objectives as articulated in the Nationally Determined Contributions (NDCs). For climate change adaptation, the country's NDC objective is to increase the resilience of urban development and infrastructure to climate change by 2030. The project supports this objective by reducing the vulnerability of solid waste facilities to climate risks through climate-resilient design. Improved waste collection resulting from program activities will also enhance urban flood drainage capacity in project locations. For climate change mitigation, the Government has set a conditional GHG mitigation target of 40kt CO₂e on average per year between 2030 and 2030 in its updated NDC (2021). Activities financed by this project contribute directly to reducing greenhouse gas (GHG) emission from the solid waste sector. According to the World Bank Guidance Note on Social Value of Carbon (2017), the lower bound estimate of global social cost of carbon is valued between US\$42.0 in 2022, the higher bound value US\$84.0.

98. **GHG emissions.** An analysis of GHG emissions was undertaken based on expected outcomes of the project including municipal solid waste collection service improvement, reduced open burning of waste, increased waste treatment including recycling and composting, and rehabilitation/construction of new sanitary landfill cells. Without project interventions, municipal solid waste volume is expected to increase due to population growth, urbanization and economic development. This would impact the amount of waste processed through intermediate treatment, landfilling, the amount of fuel used for transport and there will be no mitigation effect from the introduction of sanitary landfill. Total net GHG emission is estimated to be -2,719,920 tCO₂e, a net reduction over the evaluation period (40 years). The average annual net GHG emissions is -67,998 tCO₂e. The emission reductions are expected to come from optimizing transport routes for waste collection, waste separation to remove organic waste from the waste stream, and landfill gas collection.



5 E&S MANAGEMENT PROCEDURES

99. This ESMF is to manage potential adverse environmental and social impacts by establishing guidance documents that will inform EPFO PCU and MPWT PMU of the agreed sets of ESF instruments and procedures to be implemented by the EWMP. The ESF instruments and E&S management procedures are broken down into E&S procedure for C1 and C3 (Section 5.1) and C2 (Section 5.2) while Ethnic Group Engagement Framework (EGEF) in SIA-SMP (Attachment 5) Stakeholder Engagement Plan (SEP) and will be applied by all components (C1,C2, C3).

100. The For the CERC component, an addendum to the ESMF or a specific CERC-ESMF will be prepared specifically for the CERC and disclosed within 12 months after project effectiveness.

5.1 E&S MANAGEMENT PROCEDURES FOR C1 AND C3

5.1.1 ESF Instruments to be implanted by C1 and C3

101. The ESF instruments applied for C1 and C3 are presented in Table 5-1 below while E&S management procedure is illustrated in Figure 5-1.

Table 5-1: Overview of ES Management Measures/ Instruments for C1 and C3

ES Management Instrument	Objective	Applies to	Timing
1. Annex 4 Guidance Note on Regulatory Impact Assessment for C1	To improve the quality of political and administrative decision-making by determining the risks, costs and benefits of the proposed legislation, and identifying who will be affected by the proposed legislation, while at the same time addressing the need for openness, public involvement and accountability. A regulatory impact assessment is intended to ensure that any proposed legislation: <ul style="list-style-type: none"> - Is necessary - Is aimed at the right targets - Is in proportion to the problem or issue being addressed - achieves its objectives and avoids unintended consequences. 	C1	Throughout the Project implementation
2. Simple Environmental and	- Ensure that E&S risks and impacts associated with the TAs related to 3R,	C1 and C3 (where	Throughout the Project

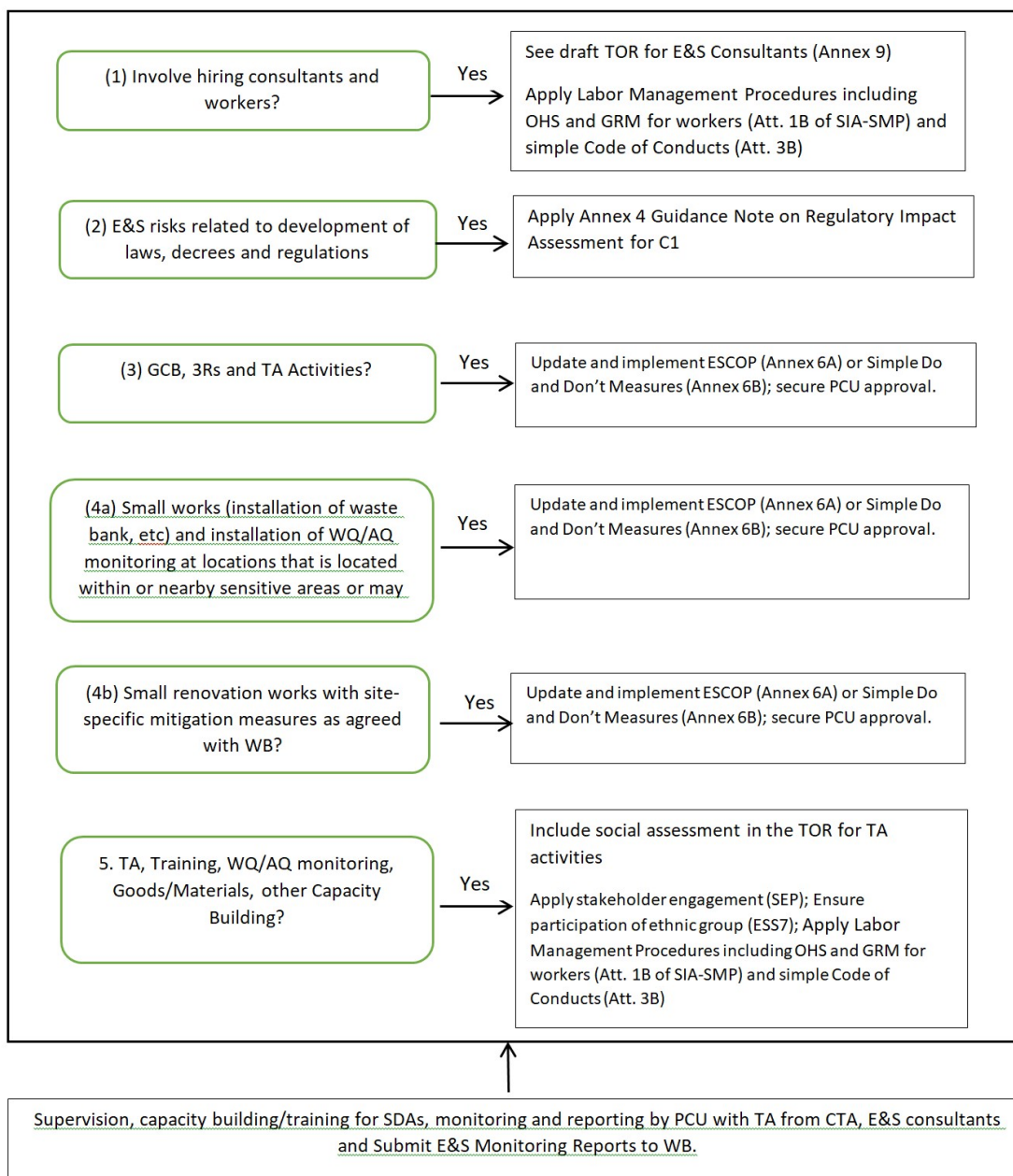


ES Management Instrument	Objective	Applies to	Timing
Social Code of Practices (ESCOP) for small civil works (Annex 6A)	NPAPs, and improving compliance of investment projects are identified, assessed and prevented or minimized to an acceptable level.	applicable)	implementation prior to approval of small civil works implementation
3. Annex 6B Simple Do and Don't Measures for 3R and GCB activities under C1	- Ensuring good practice of housekeeping involves proper storage, use, clean-up, and disposal of the various materials used during construction for human and environmental safety for minor civil works under GCR/3B will only related to waste bank activities (construction and operation of small plastic waste, paper waste, and recyclable wastes storage on public land (school, temple, market, etc.).	C1 and C3	Throughout the Project implementation prior to approval of small civil works implementation
4. Labour Management Procedures (LMP) with Worker Grievance Procedure - (SIA-SMP Attachment 1)	- Provides measures to manage and mitigate adverse OSH risks and impacts (prevent occupational injuries and illnesses) affecting civil servants (government staff appointed from the implementing and concerned agencies at all levels), direct workers (workers hired directly by PMUs, PIU, SIAs) and contracted workers (employees of civil works contractors and subcontractors, service providers, employees of consulting firms)	C1 and C3	Throughout the Project implementation
5. Community Health and Safety Plan (CHSP) - (SIA-SMP Attachment 2)	- Provides measures to manage and mitigate potential adverse potential health and safety impacts to local communities anticipated also from small civil works, working and training in local communities which can have risks for infectious diseases including Covid-19 and SEA/SH	C1 and C3	Throughout the project implementation
6. Simple Code of Conduct on SEA/SH and VAC - (SIA-SMP Attachment 3B)	- Provides guidance on the social Code of Conduct (COC) to be included in works contract to address the issues related to Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH), and Violence against Children (VAC) from small civil	C1 and C3	Throughout the project implementation



ES Management Instrument	Objective	Applies to	Timing
	works, working and training in local communities which can have risks for infectious diseases including Covid-19 and SEA/SH		

Figure 5-1 E&S Management Procedure for C1 and C3



5.1.2 Simple ESCOP and Simple Do and Don't Measures for C1 and C3

A simple ESCOP (Annex 6A):



102. The scope of a generic Environment and Social Code of Practices (ESCOP in Annex 6A) will be applied for TAs for 3R, NPAPs, and improving environmental compliance of small investment activities to be implemented under C1 and C3 which will be confirmed during the Project implementation.

103. The generic ESCOP in Annex 6A comprises an Environment Code of Practice (ECOP) (Part A6.1) and the Social Code of Conduct (SCOC) (Part A6.2). The ESCOP will be included in all bidding and contract documents for works contract for small size construction and/or rehabilitation of works related to offices and/or facilities to be implemented under the C1 and C3. The ECOP describes a general and key specific requirement for environmental management and monitoring of physical construction and renovation civil works while scope of SCOC describing obligations of contractor and workers to prevent social impacts during implementation and work contract. More details are in Annex 6A.

Simple Do and Don't Measures (Annex 6B)

104. The simple good practice of housekeeping involves proper storage, use, clean-up, and disposal of the various materials used during construction for human and environmental safety for minor civil works under GCR/3B will only related to waste bank activities (construction and operation of small plastic waste, paper waste, and recyclable wastes storage on public land (school, temple, market, etc.).

5.2 E&S MANAGEMENT PROCEDURE FOR C2

105. The ESF instruments applied for C2 are presented in Table 5-2 below while E&S management procedure is illustrated in Figure 5-2 below.

106. Selection of unknown site/s: During Project preparation, Project location at Km32 landfill and Km16 transfer station has been confirmed while location for the new proposed transfer station in Naxaythong district has not been confirmed. Site selection criteria have been established to guide the site selection to avoid/ minimize impacts on E&S along with other technical considerations (Annex 3). Criteria have been included in this annex for selection of any new construction materials site.

107. Site Specific Environmental and Social Impact Assessment (ESIA): Although the sites for project investment at Km 32 landfill and Km16 have been identified during the Project preparation, design and information available is still not adequate for preparation of a Full-scale ESIA and several design aspects of Km32 partial rehabilitations are still need to be further updated/revised during the Detailed Design. A standalone Preliminary Environmental and Social Impact Assessment (Pre-ESIA) for the Km32 has been prepared as agreed during the project concept stage. This document describes baseline information on the E&S baseline condition and preliminary assessment of potential key E&S risks and impacts and proposed mitigation measures to be required for the activities to be implemented at the Km32 landfill. The Pre-ESIA also provides recommendations for improvement of the



preliminary design of the Km32 landfill during the Detailed Design phase of project implementation. The Pre-ESIA also covers cumulative impacts assessment and will be further developed into a Full-scale ESIA that cover project activities at Km 16 and Naxaythong district during Detailed Design phase.

108. The TOR for ESIA firm to conduct a full the ESIA and SS-ESMP that cover three sites (Km32, Km16 and Naxaythong) will be prepared by E&S consultants to be hired by MPWT PMU and approved by WB before consulting firm hiring.

Table 5-2: Overview of ESF Instruments for C2

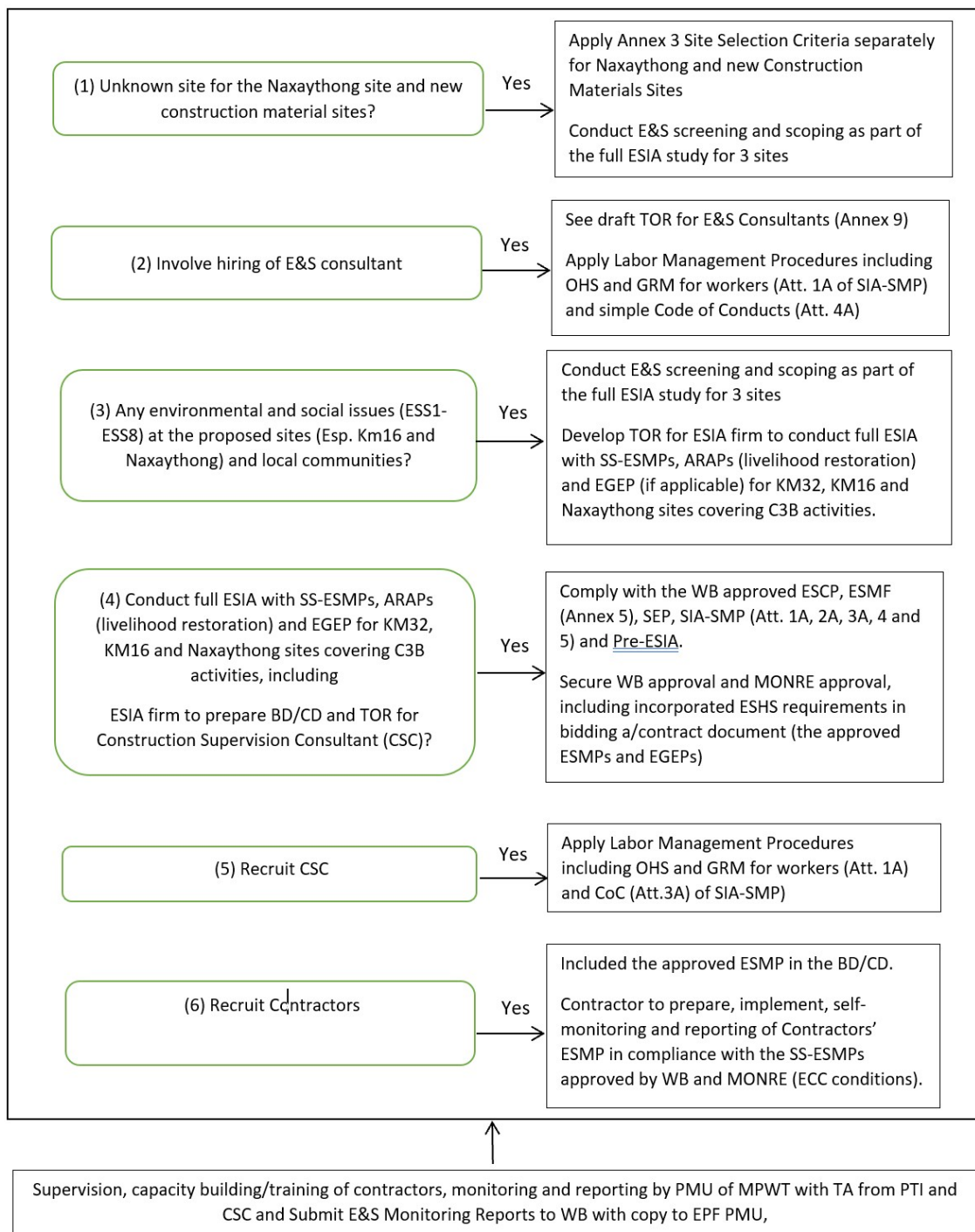
ESF Instrument	Objective and Application	Timing
1. Site Selection Criteria in Site including E&S criteria for Naxaythong and new construction material site (if any) (Annex 3)	<ul style="list-style-type: none"> - Prevent significant environmental and social risks. - Given that the location of Km32 and Km16 has been confirmed, this Annex will only apply for Naxaythong site and any new construction material sources. 	During Project implementation: Selection of Naxaythong transfer station, and new construction materials sites
2. Guideline for Preparation of Site-Specific Environmental and Social Impact Assessment (ESIA) and Site Specific Environmental and Social Management Plan (SS-ESMP) including screening and scoping (Annex 5)	<ul style="list-style-type: none"> - Ensure that E&S risks and impacts associated with Project investments in waste management facilities are identified, assessed and prevented or minimized to an acceptable level 	During Project implementation: Detailed Design phase
3. Labour Management Procedures (LMP) with Worker Grievance Procedure - (SIA-SMP Attachment 1A)	<ul style="list-style-type: none"> - Provides measures to manage and mitigate adverse OSH risks and impacts (prevent occupational injuries and illnesses) affecting civil servants (government staff appointed from the implementing and concerned agencies at all levels), direct workers (workers hired directly by PMUs, PIU, SIAs) and contracted workers (employees of civil works contractors and subcontractors, service providers, employees of consulting firms) 	- Throughout the Project implementation
4. Community Health and Safety Plan (CHSP) - (SIA-SMP Attachment 2)	<ul style="list-style-type: none"> - Provides measures to manage and mitigate potential adverse potential health and safety impacts to local communities anticipated also from construction works, working and training in local 	- Throughout the Project implementation



ESF Instrument	Objective and Application	Timing
	communities which can have risks for infectious diseases including Covid-19 and SEA/SH	
5. Code of Conduct on SEA/SH and VAC - (SIA-SMP Attachment 3A)	- Provides guidance on the social Code of Conduct (COC) to be included in works contract to address the issues related to Sexual Exploitation and Abuse (SEA), Sexual Harassment (SH), and Violence against Children (VAC)	- Throughout the Project implementation
6. Resettlement Policy Framework (RPF) (including livelihoods restoration) - (SIA-SMP Attachment 4)	- Describes procedures for land acquisition and livelihood restoration in accordance with national laws and ESS5 of the ESF including screening form for Land acquisition and resettlement - Provides specific guidance on the compensation process and scope of an ARAP/RAP	- Throughout the Project implementation
7. Ethnic Group Engagement Framework (EGEF) - (SIA-SMP Attachment 5)	- Provides specific guidance on the consultation and engagement process and scope of an Ethnic Group Engagement Plan (EGEP) including screening process.	- Throughout the Project implementation



Figure 5-2 E&S Management of C2





6 ESMF IMPLEMENTATION ARRANGEMENTS AND CAPACITY BUILDING

6.1 PROJECT IMPLEMENTING AGENCIES

109. The implementation arrangements for the project will follow the existing government structures. The Ministry of Finance (MOF) is the borrower and the formal point of contact between the Government of Lao PDR and the World Bank on all financial and legal matters for the credit and represents the Government of Lao PDR in discussions on these matters. MOF is expected to have reasonable capacity to deliver effectively, as it has implemented World Bank financed projects previously.

110. The MONRE will be the lead agency for implementation of Components 1 while the MPWT will be the lead agency for implementation of Component 2 and the EPFO will be responsible for overall supervision, coordination, and reporting through the Component 3 activities. Project activities will be implemented by several agencies under the MONRE and MPWT while key sector agencies and selected target provinces considered priority will also be eligible for Project supports. The ESMF implementation arrangements are broken down into EPFO PCU and MPWT PMU. A summary of agencies involved in the EWMP is presented in Table 6-1 and Figure 6-1 and Figure 6-2.

Table 6-1 Agency Implementation of project activities

Institution	Project-related Mandate
EPFO	The EPFO will coordinate the implementation of the EWMP and will work closely with the MONRE and the MPWT in this regard. The EPFO will oversee fiduciary management for components 1 and 3 for the project, and will be responsible for collating overall project progress reports. The MONRE Minister chairs the EPFO Board of Directors which acts as a multi-sectoral National Project Steering Committee.
DOE-MONRE	Implements subcomponent 1A on environmental protection policies and instruments (EIA, SEA, Cumulative Impact Assessment (CIA), and SOER), subcomponent 1B on policy and capacity support on plastics policies and legislation, and support and Capacity Building for Local Gov't on waste and pollution data and information systems and waste service, and subcomponent 1B on GCB and 3R projects + capacity building for plastic policies implementation in target districts.
DNEI-MONRE	Implements subcomponent 1A on ECC compliance and pollution monitoring framework. It leads the development of EIA compliance monitoring SOPs and ensures that Category 2 projects are in compliance with ESMPs.
DCC-MONRE	Implements subcomponent 1A on climate change low carbon resilient development. It leads the development of the LT-LEDS and implementation of its roadmap.
NRERI-MONRE	Implements subcomponent 1A on ECC compliance and pollution monitoring framework. It leads the enhancement of air and water quality monitoring system.



Institution	Project-related Mandate
DPF-MONRE	Implement subcomponent 1B on policy and capacity support on plastics policies and legislation jointly with DOE
DHUP-MPWT	Leads the implementation and houses the PIU of component 2. DHUP will construct waste related facilities and provide support to local government to build cost recovery capacities.
PTI-MPWT	Supports the PIU to perform environmental and social safeguard requirements for component 3.
DPF-MPWT	Supports the PIU to perform fiduciary requirements, financial management, and procurement for component 2.
DOP-MPI	Implements subcomponent 1A on Climate change: low carbon resilient development. It leads the integration of climate change into national investment guidelines and development plan.
DOM-MEM	Implements selected activities in subcomponent 1A on environmental protection policies and instruments, specifically the development of the mining SEA
PONRES	Implement subcomponent 1B on Support and Capacity Building for Local Gov't on waste and pollution data and information systems and waste service, GCB and 3R projects + capacity building for NPAP/plastic policies implementation in target districts. PONRES will establish waste banks in schools and markets.
Vientiane Capital DPWT	Supports the supervision and construction of waste related facilities under subcomponent 2B.
VCOMS	Implements activities under subcomponent 2A. Waste management infrastructure (2B) will be handed over from DHUP after construction to be managed by VCOMS.
FES-NOUL	Implements subcomponent 1B on policy and capacity support on plastics policies and legislation and jointly with DOE, and support on GCB and 3R projects + capacity building for plastic policies implementation in target district jointly with DOE.

111. **EPF Project Coordinating Unit (PCU).** A PCU will be established at the EPFO to support project management and oversee the implementation of Components 1 and 3 as well as the overall coordination of Project activities including submission of a progress report to WB every 6 months. The PCU is proposed to include: a chief technical advisor (CTA), FM team, M&E team, E&S consultants team (with qualification and experience in stakeholder Engagement, environment management, labour management, solid waste management and OHS), a project coordinator and subproject coordinators.

112. **MPWT Project Committee and PMU.** The MPWT will establish a committee to oversee the implementation of activities under Component 2. The committee will be chaired by the Vice Minister of MPWT and include Director Generals (DGs) and Deputy Director Generals (DDGs) of MPWT's Department of Planning and Finance (DPF), Department of Housing and Urban Planning (DHUP), Public Works and Transport Institute (PTI), VCOMS, and local Departments of Public Works and Transport (DPWT). The MPWT PMU will consist of technical staff of the DHUP, the DPC and the PTI with assistance from the E&S consultant team including E&S Consultant as E&S Team Leader (part-time) and one full time national environmental consultant (with qualifications/expertise in environmental management, ESHS in solid waste management) and one full-time social consultant (with



qualifications/expertise in social/resettlement, livelihood restoration, stakeholder engagement and GRM). A gender focal points will be assigned to oversee the gender activities and support reporting on gender-relevant indicators.

113. **Civil works for landfill rehabilitation at the KM32 landfill and development of waste management facilities at the Naxaythong and KM16 sites will be done under Component 2B and will be overseen by the MPWT PMU.** The MPWT PMU will hire a construction firm to undertake the civil works, and a supervision firm for construction works, and the Vientiane Capital Department of Public Works and Transport (DPWT) will support the supervision firm in supervising the construction firm. After the civil works have been completed, equipment for the waste management facilities procured, and training of VCOMS staff undertaken, the facilities will be handed over to the Vientiane Mayor's Office, with a legal document confirming transfer of the assets. Even after the facilities are handed over Mayor's Office, the MPWT and DPWT will continue to provide capacity support and training for operation and maintenance of the facilities.

114. The MPWT PMU will be responsible for planning, supervision, monitoring and reporting of ESMF implementation for the C2 including reporting directly to WB in case of any emergency and/or accidents related to C2 activities with a copy provided to EPF PCU.

115. **A national project steering committee (NPSC) will provide high-level oversight, and a technical committee will provide technical direction for the project.** The EPF Board of Directors would serve as the NPSC and be chaired by the Minister of the MONRE. The technical committee will be chaired by the Director General of the Department of Planning and Finance of MONRE and attended by representatives of the ministries that comprise the EPF board. Project coordination will be enabled by the NPSC and the Project Technical Committee (PTC). The project's implementing agencies are represented on the NPSC and PTC, and these will provide regular opportunities for meeting to discuss the project's implementation progress, and to resolve any challenges.

116. **Subproject Delivery Agencies (SDAs).** The EWMP will be implemented as sub-projects following the LENS2 project implementing arrangements. However, key differences from the LENS2 project are that the number of subprojects is 50 percent less which reduces the overall administrative management effort, and the subprojects are larger in value. One of the main lessons learnt from the LENS2 is that the procedures of the subproject arrangement fostered a drive for results and strengthened capacity for planning, fiduciary management, monitoring and reporting results among GoL department and agencies.



Figure 6-1 Proposed Institutional Arrangements

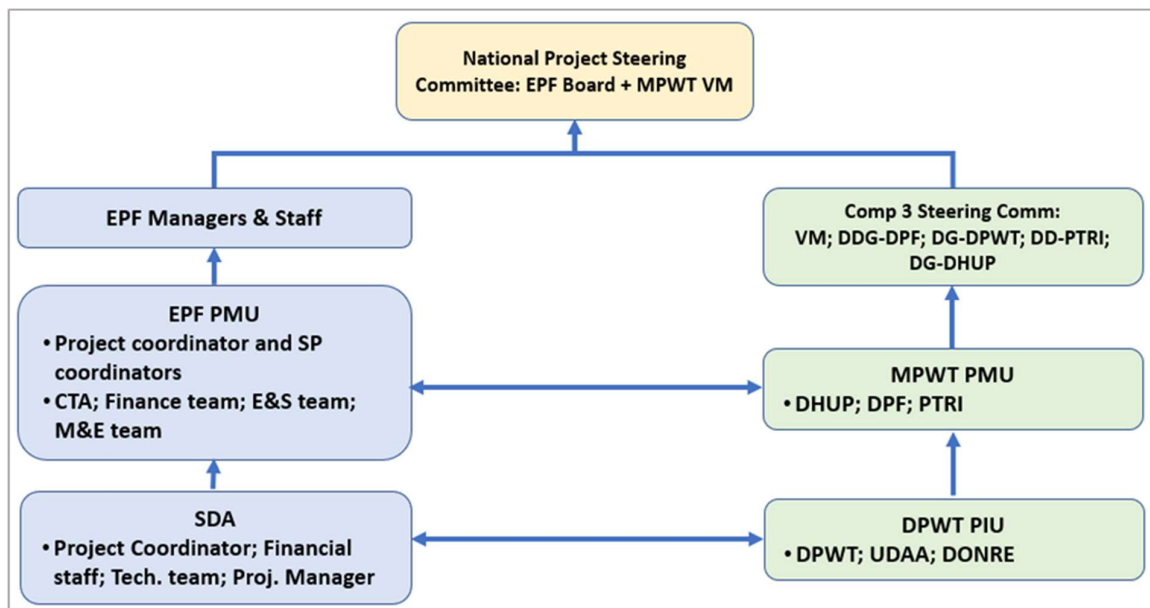
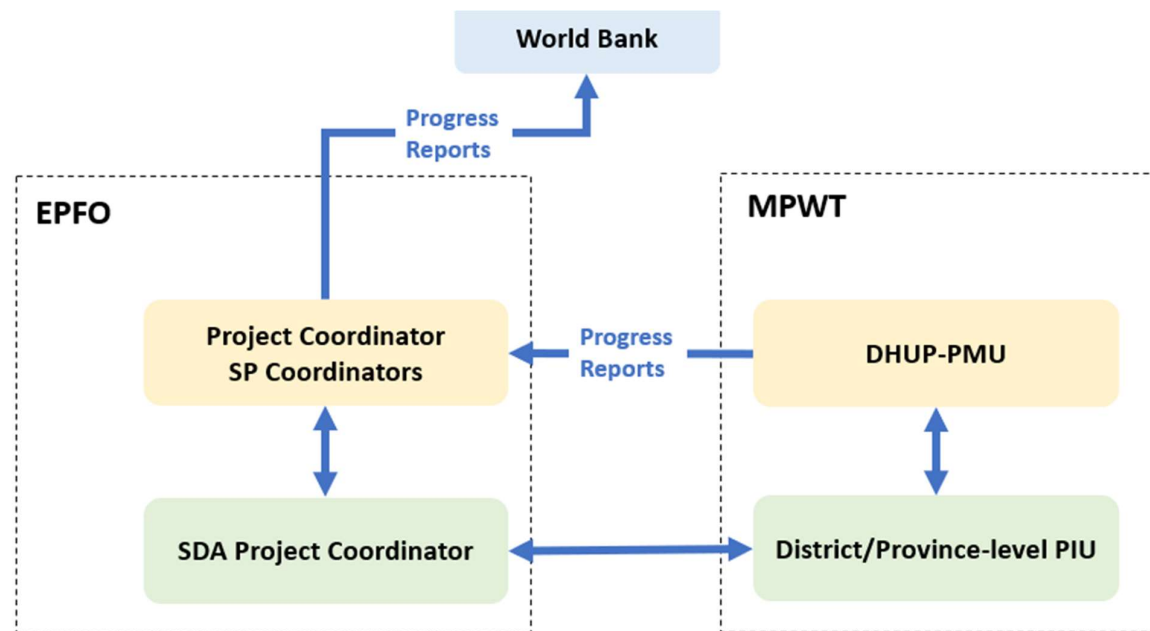


Figure 6-2 Coordination arrangements for the EWMP Project



6.2 SUBPROJECT CYCLE AND ADMINISTRATION

1. **All EWMP sub-projects will meet the following criteria:** (a) support a GoL policy and an officially approved plan, and (b) contribute to at least one outcome indicator and at least one intermediary outcome indicator. They would exclude any activities or expenditures in the negative list contained in the Project Operational Manual (POM) and the environmental and social documents.



117. ***Under EWMP, the sub-project cycle will be as follows:*** (a) SDA will submit a short concept to be reviewed by the EPF for eligibility, (b) if the concept is deemed eligible, the SDA will be invited to prepare a full proposal using the POM sub-project application template (the EPF Office will provide assistance to the SDAs to ensure quality of the proposal and build SDA's capacity), (c) when the SDA submits its proposal, the EPF will appraise it using a check list from the POM and, if necessary help the SDA improve its proposal, (d) when EPF and the project Technical Committee are satisfied that the sub-project meets all relevant criteria, it will be submitted to the World Bank for review, comments and no objection, (e) sub-projects above US\$50,000 to US\$100,000 are submitted to the Vice-Chair of the EPF Board for approval, and sub-projects above US\$100,000 are approved by the EPF Board Chairperson before a sub-grant agreement can be signed with the EPF Executive Director and begin implementation.

118. ***The Project initial portfolio of sub-projects has already completed steps (a) and (b).*** It is expected that they will progress through the steps from (c) to (e) during the first year of the Project implementation with some sub-projects starting early after Project effectiveness. Sub-project performance will be measured along the continuum input, output, intermediary outcome and outcome. However, the trigger for approving the Annual Work Plan and Budgets (AWPB) will be based on performance related to (a) input (use of fund and governance), (b) and output. Each proposal will suggest these triggers.

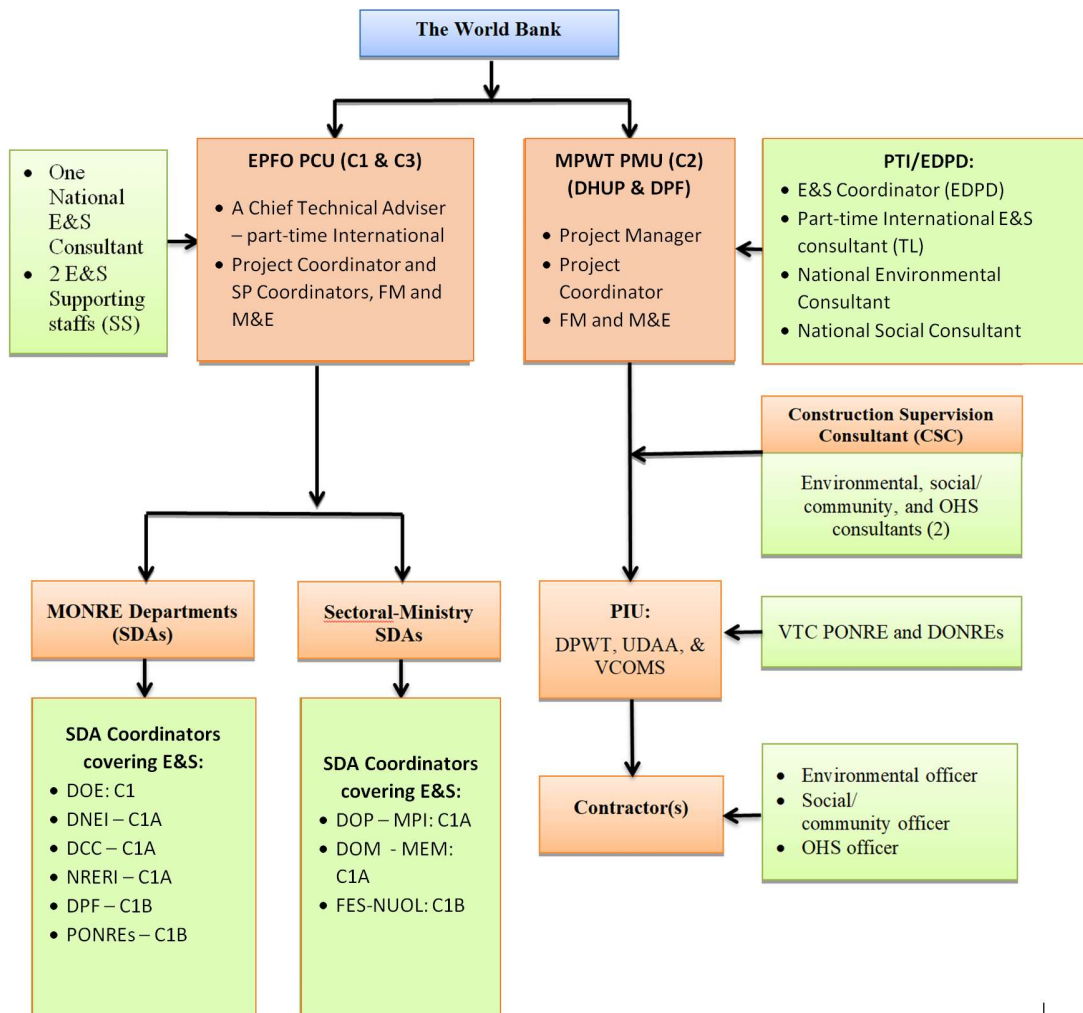
119. ***Each of the SDAs has demonstrated capacity to implement their sub-project.*** Transactions above US\$10,000 will be carried out through direct payment by EPF Office. Procurement above \$10,000 will be carried out by EPF Office. Each SDA will have the option of using a percentage of the sub-project to recruit implementation support TA.

6.3 ESMF IMPLEMENTATION ARRANGEMENTS

120. The ESMF implementation arrangements are broken down into MPWT PMU and EPFO PCU. The MPWT PMU will be responsible for planning, supervision, monitoring and reporting of ESMF implementation for the C2 while EPFO PCU will be responsible planning, supervision, monitoring and reporting of ESMF implementation for the C1 and C3 (See Figure 6-3) and the details of roles and responsibilities are provided in Section 6.3.1 (C1 and C3) and 6.3.2 (C2) below.



Figure 6-3 ESMF Institutional Arrangements



6.3.1 ESMF Implementation Arrangement for CC1 and C3

121. The EPFO PCU will work in close coordination with and provide technical support to Subproject Delivery Agencies (SDA) of MONRE, MPI, MEM other agencies who will be actually planning and implementing the subprojects (sub-components) on the ground, including environmental and social instruments. The EPFO PCU will be tasked with overall supervision and monitoring of the implementation of environmental and social measures including GRM for C1 and C3.

122. The EPFO PCU with the technical support from CTA and E&S consultant team will be responsible for ensuring that E&S requirements are mainstreamed in subprojects activity planning, design and implementation including the TA for 3R, NPAPs, and improving environmental compliance of investment projects and activities. At subproject level, SDAs are responsible for planning and implementation of E&S activities including the implementation and management of the GRM. A user-friendly project GRM system/log of the C1 and C3, to track how many and what type complaints received, responded to, investigated, referred,



resolved, and pending, will be developed, maintained and reported by EPFO PCU in a consistent manner.

123. **E&S clearance:** The EPFO PCU the technical support from CTA and E&S consultant team will review and approve all the ESF documents (ESCOP, ESMP with CHSP, LMP, CoC on SEA/SH and VAC, SEP, EGEP) prepared by contractors and owners of MGA.

a) Subproject Delivery Agencies (SDAs) of Sectoral Ministries

124. This ESMF applies to all project components, thus all SDAs of Sectoral Ministries (MONRE, MPI, MEM other agencies) are responsible for ESF implementation and compliance. All SDAs will assign an E&S focal person to ensure proper implementation of ESF instruments including ESCOP, LMP, Code of Conduct, SEP, GRM and EGEP, if necessary. This includes regular monitoring and reporting to the EPF PCU.

125. All SDAs of Sectoral Ministries will submit quarterly monitoring report of ES implementation to the EPF PCU.

b) Implementation of 3R, NPAPs, and TAs

126. Given that activities and locations of these activities will be identified during Project implementation, the E&S screening and guidelines are provided to facilitate effective and timely planning, implementation, and monitoring the implementation of the ESF instruments to be applied to Project activities.

127. Key responsibilities of the TA related to these programs are as follows:

- Preparing the ESCOP or Do and Don't Measures (including LMP, Code of Conduct, SEP, GRM and EGEP as needed) and submitting it to the EPFO PCU for review and approval.
- Ensuring the approved ESCOP and or Dos and Don'ts is implemented effectively throughout the project implementation.
- Coordinating community relations issues through acting as the community relations focal point (proactive community consultation, complaints investigation and grievance resolution).
- Provide training on OHS, SEA/SH, STD/HIV, COVID-19, etc.
- Preparing progress reports as listed below;
- No works will be authorized before the required ESCOP or Do and Don't Measures has been approved by the PCU EPFO, WB review and approval on ESCOP will be required for the first year of implementation. WB approval on ESCOP for subsequent years will be decided based on the first year implementation experiences. WB approval on ESCOP or Dos and Don'ts is not required.

128. TA for 3R, NPAPs, and improving compliance of investment projects will prepare the



following reports:

- i) **Quarterly Reports:** The Consultants will prepare a comprehensive quarterly report summarizing all activities to be implemented under the TAs, at the end of each quarter (not later than the 14th day of next quarter), and at other times for the Periodic Report when considered necessary by the EPFO PCU because of delays in the subproject implementation or the occurrence of agreement difficulties. The quarterly report will also summarize the performance of the Project activities and staffs performance in implementing their monitoring supervision responsibilities. In addition, the report will also include progress and issues related to the implementation of E&S measures, as well as works' compliance with WB requirements. The report will include reporting on the GRM.
- ii) Each TA related to 3R, NPAPs, and improving environmental compliance of investment projects will also ensure the immediate reporting to the EPFO PCU of complaints related to SEA/SH and/or child abuse, any pollution incident/accident, any fatality and/or bodily harm affecting subproject staff or project affected people, any public opposition, and the issuance of any notice or fine for breach of environmental, labour, health or safety laws and regulation.

c) Accident Reports

129. Reports of the circumstances of any significant accident occurring during the grant implementation will be immediately informed to the EPFO PCU for further report to the WB within 48 hours.

6.3.2 ESMF Implementation Arrangement for C2

130. The Environment and Disaster Prevention Division of the Public Works and Transport Institute (EDPD/PTI) will work in close coordination with and provide technical support to the PMU of MPWT and VCOMS who will be actually planning and implementing the Project on the ground, including environmental and social instruments. EDPD/PTI will be tasked with overall capacity building/training as well as supervision, monitoring and reporting of the implementation of E&S measures, SEP and GRM including ensuring that E&S requirements are mainstreamed in maintenance planning, design and pre-construction works including bidding and contracting documents (BD/CD).

131. MPWT PMU will recruit a qualified ESIA firm to carry out and prepare a full ESIA with SS-ESMP, ARAPs and EGEPs (if applicable) for Km32, Km16 and Naxaythong site. In addition to the preparation of full ESIA report, the selected ESIA firm will also assist PMU to prepare E&S requirements in the BD/CD and conduct training on the approved SS-ESMP, ARAP and EGEP.

132. At subproject level, VCOMS is responsible for planning and implementation of E&S activities including the implementation and management of the GRM. The VCOMS will assign



E&S focal persons to be responsible for compliance with environment and social standards of the Project activities.

133. MPWT PMU will also recruit Construction Supervision Consultant (CSC), which will include environmental, social and OHS specialists, for day-to-day supervision of Contractor performance and implementation support to EDPD/PTI during the construction of C2 including ensuring full compliance with the ESS measures as required by the WB and GOL.

134. More details on ESMF implementation arrangement including the responsibility of the CSC and contractors are provided in the Pre-ESIA.

135. . A user-friendly project GRM system/log of the C2, to track how many and what type complaints received, responded to, investigated, referred, resolved, and pending, will be developed, maintained and reported by MPWT PMU in a consistent manner.

6.4 CAPACITY ASSESSMENT AND NEEDS

136. A Capacity Assessment was made during the preparation of this ESMF through the Key Informant Interview (KII) and the result of this assessment is summarized in Table 6-2 below. The KII was undertaken during 09 to 16 August 2022 with a total of 22 key representatives (9 women) from potential MONRE and MPWT agencies including DOE, DNEI, NRERI, PTI, DHUP, VCOMS, Small B, and Xaythany district hospital. The PONRE of VTE capital postponed its interview but provided written responses to the consultant team.

137. It can be said that at the national level MPWT, MONRE and MPI have experience working with World Bank financed projects, but with a limited experience of implementing environmental and social (E&S) risk management under the Environmental and Social Framework (ESF). Participating local government departments are known to have institutional capacity constraints and current systems for E&S risk management are weak. Building social risk management capacity for land acquisition and stakeholder engagement is included in the project through various ways, including formal as well as informal training, as part of the capacity building program under Component 2 and the TA support for project management under Component 3. Among the key agencies involved in ESMF implementation, EDPD/PTI and EPF are the agencies with knowledge and experience on the new WB’s ESF implementation. However, they have limited staffs to oversee the implementation of ESF instrument for the Project.

Table 6-2: Institutional Capacity Assessment and Needs in Implementing E&S Instruments

Department	Existing Capacity on the WB ESF	Capacity Needs
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Department	Existing Capacity on the WB ESF	Capacity Needs
1) MONRE - DOE: C1	<ul style="list-style-type: none">• A total of 91 staff (41 females)/ 37 staff with environmental and social backgrounds and/or experience (community development, resettlement, livelihood restoration, and stakeholder engagement).• Leads in the development of environmental policy development, planning, and awareness, EIA, and technical inputs in the development and implementation of environmental laws and international conventions.• Involves in the technical discussion/collaboration with relevant departments within MONRE and MPWT on the “criteria” for waste management and monitoring including the site selection, construction, and operation of waste management facilities in accordance to Environmental laws and national standards.• The existing capacity on the WB ESF is limited: Staff rotation within the organization happened regularly enabling staff to broaden technical skills relevant to EIA, but still limited involvement in the new WB ESS training and implementation.	<ul style="list-style-type: none">• Basic understanding of the WB ESSs and the underlying environmental and social standards.• Training on the implementation, monitoring and reporting of the ESF instruments to be implemented under sub-components.
2) MONRE – DNEI: C1A	<ul style="list-style-type: none">• 65 staff (23 females)/26 staff with environmental and social backgrounds and/or experience (community development, resettlement, livelihood restoration, and stakeholder engagement). Some of them gained received ESS training during the previous project (LENS II).• Leads in environmental inspection of the investment projects and other activities within DINE.• During the LENS II, the DINE developed six (06) manuals for	<ul style="list-style-type: none">• Basic understanding of the WB ESSs and the underlying environmental and social standards.• Training on the implementation, monitoring and reporting of the ESF instruments to be implemented under sub-components.



Department	Existing Capacity on the WB ESF	Capacity Needs
	<p>environmental inspection of mineral extraction, agriculture, road, industrial production and hydropower and agreement on environmental inspection.</p> <ul style="list-style-type: none"> • Capable to provide capacity building to provincial authorities on the environmental inspection, monitoring, operation of monitoring equipment, data management and reporting. • The existing capacity on the WB ESF is limited: few staff involved in the implementation of the ESF during the LENS 	
<p>3) MONRE- NRERI: C1A</p>	<ul style="list-style-type: none"> • 65 staff (23 females)/ about 90% of them have an environmental and social background and/or experience. 60% of those have obtained a master's degree. • Leads in environmental research and provide environmental data to relevant departments including the Lao Statistical Bureau (LBS), Department of Inspection of Natural Resources (DINE) • Although NRERI has capable to perform environmental research activities accordant with the developed SOPs, manuals and national environmental standard, but still limit experience on the new WB ESS implementation (no receipt of the WB new ESF training before). 	<ul style="list-style-type: none"> • Basic understanding of the WB ESSs and the underlying environmental and social standards. • Training on the implementation, monitoring and reporting of the ESF instruments to be implemented under sub-components.
<p>4) MPWT - DHUP: C2</p>	<ul style="list-style-type: none"> • 44 staff (11 females)/1 female are in the management position. • Ten (10) staffs have environmental and social backgrounds and/or experience. • Limit experience with the ESF 	<ul style="list-style-type: none"> • Basic understanding of the WB ESSs and the underlying environmental and social standards. • Training on the implementation, monitoring and reporting of the ESF



Department	Existing Capacity on the WB ESF	Capacity Needs
<p>5) PTI: ESMF Planning, supervision, monitoring and report of safeguard activities for C2</p>	<p>Total 67 staffs (22 females), 5 Hmong (1 female). PTI has recently been restructured or combined from two previous institutes. Therefore, the organization and responsibility is under reallocation or reformation. The capacity of PTI on the WB ESF implementation is summarized as below:</p> <ul style="list-style-type: none"> • EDPD under PTI has mandates to manage and supervise E&S safeguards for road and riverbank sectors financed by WB and its co-financers; • EDPD has 8 staffs (3 females): 5 have received training on new ESF • Existing policies: ESOM, WB ESMF and new WB ESF • Currently: managing and supervising E&S safeguards activities for 5 projects financed by the WB, EIB and AIIB (4 road projects and 1 DRM projects) • Currently there are 5 consultants and 13 supporting staffs to assist on the six WB-financed projects. 	<p>instruments to be implemented under sub-components.</p> <ul style="list-style-type: none"> • One E&S focal coordinator (government staffs) • Training on the implementation of the final ESF instruments focusing on environmental pollution, labour management procedure, OHS of waste pickers and CHS. • 1 international E&S consultant as a team leader (part time) and one national E&S consultant (full time) to assist in supervision, monitoring and reporting of ESF instruments implementation starting from preparation of BD/CD and continues through the construction phase; • ESIA firm to conduct ESIA study; • Training on the ESIA and ESMP by the ESIA consultant • 1 pickup car and office facilities for consultants and office administration budget
<p>VCOMS</p>	<p>68 civil servants (22 females)/27 contract staff (Not inclusion of staffs/labours who work at the field such as: waste collectors and street sweepers).</p> <ul style="list-style-type: none"> • Implements the sustainable solid waste management strategy and action plan for Vientiane 2021-2030, manuals on general waste, hazardous and infectious waste handling and relate waste management instructions. 	<ul style="list-style-type: none"> • Basic understanding of the ESMF and the underlying environmental and social standards. • Day-to-day implementation, monitoring and reporting of the ESMP. • Capacity related to RAP and livelihood restoration. • Project Monitoring and Evaluation.



Department	Existing Capacity on the WB ESF	Capacity Needs
	<ul style="list-style-type: none"> No training on the new WB ESS received. However, day-to day occupation health and safety inductions are provided to its staff. 	
<p>PONRE-VTE Capital</p>	<ul style="list-style-type: none"> 183 staff (73 females) 7 females are in the management position, 22 E&S staff (10 females) 6 Master, 12 Bachelors. Never receive training on the new WB ESS. 	<ul style="list-style-type: none"> Basic understanding of the WB ESSs and the underlying environmental and social standards. Training on the implementation, monitoring and reporting of the ESF instruments to be implemented under sub-components.
<p>Small B Small B joined the Vientiane Waste Co-Development program on 09 September 2021 for collection, transferring and disposal of solid waste. (Operation of waste transfer station at Ban Nahai and Km32 landfill; manage ten (10) waste collection contractors; coordinate with Vientiane capital-VCOMS capital and Chanthabouly district VCOMS). Service coverage areas of 07</p>	<ul style="list-style-type: none"> 260 staffs (30 females). According to the provided organization chart, one hazardous team leader and one landfill manager are assigned. Developed work policy, rules and Key Performance Indicator (KPI) for waste management. Do not have experience with the ESF implementation, only Internal OHS induction provided to small B staff on a quarter basis. 	<ul style="list-style-type: none"> Basic understanding of the WB ESSs and the underlying environmental and social standards. Recruitment of key E&S experts. Training on the implementation, monitoring and reporting of the ESF instruments to be implemented under sub-components. Training should be provided to other outsource companies under VCMOs as well.



Department	Existing Capacity on the WB ESF	Capacity Needs
districts (190 villages).		
Xaythany district hospital One district hospital and 11 health centers (souksala) with service coverage of 104 villages (217.000 people).	<ul style="list-style-type: none"> • A total of 48 staff (2 females in the management position)/2 professors for district hospital. • Performs internal specific training on healthcare and treatment practices in accordance with the Ministry of Health and relevant instruction on healthcare, diseases outbreak responses and etc. • Jointly hosted campaign with the district DONRE on waste, wastewater, clean drinking water, malaria prevention, sex education and etc. • Never have training on ESF. • Current waste management practices: In March 2022, WHO supported handheld cut tools for sharp waste and high pressure incubator for disinfecting the infectious waste. Presently, the Xaythany district hospital performs treatment of its infectious waste before transferring to the waste collector. • Three types of waste generated by the hospital. Sharp waste (0.5kg/week); infectious waste (10kg/week) and general waste (about 30 kg/week). The sharp waste after cutting and infectious waste are incubated in the high pressure incubator (>100°C for 20-30mn), the general waste is also segregated by the housekeeper. 	<p>Under support from the WHO, Xaythany district hospital improved its waste management since march 2022:</p> <ul style="list-style-type: none"> • Established a standard waste storage facility with concrete floor, bunding, wire barb fence and roof. The standard waste bins were also provided by WHO; • The induction on safe handling of waste is conducted on quarterly. • They need more training if there is a support from the EWMP. • Basic understanding of the ESMF and the underlying environmental and social standards. • Occupational Health and Safety for handling of sharp and infectious waste.

138. On-the job training on the EWMP Relevance ESSs and preparation of the ESF instruments has been provided for focal points of SDAs in the EPFO on 08 August 2022 to determine gaps and capacity needs for the project focal points. A total of 09 staff (2 females) from EPF, DOE, DINE, and NRERI, PTI, HUPD, and the ESF national Environmental and social consultants (list of participants provided SEP). The workshop aimed to assess and build the



capacity building on the WB ESF relevance to the project and the process to prepare ESF instruments for the project. The training outcomes are summarized as follows:

- The improved knowledge and understanding of the EPF and Component coordinators on the WB standards applied for the Project and ESF instruments to be prepared for the project which most of them had no experience on the new WB ESF except one EPF coordinator had experience with implementation of ESF instruments;
- Community consultation plan and FGD and KII questionnaire was discussed, clarified and revised;
- A focal point WhatsApp group was set up to ensure smooth coordination and information sharing during the public consultation and through the ESF preparation stage;

139. The E&S trainings will be provided to the assigned project coordinators and E&S focal points of SDAs, EPFO PCU and MPWT PMU, DPWT and VCOMS to ensure that the most relevant agencies have qualified ES staffs and capacity to implement ESF instruments. Table 6-3 below summarizes the proposed trainings and workshops for the EWMP key personnel and other stakeholders needed to strengthen capacity. Table 6-3 Proposed E&S Trainings and Workshops

No.	Trainings and Workshops	Target Participants
1	Introduction to World Bank ESF ESSs	Key personals and E&S focal points of EPFO PCU, MPWT PMU, DPWT, VCOMS, SDAs and financed SMEs and Matching Grants
2	The overview and key points of ESF instruments (ESCP, ESMF, SIA-SMPs, Pre-ESIA and SEP)	Key personals and E&S focal points of EPF PCU, MPWT PMU, DPWT, VCOMS, SDAs and financed SMEs and Matching Grants
3	The implementation, monitoring and reporting of ESMP, EGEP and SEP, GRM for CC1 and C3	Key personals and E&S focal points of EPF PCU, SDAs and financed 3R and GCB activities
4	The implementation, monitoring and reporting of ESMP, ARAP/RAP, EGEP and SEP, GRM for C2	E&S focal points of MPWT PMU, DPWT, VCOMS, CSC and contractors
5	The implementation, monitoring and reporting of CESMP	E&S focal points of MPWT PMU, DPWT, VCOMS, CSC and contractors

6.5 PROJECT ESF PERSONALS AND CONSULTANTS

140. **For C1 AND C3:** The EPF-PCU will hire and mobilize one (1) International Chief Technical



Advisor (CTA) (part-time), one (1) National Social Consultant (full-time) and one (1) National Environmental Consultant (full-time). These consultants will assist EPFO PCU in planning, supervision, monitoring and reporting of ESMF implementation including capacity building to E&S focal points of MONRE SDAs, SDAs of Sectoral Ministries and MGA. The two E&S full time consultant will also assist EPFO PCU in supervision, monitoring and reporting of MGA implementation. The hiring of the E&S consultants will be completed within 3 months after Project effectiveness.

141. **For C3:** The MPWT-PMU will hire one International E&S Consultant as E&S Team Leader (part-time) and one full time national environmental consultant (with qualifications/expertise in environmental management, ESHS in solid waste management) and one full-time social consultant (with qualifications/expertise in social/resettlement, livelihood restoration, stakeholder engagement and GRM) to assist MPWT-PMU and PTI in planning, supervision, monitoring and reporting of ESMF implementation including capacity building to E&S focal point (PTI), VCOMS and contractors.

142. **For SDAs of Sectoral Ministries (MONRE, MPI, MEM, NUOL, and MPWT):** Subproject coordinators will also be responsible for E&S coordination, monitoring and report of E&S activities of SDAs.



7 CONSULTATION AND STAKEHOLDER ENGAGEMENT

143. The objectives of the Stakeholder Engagement Plan are to:

- Offer opportunities for stakeholders to raise their concerns and submit their opinions, to incorporate this into the project when possible, and to provide this feedback to stakeholders.
- Create avenues for complaints handling and grievance management.
- Create opportunities for information sharing and disclosure.
- Foster strong project community relationships.
- Ensure meaningful consultation and the consideration of stakeholder's expectations and concerns into the implementation arrangements for the programme, including feedback on environmental and social mitigation measures and their implementation.

144. In order to achieve this, the project will:

- Provide meaningful information in a format and language that is readily understandable.
- Provide information in advance of consultation activities when possible.
- Disseminate information in a manner and location easy for stakeholders to access it.
- Establish a two-way dialogue that gives the Project and stakeholders the opportunity to exchange views and information, and have issues heard and addressed.
- Ensure inclusiveness in representation of views, including those of women, the elderly people living with a disability, ethnic peoples, and other vulnerable people, as necessary.
- Ensure any obstacles to participation that are identified are removed so that views of different stakeholders can be obtained.
- Ensure there are clear mechanisms for responding to people's concerns, suggestions, and/or grievances.
- Incorporate feedback of stakeholders into project design, and report back to stakeholders.
- Monitor stakeholder engagement activities and include project stakeholders in monitoring to the extent possible.
- Incorporate stakeholder engagement as part of the Project management responsibilities of the EPFO, MPWT and MONRE, and ensure staff, especially the



Environment and Social focal persons are equipped with specific responsibilities and budget.

145. For C1,2 & 4, EPFO PCU will ensure that MONRE SDAs and MPI SDA will implement activities with more extensive consultation following SEP procedures that are being prepared and to be applied to all project activities and components;

146. For C3, the project has engaged stakeholders at various stages: during the initial design of landfill, and will continue during detailed design, prior to civil works commencing and during, and post-civil works. Engagement will vary in each stage of the project life. More details on stakeholder engagement please see the Stakeholder Engagement Plan as a stand-alone document. The SEP will be dynamic and flexible to changes throughout the project life. The SEP should be read together with other project documents (i.e., ESMF/ESIA-ESMP, RPF/RAP, EGEF/EGEP and ESCP).

147. There will be several ways to engage with stakeholders and the Project shall choose the most appropriate method depending on the type of stakeholder and the goal of engagement. The project is expected to involve diverse groups of stakeholders from national to village levels, including local communities, government line agencies, mass organizations and the private sector.

7.1 CONSULTATIONS DURING PROJECT PREPARATION

148. Key Informant Interviews (KII) and Focused Group Discussion with key concerned departments and local communities have been carried during 9 to 16 August 2022 with key objectives. The key objectives of the consultation are to:

- Collect relevant information from the key project implementing entities to assess institutional arrangements and capacity;
- Present the main objective of the EWMP and its brief project description;
- Seek their opinions on the project development and implementation;
- Collect their opinions on the potential positive and negative impacts of the EWMP as well as their suggestions and recommendations.

149. Key Informant Interview (KII) was undertaken during 09 to 16 August 2022 with a total of 22 key representatives (9 women) from DOE, DINE, NRERI, PTI, DHUPD, VCOMS, Small B, and Xaythany district hospital. The summary of KII is summarized as follows:

- Positive impacts: Improve environmental and waste management, more employment opportunities and income, promote involvement of private sector in the waste management
- Concerns on sustainability of the project, labour influx leading to social/community conflicts with communities, unfair employment rate, labour discrimination, odour, fly, increased transportation to new landfill facilities, and road safety, resettlement, social conflicts, child, OHS of waste pickers and collectors



- **Recommendations and suggestions:** (i) set clear roles and responsibility among the relevant agencies (for example: design, construction, operation and monitoring and reporting etc); (ii) the operation agency needs to pay attention on O&M practices to ensure sustainable management of the waste management facilities; (iii) development of operation manual and capacity building; and (iv) regular monitoring and evaluation and ensure that the E&S management plan and the O&M are strictly followed.

150. Focused Group Discussion (FGD) was carried out on 11 August 2022 by the EPF consultants together with technical staffs from EPFO, NRERI and PTI in Naphasouk village, the Km32 landfill and Nahai village (Km16 Transfer Station) with a total of 82 participants including 52 females. Most of them are Lao Tai with only 3 participants (registered waste pickers) are Khmu. There were representatives from village authorities, local residents, informal waste pickers³¹, and registered waste pickers at the Km32. The team was divided into two sub-teams and carried out the FGD at the three locations given above on the same date and during FGD the participants were divided into small group of 8-10 participants. The summary of FGD is summarized as follows:

- As per information provided by village authority, about 195HHs with 1800 people including 482 females (all are Lao Tai) in Naphasouk village and 90% of them depends on waste picking and selling;
- There are 264 registered waste pickers (124 females and 140 males) with ages ranging from 14 to 63 years old. Most of them are Lao Tai with only 3 are Khmu. The registered waste pickers are those individuals whose names are registered with VCOMs. However, individuals from nearby villages are considered unregistered waste pickers if they come only to collect recyclable waste materials on a seasonal basis and they also have other sources of income.
- There are OHS Risks including accidents and injuries from excavator excavated the waste without signaling or warning. Surprisingly, they said they did not have health issues (only normal cold and fever) and they did not smell any things from the landfill which was different from information given by the village authorities;
- Village authorities of Naphasouk village: support the project development as there is a need to improve the waste management in the VTE capital but request the project to help on the villagers (waste pickers) on their livelihood.
- Both villagers from Naphasouk village (who are considered themselves as seasonal waste pickers) and registered waste pickers do not support to move the waste to other place. If no waste to pick some of them said they will find work at available factories but it will be hard because only husband can go to work at factory and wife has to care kids and family.

³¹ General villagers who are seasonal waste pickers



Salary at factory is low about LAK1.5m which is not enough to send their kids to schools, or they may not be able to send their kids to school;

- Villagers from Naphasouk village do not recommend building toilet and shelter at the landfill because no one taking care and the shelter can create social issues such as: place drug and alcohol consumption can lead to violence and sexual harassment and abused. The toilet had been built by Pheun Mit Charity (A charity helping homeless and poor people). However, registered waste pickers have requested for toilets and shelter at the landfill;
- Both Villagers from Naphasouk village and registered waste pickers have requested the followings (i) an increase in unit rate paid for their collected recycle wastes as now it is low (LAK300/Kg); (ii) more excavators to move/push the waste so they can easily short the waste, big space for sorting the waste; (iii) request the excavator driver to provide signal or warning (horn); (iv) a safe space to park motorbike and motorbike with extended trailer and happy to pay fees (2000-5000LAK for security man to watch/protect their motorbike; (v) request for PPE; (vi) rehabilitation of access road: pave the road (or at least gravel) for both access road to Km32 and to Km16.

151. Feedback, recommendations, and concerns raised during the KII and FGD have used to refine the identification of potential risks, and impacts (both positive and adverse), validate key assumptions and improve risk mitigation measures proposed in this ESMF, Pre-ESIA and SIA. These processes were also used to ensure that the ESMF is known to stakeholders. More details of the KII and FGD results with list of Participants are provided in the project's Stakeholder Engagement Plan (SEP).

152. This ESMF and Executive Summary of Pre-ESIA were disclosed on 29 November 2022 (including Lao translations of the Executive Summaries) and stakeholder consultations at national level was conducted on 20 December 2022 (morning session for national level participants and afternoon session for capital, district and village level participants).

153. The SEP includes full details of the consultations carried out during project preparation, including concerns/comments and should be read together with this ESMF.

7.2 CONSULTATIONS DURING PROJECT IMPLEMENTATION

154. Stakeholders will be kept informed as the project develops, including reporting on project environmental and social performance and implementation of the stakeholder engagement plan and grievance mechanism. The site specific ES instruments will also be disclosed and consulted on site with local communities. The EWMP shall report quarterly to the public before and during construction when the public may experience more impacts and annually during implementation. Consultations on specific activities shall be undertaken. In addition to written reports submitted to relevant departments/offices, reporting shall be undertaken in the form of meetings/workshops at provincial, district and village levels,



involving presentation and discussion. More details are provided in SEP.

7.3 REPORTING BACK TO STAKEHOLDERS

155. The Stakeholder Engagement Plan will be periodically revised and updated as necessary in the course of the EWMP implementations in order to ensure that the information presented herein is consistent and is the most recent, and that the identified methods of engagement remain appropriate and effective in relation to the project context and specific phases of the development. Any major changes to the project related activities and to its schedule will be duly reflected in the SEP.



8 GRIEVANCE REDRESS MECHANISM

156. The overall project Grievance Redress Mechanism (GRM) is also applicable to Gender Based Violence (GBV), Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) and Violence Against Children (VAC) related grievances, although complainants can also choose to submit their complaints directly to GBV Service Providers. The key principles of the grievance mechanism are to ensure that:

- The basic rights and interests of affected people, including ethnic groups, are protected.
- The concerns of affected people, including ethnic groups, arising from the project implementation process are adequately addressed.
- Entitlements or livelihood support for affected people, including ethnic groups, if required, are provided on time and accordance with the government policy and World Bank's ESF, and
- Affected people, including ethnic groups, are aware of their rights to access grievance procedures free of charge for the above purposes.

157. The GRM seeks to resolve concerns promptly, using an understandable process that is culturally appropriate and readily accessible at no cost. Grievances can be submitted if someone believes the Project is having a detrimental impact on the community, the environment, or on their quality of life. Stakeholders may also submit comments and suggestions.

158. The EPFO PCU will be responsible for receiving and resolving in a fair, objective, and constructive manner, all concerns or complaints raised in related to the C1 AND C3 while MPWT PMU will be responsible for receiving and resolving in a fair, objective, and constructive manner, all concerns or complaints raised in related to C3. Their broad responsibilities of the grievance management include:

- Developing and publicizing the grievance management procedures.
- Receiving, reviewing, investigating, and keeping track of grievances.
- Adjudicating grievances.
- Monitoring and evaluating fulfillment of agreements achieved through the grievance mechanism.

159. For the interest of all parties concerned, the grievance mechanism is designed with the objective of solving disputes as soon as possible. A recommended timeframe for the resolution of a complaint should be sought within two weeks.

160. In the EWMP it is envisaged there could be five types of grievances:



- Grievances relating to land acquisition, that follow the Resettlement Action Plan's GRM (detailed in the project's RPF/Draft RAPs).
- Grievances related to ethnic groups who may be excluded from project activities, attachment to land, different cultural practices, low literacy levels, lack of Lao language
- Grievances related to Gender-Based Violence (GBV), Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH); and Violence Against Children (VAC
- Grievances related to project implementation (including relating to environmental and social impacts, health, worker's camp, pollution and waste, etc.). Some of these may be specific to ethnic groups.
- Job-related disputes (detailed in the project's LMP).

161. More details on GRM provided in SEP.



9 MONITORING AND REPORTING

162. Monitoring is the method of ensuring mitigation measures are being implemented in accordance with ESMF and ESCP and are effective. Semi-annual monitoring reports will need to be undertaken in order to:

- Improve environmental and social management practices;
- Ensure the efficiency and quality of the environmental and social assessment processes;
- Establish evidence- and results-based environmental and social impact assessment; and
- Provide an opportunity to report the results of the implementation of mitigation measures in future ESMPs and other project related documents.

163. To ensure effective implementation of the ESMF requirements, EPFO PCU (Section 9.1) and the MPWT PMU (Section 9.2) will put in place the following monitoring and reporting system which includes both internal monitoring and reporting and external monitoring and reporting.

9.1 MONITORING AND REPORTING FOR C1 AND C3

164. At project level The MPWT PMU with technical support from CTA and E&S consultant will conduct quarterly ESMF compliance monitoring of C1 and C3 on the implementation of ESCP, ESCOP, ESMPs, EGEP and SEP to track compliance and adopt measures as necessary throughout implementation of the Component 1 and C3. EPFO PCU will prepare and submit six-month monitoring reports to the WB for review and comment. Compliance of ESMP and other applicable documents by the SDAs and MGAs will be monitored. Please see Table 9-1 for the proposed monitoring measures.

165. At sub-component level, the SDAs and owner of MGA will be responsible for monitoring the implementation of mitigation measures as approved in the ESMP, ESCOP and SEP. Quarterly monitoring reports from the SDAs and Owner of MGA will include:

- List of consultations held, including locations and dates, name of participants and occupations.
- Main points arising from consultations including any agreements reached.
- Performance on GRM implementation: a consolidated log or ability to easily aggregate (e.g., across the two main PMUs) including record of grievance applications and status of grievance addressed and pending.



- Monitoring data on environmental and social measures detailed in ESMPs and/or other applicable reports.
- Assessment of compliance with E&S measures in accordance with ESCOP and ESMP including CoC, LMP, CHSP and SEP
- Number of trainings of community groups and workers in environmental and social issues (if any).

166. The EPFO PCU will prepare a consolidated six-month monitoring reports for CC1 and C3 and submit to the WB which in addition to the above data will include:

- Number of national, regional, and/or provincial staff and counterparts trained on ESF compliance.
- Number of ESMPs/other plans prepared and number cleared by WB.
- Number of technical recommendations provided during supervision and monitoring that has been implemented.

167. These reports will be filed to permit easy retrieval and indicators will be incorporated into the Project M&E system.

168. Monitoring will also cover grievance redress, implementation of EGEF/EGEP (if necessary), and implementation of the SEP. Monitoring of environmental and other social impacts should focus on ensuring that all environmental and social mitigation measures are implemented as per the ESCOP and ESMP (including the LMP, CHSP and COC on SEA/SH and VAC).

169. Data should be gender-disaggregated as much as possible. How and when monitoring indicators will be measured should be defined in the ESCOP and ESMP and other relevant plans.

170. Monitoring and evaluation of the social impacts should at least measure the following:

- RAP / Livelihood restoration plan status and implementation;
- Impacts and benefit sharing with Ethnic Groups if applicable as per the EGEF/EGEP;
- Consultations conducted and a minimum assessment of the representativeness, inclusion, and aspects to assess meaningfulness/adequacy of consultations;
- Number of women working on the subproject;
- Number of trainings provided to women and vulnerable groups, and the impacts of these trainings (i.e. whether knowledge on a topic was enhanced, on SEH/SH and VAC, HIV/AIDS or Covid-19 for example);
- Number of trainings conducted with translation into relevant ethnic languages.
- Efficacy of the grievance redress mechanism (for the community and for workers);



- Incidence of SEH/SH and VAC and whether community members feel grievance redress methods are appropriate;
- Evidence of all workers having received awareness training on and signed/acknowledged CoC;
- Age of workers and that all workers have contracts in place with adequate pay that is at least the minimum wage;
- Training provided to workers, use of PPE and other LMP related aspects;
- Other monitoring indicators as may be described in the ESCOP and ESMP or other related project documents.

171. **Accident Reports:** Reports of the circumstances of any significant accident occurring during the implementation of C1 and C3 will be promptly informed to the EPFO PCU within 48 hours. Specific reports related to the incident will be prepared and submitted as required by the WB. EPFO PCU will also conduct root cause analysis, make recommendations to avoid future incidence, as well as monitor and audit implementation of agreed recommendations.

Table 9-1 Proposed Monitoring Measures for C1 and C3

Parameter to be Monitored	Location	Means of Monitoring	Schedule/ Frequency	Responsible Agency for Monitoring
Social aspects include in TORs, and developed in the respective TAs on strategic documents and action plans	Vientiane	Review of sub-component documentation	Prior to approval of subproject activities	EPFO PCU
Completion of subproject activities in accordance with ESMF, SMP and SEP requirements, including the preparation of ESMPs and EGEPs, updating ESCOP and SEP	Vientiane	Review of sub-component documentation	Prior to approval of subproject activities	EPFO PCU
Implementation of all mitigation measures specified in the ESCOP, ESMP with EGEP	All subproject sites	This will need to be defined in the ESMP but is expected to be conducted by conducting site visits to check SDAs and Grant	This will need to be defined in the ESMPs but some measures are expected to be conducted prior to	EPFO PCU,SDAs and owner of MGA



Parameter to be Monitored	Location	Means of Monitoring	Schedule/ Frequency	Responsible Agency for Monitoring
		Receivers' facilities, environmental management practices, reviewing worker's contracts arrangements, conducting focus groups with women workers, conducting focus groups in the community to inquire about contractor-community relations, etc.	the start of works (such as UXO assessment for C1C establishment of air and water monitoring stations), while others will be throughout the construction period	
Implementation of the SEP	All subproject sites	As defined in the SEP	As defined in the SEP	EPFO PCU,SDAs and owner of MGA

9.2 MONITORING AND REPORTING FOR C3

172. The MPWT PMU with technical support from EDPD/PTI will conduct quarterly internal monitoring while and VCOMS with technical support from CSC will conduct daily internal monitoring on the implementation of C-ESMPs, EGEP and SEP to track compliance and adopt measures as necessary throughout implementation of the Component 3. MPWT PMU will prepare and submit six-month monitoring reports to the WB for review and comment. VCOMS with technical support from CSC will prepare and submit quarterly reports to MPWT PMU. Compliance of ESMP, EGEP and other applicable documents by the civil works contractor and/or responsible agencies will be monitored. Please see Table 9-2 for the proposed monitoring measures.

173. At subproject level, VCOMS staff, together with PONRE and local communities including ethnic groups, if necessary, will be responsible for monitoring the implementation of mitigation measures as approved in the ESMP and C-ESMP Quarterly monitoring reports from VCOMS will include:

- List of consultations held, including locations and dates, name of participants and occupations.
- Main points arising from consultations including any agreements reached.
- Performance on GRM implementation including record of grievance applications and status of grievance addressed and pending.



- Monitoring data on environmental and social measures detailed in ESMPs and/or other applicable reports.
- Number of construction supervision reports that include assessment of contractor's compliance with E&S measures in accordance with and CoC, LMP, and OHS
- Number of trainings of community groups and workers in environmental and social issues (if any).

174. EDPD/PTI in coordination with DPWT/PIU will prepare a consolidated six-month monitoring reports for MPWT PMU which in addition to the above data will include:

- Number of national, regional, and/or provincial staff and counterparts trained on ESF compliance.
- Number of ESMPs/other plans prepared, disclosed, consulted and number cleared by MPWT PMU and WB.
- Data on the performance and ESMP implementation which can feed from supervisors' reports but be processed PMU ES staffs including any remedial measures that have been suggested and how they are being implemented.
- Number of technical recommendations provided during supervision and monitoring that has been implemented.

175. These reports will be filed to permit easy retrieval and indicators will be incorporated into the Project M&E system.

176. Monitoring will also cover grievance redress, implementation of land acquisition activities in accordance with the RPF/RAP and EGEF/EGEP (if necessary), and implementation of the SEP consultation and disclosure activities. Monitoring of environmental and other social impacts should focus on ensuring that all environmental and social mitigation measures are implemented as per the ESMP (including the LMP).

177. Data should be gender-disaggregated as much as possible. How and when monitoring indicators will be measured should be defined in the ESMP and other relevant plans. Table 9-2 presents proposed ESMF monitoring measures while the details E&S monitoring measures are provided in the Pre-ESIA.

178. **Accident Reports:** Reports of the circumstances of any significant accident occurring during the implementation of C2 will be promptly informed to the MPWT PMU within 48 hours. Specific reports related to the incident will be prepared and submitted as required by the WB. MPWT PMU will also conduct root cause analysis, make recommendations to avoid future incidence, as well as monitor and audit implementation of agreed recommendations.



Table 9-2: Proposed Monitoring Measures for C2

Parameter to be Monitored	Location	Means of Monitoring	Schedule/ Frequency	Responsible Agency for Monitoring
Completion of detailed design in accordance with Pre-ESIA, ESMF (including LMP), RPF, EGEF and SEP requirements, including the preparation of required site-specific ESMPs, updating of the SEP, and RAPs and EGEPs as needed	Vientiane	Review of detailed design documentation	Prior to approval of detailed design	MPWT PMU; EDPD/PTI and VCOMS
Implementation of all mitigation measures specified in the ESMP (based on guidance of those specific in the ESMF and Pre-ESIA)	All three sites	This will need to be defined in the ESMP (in line with Pre-ESIA) but is expected to be conducted by conducting site visits to check contractor's facilities, environmental management practices, reviewing worker's contracts arrangements, conducting focus groups with women workers, conducting focus groups in the community to inquire about contractor-community relations, etc.	This will need to be defined in the ESMPs (in line with Pre-ESIA) but some measures are expected to be conducted prior to the start of works (such as UXO assessment, establishment of GRM), while others will be throughout the construction period	EDPD/PTI, and VCOMS and CSC



Parameter to be Monitored	Location	Means of Monitoring	Schedule/ Frequency	Responsible Agency for Monitoring
Implementation of the SEP	All subproject sites	As defined in the SEP	As defined in the SEP	EDPD/PTI, and VCOMS and CSC
Implementation of all mitigation measures specified in other project documents that may be required, such as RAPs and EGEPs	All subproject sites	As defined in RAPs or EGEPs	As defined in RAPs or EGEPs	EDPD/PTI, and VCOMS and CSC

9.3 EXTERNAL MONITORING

179. Given the substantial E&S risk of C2, an external monitoring of the implementation performance of both environmental and social measures will be conducted by Consultant/s to be hired by the MPWT PMU. Efforts will be made to invite representatives from local communities and mass organizations to participate in the process. A technical ESF will assess the performance and compliance with ESMF, specifically whether (i) the ESMF process, including SMP (LMP, CHSP, RPF and EGPF if relevant) and SEP, is being correctly adhered to (ii) relevant mitigation measures have been identified and implemented effectively and (iii) the extent to which all stakeholder groups are involved in Project implementation. The technical audit will also indicate whether any amendments are required in the ESMF approach to improve its effectiveness and ensure that the project investment ESMPs are developed/cleared and effectively implemented. The external monitoring report will be submitted to the WB. The cost for External Monitoring for C2 will be under MPWT PMU budget.



10 INDICATIVE BUDGET

180. ESMF implementation cost will include the cost for implementation of this ESMF, SMPs, ESCP and SEP, including staff costs, travel, consultation workshops, translation and trainings. The total indicative cost reviewed is estimated at **USD1,226,000** plus the costs of specific mitigation measures in the ESMPs, ARAPs and EGEPs (if applicable). The cost for ESMF implementation for C1 and C3 is estimated at **USD606,000** while for C2 is estimated at **USD620,000** including the cost for full ESIA study and budget will be part of C2 cost (See Table 10-1) This budget is indicative only and should be further refined during the preparation of a full ESIA for Component 2 and site-specific ESMPs. The cost for resettlement and compensation will be the responsibility of the Government of Laos (GOL) if necessary. Also the cost of the implementation of E & S measures by the contractors will be under contractor's contracts. The cost for External Monitoring for C2 will be covered under MPWT PMU budget. The estimated budget for ARAP/RAP including livelihood restoration of waste pickers will be confirmed during full ESIA stage and this will be responsible by the MPWT if applicable. See Annex 8 Detailed of the Estimated ESMF Implementation Budget.

Table 10-1 Estimated Budget for the ESMF Implementation

No.	Description	Notes	Total (USD)
I	ESMF Implementation for C1 and C3		606,000
1.1	Consultants and Supporting Staffs		453,000
1.2	Implementation, Internal Monitoring and Evaluation of ESMF (ESMP, EGEP and SEP including GRM)		153,000
1.3	Procurement of logistic supports and office facilities	included in PMU operational cost	-
II	ESMF Implementation for C2		620,000
2.1	Consultants and Supporting Staffs		280,000
2.2	Implementation, Internal Monitoring and Evaluation of ESMF (ESMP, EGEP and SEP including GRM)		40,000
2.3	Preparation of Full ESIA and ESMP		300,000
2.4	Procurement of logistic supports and office facilities	included in PMU operational cost	-
Total Estimated ESMF Implementation Budget			1.226.000



11 LIST OF ESMF ANNEXES AND ATTACHMENTS

181. The following lists of ESMF Annexes and SIA-SMP Attachments are provided in separated documents.

ESMF Annexes provided in Volume II:

- Annex 1 Project Description
- Annex 2 Detailed National Legal Frameworks
- Annex 3 Site Selection Criteria separately for Naxaythong and new Construction Materials Sites
- Annex 4 Guidance Note on Regulatory Impact Assessment for C1
- Annex 5 Guideline for Preparation of Site-Specific ESIA and ESMP for C2
- Annex 6A Simple Environmental and Social Code of Practices for C1 and C3 covering Code of Conduct on SEA/SH and VAC
- Annex 6B Simple Do and Don't Measures for 3R and GCB activities under C1
- Annex 7: Executive Summary of Pre-ESIA for the Km32
- Annex 8: Detailed of Estimated Budget
- Annex 9: Draft TOR for International and National Consultants – an apply/modify to all EPFO PCU and MPWT PMU

Attachments provided in a standalone SIA-SMP:

- Attachment 1A: Labour Management Procedures (LMP) with Worker Grievance Procedure for C2
- Attachment 1B: Labour Management Procedures (LMP) with Worker Grievance Procedure for C1 and C3
- Attachment 2: Community Health and Safety Plan (CHSP) for all Components
- Attachment 3A: Simple Code of Conduct on SEA/SH and VAC for C2
- Attachment 3B: Code of Conduct on SEA/SH and VAC for C1 and C3
- Attachment 4: Resettlement Policy Framework (RPF) (including livelihoods restoration for waste pickers)
- Attachment 5: Ethnic Group Engagement Framework (EGEF)