



# Environmental Management Plan

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Updated Environmental Management Plan  
Project Number: 47300-002  
April 2019

## LAO: Northern Smallholder Livestock Commercialization Project

Prepared by Department of Livestock and Fisheries through the Ministry of Agriculture and Forestry of Lao PDR, the Asian Development Bank (ADB) and International Fund for Agriculture Development (IFAD).

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Asian Development Bank

**Northern Smallholder Livestock Commercialization Project**

**ADB Loan No.3198-LAO and IFAD Loan No. 2000001743**

**Environmental Management Plan**  
**Phaxay District Wet Market Subproject**  
**Xieng Khouang Province**

**April 2019**

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## ACRONYMS AND ABBREVIATIONS

ADB	Asian Development Bank
DAFO	District Agriculture and Forestry Office
DIU	District Implementation Unit
DOIC	Department of Industry and Commerce
DONRE	District Office of Natural Resources and Environment
EARF	Environmental Assessment Review Framework
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESIA	Environmental and Social Impact Assessment
LIC	Loan Implementation Consultant for the Project
GOL	Government of Lao PDR
GRM	Grievance Redress Mechanism
IEE	Initial Environmental Examination
IFAD	International Fund for Agriculture Development
MAF	Ministry of Agriculture and Forestry
MI	Ministerial Instruction
MONRE	Ministry of Natural Resources and Environment
NPMO	National Project Management Office
NSLCP	Northern Smallholder Livestock Commercialization Project
O&M	Operations and Maintenance
PAFO	Provincial Agriculture and Forestry Office
PIU	Provincial Implementation Unit
PONRE	Provincial Office of Natural Resource and Environment
SF	Special Fund
XK	Xiengkhouang Province

## 1 INTRODUCTION

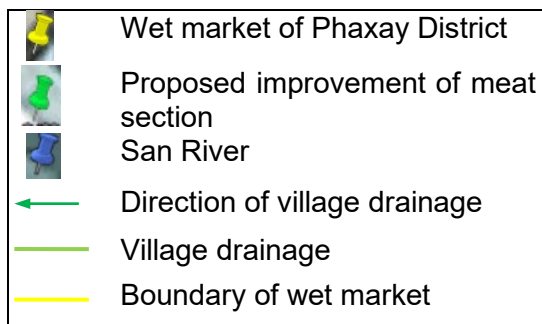
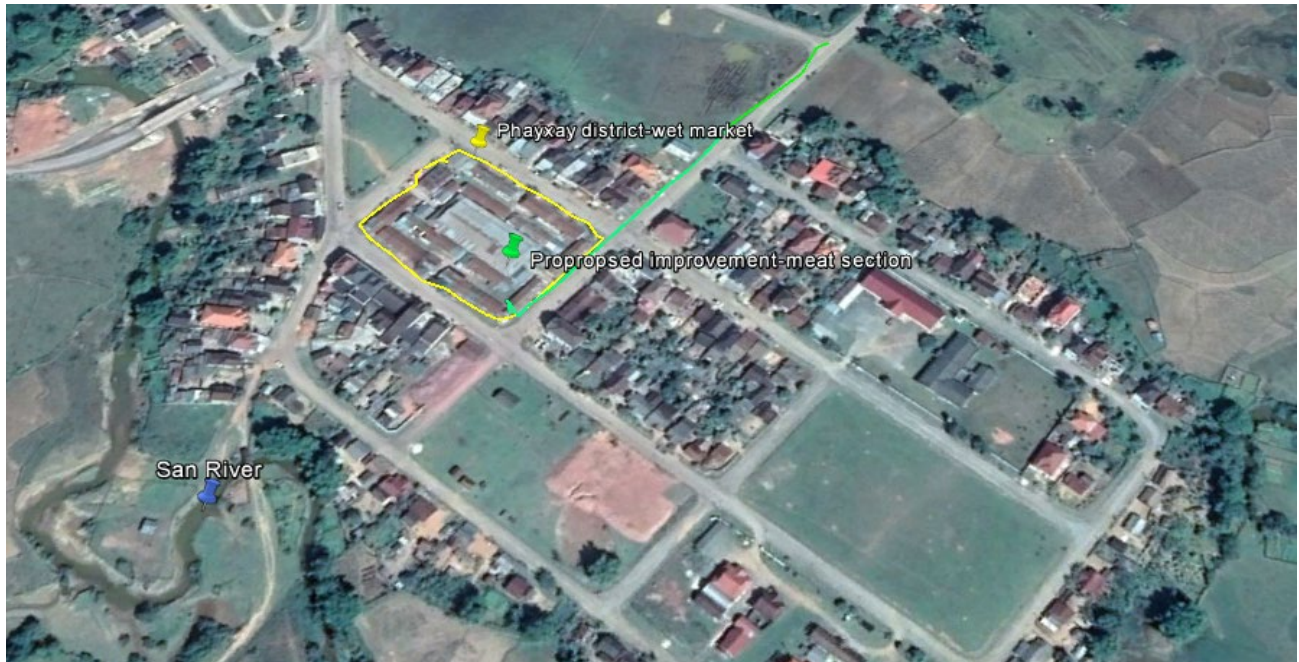
1. This Environmental Management Plan (EMP) outlines environmental protection measures for the small-scale physical and operational improvements that are to be implemented for upgrading of the meat section of the Phaxay District Wet Market.
2. The planned meat section improvements will be undertaken using funds provided by the Northern Smallholder Livestock Commercialization Project (NSLCP) which is funded by Asian Development Bank (ADB) Loan 3198-LAO (SF).
3. The Ministry of Agriculture and Forestry (MAF) is the NSLCP Executing Agency. Xiengkhouang is one of four provincial governments that are the key Implementing Agencies; implementation is being undertaken through the Xiengkhouang Provincial Agriculture and Forestry Office (PAFO) which has established a Project Implementation Unit (PIU) to implement activities at the provincial level.
4. The EMP has been prepared following guidance provided in the NSLCP Environmental Assessment and Review Framework (EARF) (NSLCP 2014) and based on a rapid environmental assessment of the Phaxay District Wet Market undertaken during 8-10 January 2019.

## 2 SUBPROJECT DESCRIPTION

### 2.1 EXISTING FACILITY

5. The Phaxay District Wet Market is in a flat area near the center of Latkhai Village (**Figure 2.1**). Layout of the wet market is shown in **Annex A**. The meat section of the market is bordered by fresh vegetable section, grocery and dry food sections, those sections are all in the same building and surrounded by small stores selling clothes and sewing materials. There is no facility for the temporary of solid waste. Two gravel access roads run to the north and south parts of the wet market; the access roads are 5-6 meters wide. The distance from the main road to the wet market frontage is approximately 10-15 meters.

**Figure 2.1:** Phaxay District Wet Market, Lakhai Village, Xiengkhouang Province



6. The meat market building was constructed in 1995, and was further developed in 2008. There are several aspects of the building, and the equipment used, that need to be upgraded to improve meat hygiene, as well as the management of waste meat scrap and waste water. **Figure 2.2** shows the old wooden tables used by vendors, cardboard used as a “hygienic” covering on the tables, meat scraps on the rough surface concrete floor, and various items lying on the floor. The meat vendor tables are also in close proximity to other vendors selling clothes and groceries. Washing of the meat market’s concrete floor is limited due to the lack of access to a water supply.

**Figure 2.2:** Phaxay District Wet Market: Meat Section



7. Phaxay District Wet Market building has an aluminum zinc roof, a rough surface concrete floor, an open area with a drainage canal surrounding the building. There are no waste treatment facilities at the wet market and all waste from the meat section, and other parts of the wet market, flow into the village drainage canals and on to farming land growing rice. There is no drainage from the wet markets directly into the San river. There are no systematic procedures followed for solid waste such as plastic, card board, vegetable waste, and waste from meat. Physical and operational features of the wet market are summarized in **Table 2.1**.

**Table 2.1: Phaxay Wet Market: Summary of Current Physical and Operational Features**

Location	Latkhai Village, Phaxay District, Xiengkhouang Province
<b>Physical Features</b>	
Size and Layout	70m x 20m rectangular area, with concrete floor and columns; wooden rafters and aluminum-zinc roof
Numbers of Market stalls and tables <ul style="list-style-type: none"> <li>• Meat section</li> </ul>	2-3m x 1m wooden tables <ul style="list-style-type: none"> <li>• Variable; up to 1-2 tables</li> </ul>
Supporting infrastructure <ul style="list-style-type: none"> <li>• Water supply</li> <li>• Electricity</li> <li>• Effluent site drainage</li> </ul>	<ul style="list-style-type: none"> <li>• No water line connection to the market</li> <li>• No electricity connection to the market</li> <li>• Small open channels around market building carry wastewater and rain run-off to the village drainage system</li> </ul>
Solid waste disposal	Deposited in the open-air near wet market building
Toilets	Two -that are for general use of vendors and market customers – no clean water for hand washing Septic tank for the toilets is locally constructed and capacity unknown
Other information	Wet market is old, built in 1995 and was improved in 2008
<b>Operations</b>	
Types/amounts of Market Goods	Various meats (beef – 50-70kg/week; pork - 30-50kg/d; poultry - 20kg/d), fish (20kg/d), vegetables
Numbers of butchers and/or vendors for meat products	Beef and pork – 16 butchers - divided into 8 groups to better manage the use of available space. Each butcher is able to sell their meat products once per week, or approximately four times a month.
Market schedule	Mornings, 7 days per week
Daily Clean-up activities	No running water; cardboard table-covering replaced daily, meat-scrap placed in bins - when the waste quantity is sufficient to fill a truck, the waste is delivered by truck to the district's waste disposal-area.
Waste management <ul style="list-style-type: none"> <li>• Liquid</li> <li>• Solid</li> </ul>	<ul style="list-style-type: none"> <li>• There is little liquid waste because the market does not have a piped water supply</li> <li>• Solid waste material is placed in open-air near the market until removal to district waste site</li> </ul>

## 2.2 PROPOSED IMPROVEMENTS

8. Improvements for the Phaxay District Wet Market meat section Wet Market meat section feature stainless steel tables for the meat vendors, tiled floor surface, fans for better temperature and insect control, temporary of solid waste storage building, and a septic tank designed to meet the volume of waste water and effluent from the meat section and new toilets respectively. The waste water from the wet meat section will pass through the septic tank where it will remain until any solids settle out. The final stage of septic tank waste water treatment is filtering through different sized of aggregates where there is anerobic treatment of any harmful bacteria. The treated waste water is then discharged into the market drainage system<sup>1</sup>. There will be a sieve to collect any meat scraps in the waste water before the waste water flows into

<sup>1</sup> Further description of the septic tank design and operational features is provided in Annex A Figure 1.



the septic tank. These improvements are summarized in **Table 2.2**. The combined small-scale physical upgrades, meat hygiene training for meat vendors, and better monitoring of meat hygiene compliance will improve the hygiene of meat butchered and sold at the market.

The design for each wet market upgrading includes direct access to water from the village water supply and a water storage tank with a water treatment unit. The quality of the village water supply is unknown and it will be tested by the Project, especially for E-coli bacteria or Coliform bacteria *parameters*. If the tests show the water is contaminated the water storage tank that will be used by the wet meat market vendors will be treated.

**Table 2.2:** Improvements Planned for the Phaxay Wet Market Meat Section

1. Physical improvements include:

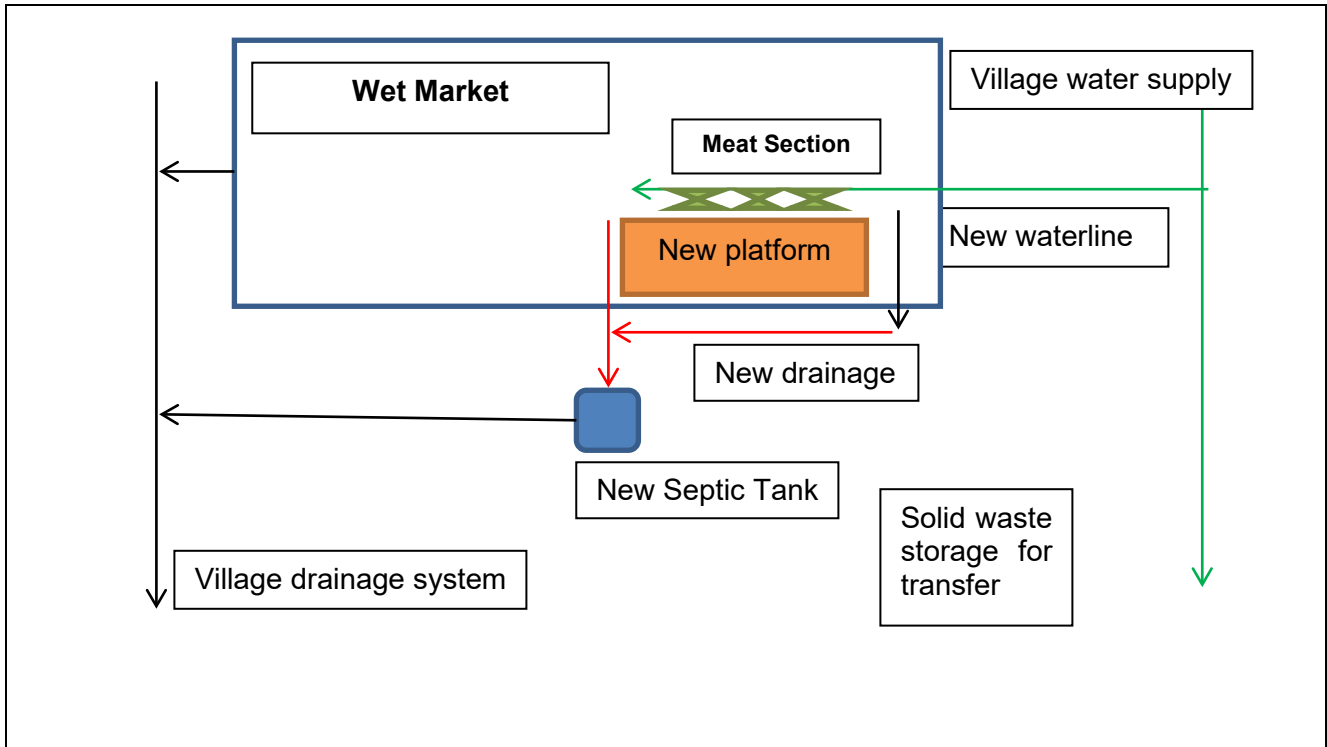
- Small-diameter piping and ten faucets to supply water to meat-vendor tables
- Hygienic surfaces such as tiling on the meat section floors and tables
- Six lights and small fans provided for meat-vendor area
- Extension, additional roof to protect meat section from direct sunshine during daytime
- Two sex-segregated toilets
- Upgraded small-volume drainage and septic-tank system of meat section to collect and treat wash-water from meat section before discharge to the main drainage-system of the market
- A tiled, reinforced-concrete platform raised about 20 cm high for the meat section
- A wall or fence with entrance gate around the meat section to keep out dogs
- Stainless steel meat- vending stalls installed on the new platform
- Provision three fire extinguishers at the meat section
- Provision of the solid waste storage building, including a concrete floor, zinc roof, and steel fences. This is for the temporary storage of all waste from the wet markets before its transfer to the district's waste disposal area
- Provision of UV Filter at the meat section's new water taps

2. Operational improvements include:

Training for butchers and retailers to improve meat hygiene practice, such as hygienic procedures to use during cleaning to minimize the risk of bacterial contamination, and good waste management practice to reduce offensive odors, flies and other insects. The Project will institute a Standard Operating Procedures for meat hygiene and environmental management. The wet meat market vendors, and the market operator, will be required to follow the Standard Operating Procedures. Monitoring of compliance will be by district agencies: DAFO, DONRE and the Department of Health. The Market Owner will be responsible to ensure that the Lao environmental regulations for the operation and maintenance of septic tanks are complied with. This includes regular maintenance and pumping. The Project will undertake regular monitoring once the wet market is operational.

9. The physical upgrades are expected to be installed over a short construction period, tentatively estimated to be less than two months. Layout of planned infrastructure improvements is shown in **Figure 2.3**. The timing of construction and installation activities and the nature of those activities have been discussed with market vendors. The market authorities have made arrangements for the market vendors to move an alternative site during the construction. The market vendors have agreed to this temporary move.

**Figure 2.4: Phaxay District Wet Market: Schematic Layout of Meat Section Proposed Improvements**



### 3 REGULATORY FRAME WORK

#### 3.1 GOVERNMENT OF LAO PDR

10. Government of Lao Ministerial Instruction (MI) No.5056/MONRE 2013 lists investment projects and activities for which an Initial Environmental Examination (IEE) or a full Environmental and Social Impact Assessment (ESIA) is required. Projects and activities listed in the MI are generally much larger in scale than the relatively small improvements proposed for the Phaxay Wet Market, and wet-market improvements are not specifically identified on the MI list of investment projects requiring an IEE or ESIA.

#### 3.2 ASIAN DEVELOPMENT BANK

11. The Asian Development Bank (ADB) Safeguard Policy Statement of 2009 categorizes environmental assessment requirements according to the likelihood that a project will have a significant adverse environmental impact. Category A projects are likely to have significant adverse impacts and require a full environmental impact assessment (EIA); Category B projects are likely to have an adverse impact less severe than Category A and require an IEE to determine whether or not an EIA is necessary; and Category C projects are likely to have minimal or no adverse impacts. The small scale and nature of improvements planned for the meat section of the Phaxay Wet Market and its environmental setting places the subproject in Category C. Environmental implications of the proposed improvements are described in **Annex B**. Although it is not necessary to prepare an EMP for Category C projects, environmental protection best-practice measures are presented in this EMP for the planned

small-scale improvements. It is an ADB requirement that there must be an Environmental Compliance Certificate (ECC) for the upgrading of each wet meat markets. If PONRE/DONRE agrees, or confirms, that no ECC is needed then the ADB still requires that there is an official confirmation letter from them. Either the ECC or official confirmation letter is to be shared with ADB. This must be before the wet meat market construction works commences.

#### 4 RESPONSIBILITIES AND AUTHORITIES

12. The Xiengkhouang PIU will coordinate the implementation of the market improvements and will liaise with the Phaxay District Committee to ensure that environmental protection measures are being applied. The District Committee will be responsible for overseeing the implementation of environmental protection measures during the construction and installation, and operational activities.

13. Stakeholder responsibilities related to environmental protection during the construction and installation, and operational activities associated with wet market improvements are summarized in **Table 4.1**.

**Table 4.1:** Environmental roles and responsibilities during wet market improvement activities

Stakeholder	Responsibilities
<b>Installation and Construction Activities</b>	
District Committee comprising: <ul style="list-style-type: none"> <li>• District Vice Governor</li> <li>• Deputy head of DOIC</li> <li>• Deputy head of DAFO</li> <li>• Deputy head of DONRE</li> <li>• Market Owner and/or Manager</li> </ul>	Oversee the construction and installation activities for compliance with the environmental provisions in this EMP Prepare environmental monitoring report to be included as one section of the Project's Quarterly Progress Report. The format of the environmental monitoring report is one section of the Project's Quarterly Project Progress Report as shown in Annex D an environmental check list is in Annex E Liaise with the Contractor Site-Supervisor and PAFO PIU Advise PIU and Contractor on environmental issues and concerns related to functioning of the market during construction and installation activities Issuance of Certification following environmental assessment (DONRE) Undertake site visits; provide corrective guidance if necessary
Contractor Site-Supervisor	Serve as environmental monitor as part of day-to-day supervision, ensure environmental protection measures are being applied; liaise regularly with the District Committee
<b>Operational Activities</b>	
District Committee comprising: <ul style="list-style-type: none"> <li>• District Vice Governor</li> <li>• Deputy head of DOIC</li> <li>• Deputy head of DAFO</li> <li>• Deputy head of DONRE</li> <li>• Market Owner and/or Manager</li> </ul>	Oversee operational activities to ensure compliance with the environmental provisions in this EMP Ensure environmental protection systems are properly maintained and functioning; liaise with the PAFO PIU Undertake site visits; provide corrective guidance if necessary

## **5 ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN**

### **5.1 CONSTRUCTION PHASE**

14. Environmental Best Management Practices (BMP) to be applied during the construction stage are outlined in **Table 5.1** (layout of planned improvements is shown in **Figure 2.3** and Layout of Phaxay District Wet market is shown as **Annex A**).

15. Details of measures that shall be carried out by the Contractor, including the contents of the Contractor EMP, will be finalized by the Loan Implementation Consultant (LIC) specialists in association with the Contractor. Principal construction activities associated with meat-section improvement will be placement of the 20cm high reinforced-concrete platform, water supply pipe, septic tank and drainage connections.

16. Before initiating work at the site, the contractor will consult the market owner and vendors on an acceptable work schedule given the nature and timing of activities that may periodically produce noise, dust, exhaust fumes or additional vehicle traffic. The contractor will be responsible for signage that informs the public of any dangers associated with the construction work. Ensuring the community is well informed of the upcoming construction is the responsibility of the market owner. If community members wish to raise complaints regarding adverse environmental effects, they would be able to submit their grievance to the NSCLP grievance redress mechanism (**Annex C**).

### **5.2 OPERATIONS PHASE**

17. Guidelines for the planned improvements to the effluent system of the market meat section are summarized in **Table 5.2**. The Provincial or District Agriculture and Forestry Office (PAFO or DAFO) or the District Committee will ensure that the market owner and meat-vendors and/or butchers will incorporate environmental protection guidelines and other EMP requirements into their business practices.

### **5.3 ENVIRONMENTAL MONITORING PROGRAM**

18. Environmental monitoring during construction will comprise daily supervision by the Contractor Site Supervisor to ensure that BMPs are being applied and address unforeseen difficulties related to environmental protection and social conflict. There will regular periodic inspection by the Environmental, Health and Safety (EHS) Officer assigned by the PIU and the DONRE or District Committee representative to ensure compliance with this EMP. The PIU EHS Officer will receive training from National Environmental Specialist on environmental monitoring and reporting; and, periodic inspection by the PIU representative and the DONRE or District Committee representative to ensure compliance with this EMP.

19. Periodic inspection by the PIU representative, and DONRE or District Committee representative also will be conducted when installed drainage and septic tank system improvement are operational, to ensure compliance with the provision of this EMP. There will regular periodic inspection by the Environmental, Health and Safety (EHS) Officer assigned by the PIU and the DONRE or District Committee representative to ensure compliance with this EMP. The PIU EHS Officer will receive training from National Environmental Specialist on environmental monitoring and reporting.

20. Periodic inspection by the PIU Environmental, Health and Safety Officer representative, and DONRE or District Committee representative also will be conducted when installed drainage and septic tank system improvements are operational, to ensure compliance with the provisions of this EMP. The LIC team (National Environmental Safeguard Specialist and National Infrastructure Engineer) will provide advice and training to PIU EHS Officer and Contractor in EMP/CEMP implementation and monitoring, as well as undertake periodic inspections. Inspection visits by the LIC National Environmental Safeguard Specialist will be made both during the construction period and post construction. At least one post construction visit will be made to inspect the management of the waste water, meat scraps, and garbage by the market authorities, and the wet market vendors.

21. Environmental reporting undertaken as part of the monitoring program for wet market improvements will be integrated with the broader NSLCP reporting system. Monthly and quarterly reporting requirements are shown in **Table 5.3**.

**Table 5.1: Phaxay Wet Market: Best Practices for Environmental Protection during Construction**

Environmental Concern	Management Measure
Site Safety hazards	
Construction site dangers to passers by	Place barriers and signage around construction areas to keep non-construction people outside.
Construction worker supervision	Allocation of responsibility for site safety to the Contractor's site supervisor staff, who will ensure that all reasonable safety measures are taken, such as use of safety clothing and equipment and hazard warning signs.
Worker safety measures during construction	All workers shall wear Personal Protection Equipment (boots, gloves, masks, eyes glasses during welding work). Workers who work at heights shall have appropriate scaffolding or elevated platforms and be instructed on proper safety procedures.
Construction waste management	Provision of facilities and procedures for collection, temporary on-site storage and disposal of all construction waste, including general construction wastes, hydrocarbon-based products, left-over concrete material and potentially hazardous materials such as solvents and adhesives.
Fuel, lubricant and hydraulic fluid storage and handling	If equipment requires use of fuel, lubricants or hydraulic fluids these materials will be stored offsite and brought to the site only when they are needed. When used on-site they will be handled carefully to avoid spillage.
Spill response procedures for toxic or hazardous material	All fluids to be used on site, including fuels, lubricants, hydraulic fluids, solvents and uncured concrete will be identified in advance and a plan prepared to identify measures to prevent and respond to spills of these items. If a spill occurs, the spill area will be immediately posted to keep people out and clean-up operations started.
Air Quality – dust and exhaust fumes	Wetting excavation sites and stockpiled material during dry and windy weather to reduce dust; and turning off engines and machinery when not in use rather than allowing engine idling when not in use, especially in the immediate vicinity of the market.
Noise and vibration	Type and timing of activities will be discussed with the market owner and vendors to identify sources of potentially disruptive noise or vibration and acceptable time windows for the relevant activities. Construction activities will be scheduled outside market hours whenever possible.
Site erosion and sediment control, release of silt	Avoid excavation works during periods of heavy rainfall, and cover excavated material to avoid erosion if heavy rainfall occurs.
Disruption of traffic	Contractors should plan construction operations in consultation with market users; if necessary, local commune or district authorities can arrange temporary trading sites while construction work takes place.

**Table 5.2:** Phaxay Wet Market: Environmental Protection Guidelines for Operation and Maintenance of Meat-Market Effluent-system Improvements

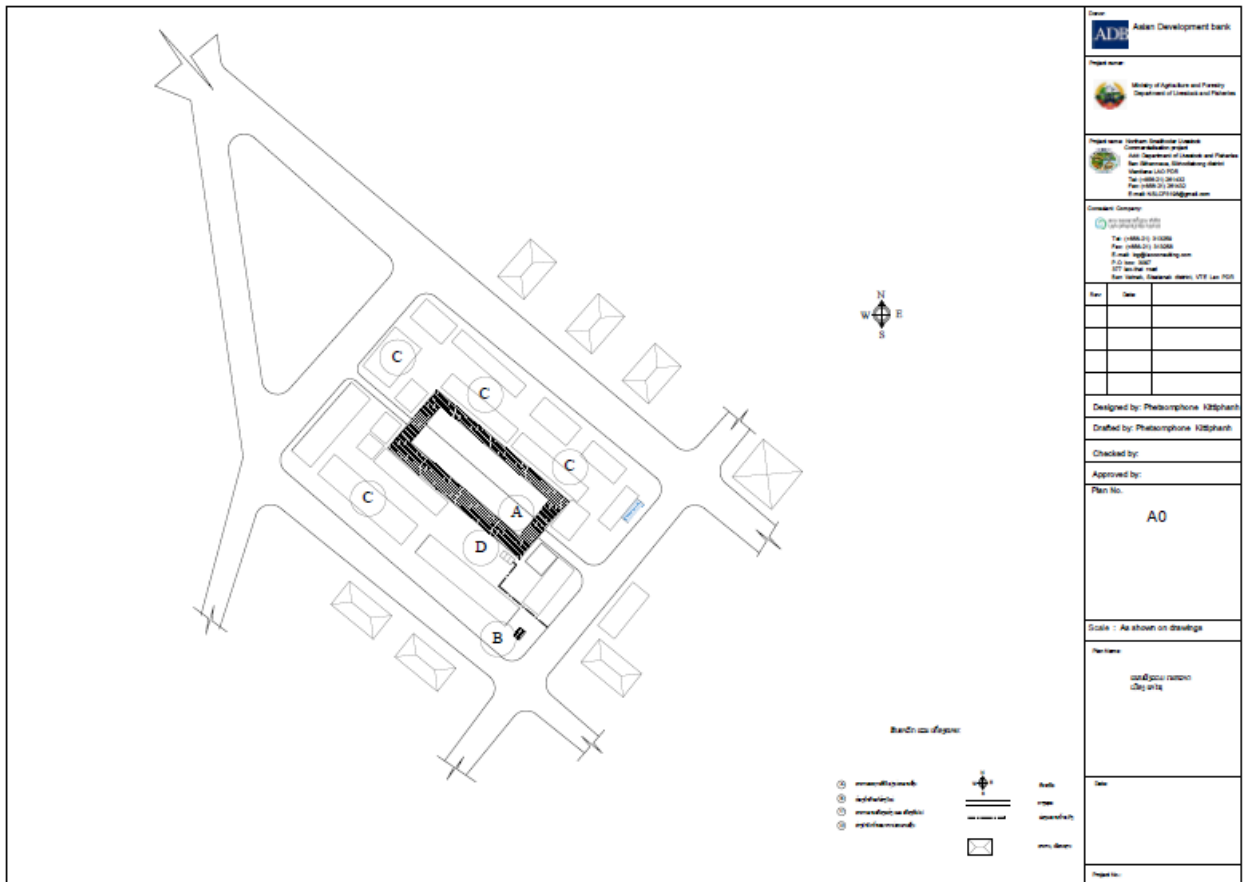
Environmental Concern	Management Measure
General	<p>Provide awareness and capacity-building activities for market operators and vendors in the operation and maintenance (O&amp;M) requirements to keep the drainage and effluent system free of obstructions and blockages. The market operator shall regularly clean and collect the solid wastes and place into the bins before it shall be disposed of at the district or local refuse area.</p> <p>Solid materials shall be collected, including bones, and carboard, shall be placed into separate bins then stored in the garage storage building before being disposed of in the district/local disposal area.</p> <p>The drainage system; traps and grating should be cleaned regularly to prevent blockages. Cleaning of traps will be done on a daily basis by the wet meat market vendors – these tasks will be defined as part of the Standard Operating Procedures.</p>
Toxic material	<p>Provide awareness and capacity-building activities for market vendors and butchers, and conspicuously post signs and notices, to prevent the unauthorized or inappropriate use of hazardous materials such as chlorine-based cleaning agents, hydrocarbon fuels and solvents. This includes cleaning chemicals which could interfere with the septic system and/or contribute to pollution in downstream areas. Wet meat market vendors will be provided with guidelines over the use of cleaning chemicals.</p>
Septic tank system	<p>Provide training and operational guidelines to the market owner on septic tanks O&amp;M to ensure their continuous operation, and on acceptable practices for the disposal of solid animal wastes.</p> <p>Regularly remove scraps of meat waste from solid waste traps in the inlet channel to the septic system;</p> <p>Regularly inspect the system for signs of leakage, overflow and excessive odor in order to undertake early remedial actions. Sludge is pumped out on a regular basis.</p> <p>These requirements all to be included in the Hygiene and Environmental Standard Operating Procedures.</p>
Overall Operations	<p>Environmental practice following the wet meat market upgrading will be guided by the Hygiene and Environmental Standard Operating Procedures prepared by the Project. The Standard Operating Procedures will be based upon the relevant Laos environmental and meat hygiene regulations. The Project will provide training in the application of the Standard Operating Procedures for the market owners and staff, as well as the wet meat market vendors.</p> <p>DONRE will be responsible for ensuring compliance with the environmental aspects of Standard Operating Procedures by the market owner, and also the meat market vendors.</p>

**Table 5.3: Khoun Wet Market: Environmental Reporting System**

<b>Project Phase</b>	<b>Type of Report</b>	<b>Frequency</b>	<b>Responsibility</b>	<b>Submitted to Whom</b>
Construction	Site Environmental Performance Report: indicating compliance with Site EMP and monitoring results	Monthly	Contractor/District Committee/LIC support	PIU/DIU
	EMP Compliance Report – Quarterly: indicating compliance with all EMPs and monitoring results	Quarterly	PIU/District Committee	NPMO
Operation	EMP Compliance Report – Operation: indicating compliance with investment EMP commitments during operation	Environmental monitoring and compliance reporting in the Project Quarterly Progress Report  Ongoing frequency to be determined based on review after 2 years	NPMO and/or Operating Company	ADB

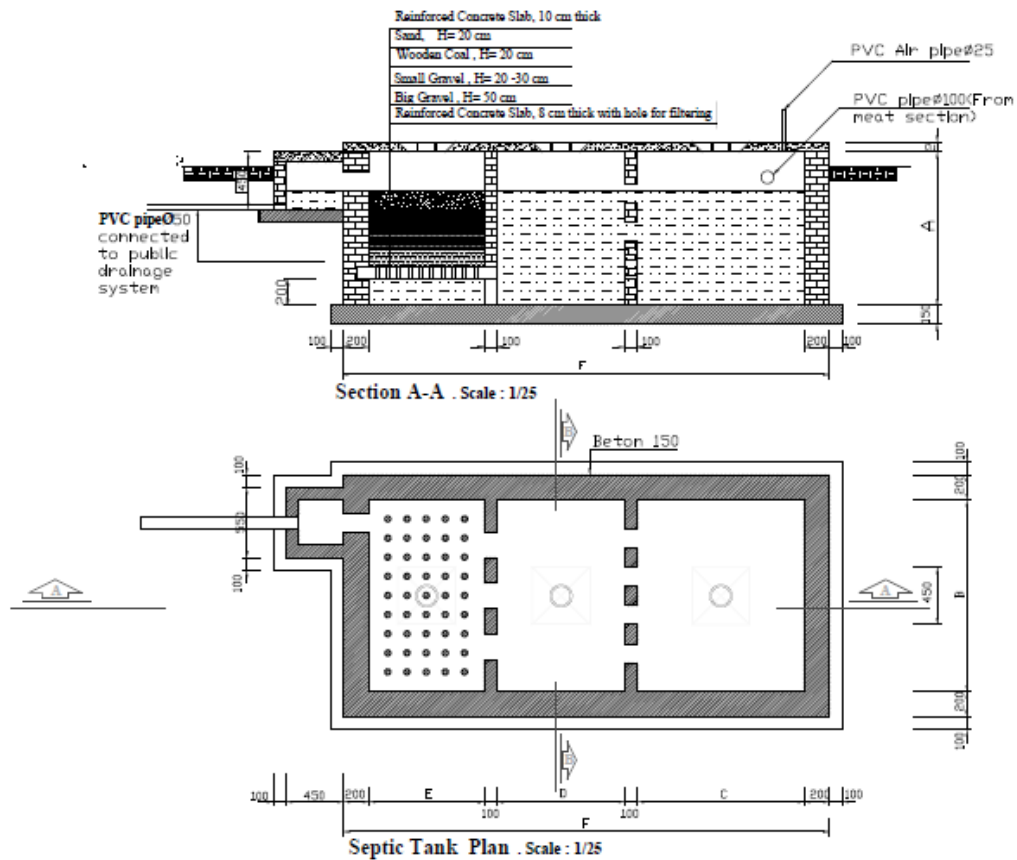


# Annex A: Phaxay District Wet Market Layout



<p><b>Legend:</b></p> <p><b>A.</b> The proposed improvement meat section is in this building</p> <p><b>B.</b> The proposed of the new toilets construction area</p>	<p><b>C.</b> Dry food and clothes selling section in this building</p> <p><b>D.</b> Proposed new septic tank to treat the wastewater from meat section</p>
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**Figure: A1** Design of Septic Tank



A septic tank is a cost-efficient method for the treatment of wastewater. Design of the septic tank for the wet market upgrading features three chambers (as shown in Figure A1 above). The first chamber receives the wastewater and over the holding period the solids in the wastewater settle to the bottom of the tank. After the solids have settled out the wastewater moves to the next chamber. Some further settling of any remaining solids occur in this second chamber. The wastewater will then move to the third chamber which is an anaerobic treatment system through fixed-bed filters. There are four fixed bed filters layers: (i) layer of the medium gravel; (ii) layer of the small gravel; (iii) the layer of charcoal; and (iv) a sand layer. Any harmful bacteria remaining in the wastewater are treated at this final filter stage. From the third filter chamber the treated waste water is discharged into the market drainage system.

Features that will ensure the successful operation of a septic tank are: (i) tank size has the capacity to handle the volume of waste water; (ii) well maintained and the sludge is pumped out regularly; (iii) hazardous wastes are not used as wet meat market cleaning agents; (iv) technical specifications for the quantity and size of aggregate filter layers are followed.

## **Annex B: Environmental Implications of Phaxay District Wet Market Improvements**

A field visit to identify environmental concerns related to the market improvements was undertaken on 7 January 2019; findings are summarized below.

### **The Environmental Setting**

The Phaxay Wet Market is situated near the center of Latkhai village (population 1,029) in a neighborhood comprising residences and small businesses. The main economic activities in the village are rice farming and small-scale trading.

There are no environmentally sensitive or historical areas located close to the wet market. The nearest religious site or temple is more than 500 m south-east of the wet market.

Latkhai village is bordered on all sides by agricultural land utilized mainly for rice farming. The land is mainly flat; rain water drains toward the north-east, the drainage waste water will be combined with the road's drainage canal and finally discharging to a nearby rice field. A small river, San River, is located to the south of the wet market but does not receive wastewater discharge from the wet market. The San River is a small tributary of Nam Niep River.

### **Negative Environmental Impacts from Proposed Market Improvements**

The potential for adverse environmental and social impacts is quite small given the small scale and types of proposed improvement activities. The investments are specifically intended to introduce improved sanitary infrastructure, more hygienic practices in the wet market, and improved waste management. Plans include facilities for managing liquid and solid waste.

Meat market vendors may need to temporarily move to a new location in the market during the construction of the meat section floor, electricity and water supply and drainage systems. During the preparatory and design stage prior to construction consultation and discussions will be held with those individuals on design details and work-scheduling to seek their opinions and agreement on work timing and new retail-spaces they can move to while work is underway.

The proposed improvement project activities are not anticipated to have a significant adverse impact on social and environmental conditions in or near the wet market. Proposed activities likely will have small-scale, localized and short-duration/temporary adverse effects on some retailers/butcher and other traders in the wet market (e.g., short-duration noise during the construction period); these potential effects can be avoided or minimized through adherence to environmental-protection best-practices.

### **Positive Environmental Impacts from Proposed Market Improvements**

The Phaxay District Wet Market is a traditional wet-market, and a primary benefit of the proposed meat section improvements will be the sales of more hygienic meat and lowered public health risk. Upgrades to the meat section will improve biosafety and food standards, providing an important first step in the food preparation chain before eventual meat consumption and thereby contributing to improved health and living standards of local people.

Women retailers will have improved work conditions, including clean water, and accessible and regularly cleaned toilets (men and women), waste disposal, drainage and hygienic surfaces where meat is handled.

Wastewater from washing meat in the meat-section will be properly collected in a new drainage system from the meat retail area, and will pass through a septic tank before discharge to the main effluent conduit in the market which in turn discharges to the public drainage. This will improve the quality of the wet market wastewater by separate treatment of biodegradable waste that is present in the wastewater from the meat section.

Food safety and environmental hygienic training that will be provided to butchers/meat-retailers in the wet market will help the butchers/retailers to improve the overall hygienic and environmental condition of the market. For example: (i) bacterial contamination of meat will be reduced or eliminated through application of proper cleaning following hygienic procedures; and, (ii) good waste management will minimize attraction of flies and other insects in the wet market.

Overall, the long-term positive impacts from the market facilities upgrades, including improved toilet facilities, a more hygienic meat vending area and safer meat, and better liquid waste management facilities are expected to heavily outweigh any temporary and short-term negative impacts during the facilities construction and installation period.

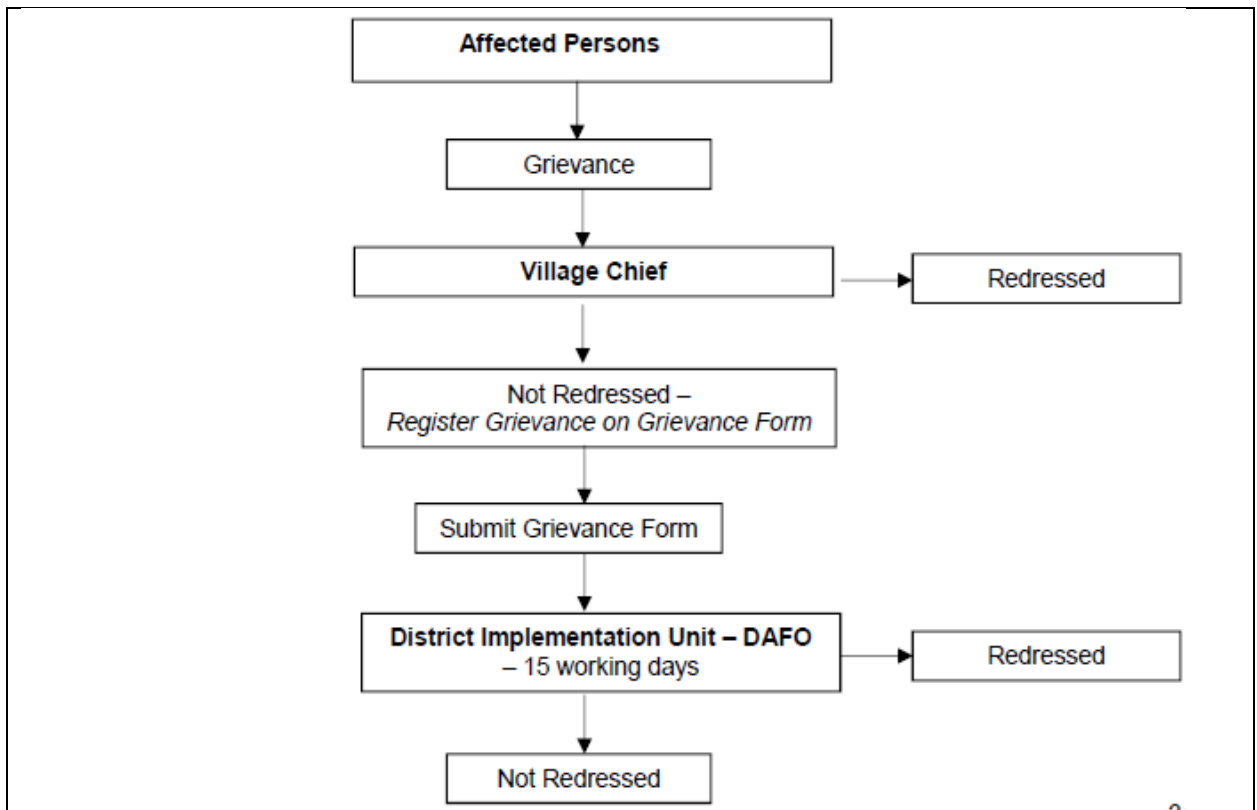
## Annex C: Grievance Redress Mechanism

A grievance redress mechanism (GRM) is in place for the NSLCP (NSLCP EARF 2014) to ensure that any complaint raised by the community related to adverse environmental impacts will be addressed in a timely manner. Elements of the GRM that would apply to the proposed wet market improvements are shown in **Figure C1**.

Grievances/complaints regarding environmental issues can be made in relation to the design, construction, operation and maintenance of the subproject. The procedures for filing grievances and complaints and the redress mechanism are described below.

- Stage 1: Grievances or complaints can be made by an individual household or as a community according to the type of complaint. First the complainant must meet the Village Chief to explain the problem. The village head will then review the complaint and either redress it at village level or refer to a higher authority if a solution cannot be found. The Village Chief will provide and assist to fill in a Project Complaint Register Form by clearly describing the cause of the problem and possible/preferable settlement of the problem. The results of the settlement will be put in writing and signed by both parties.
- Stage 2: After completing the Project Complaint Register Form one copy will be filed at Village Chief Office, one copy for the individual complainant or representative of the complainants and each will be submitted to the DIU or District Committee. Within 15 working days after receiving the official complaint, the Village Chief and DIU or District Committee and including the related field specialists, will visit the complainant to find out the cause of problems and agree on the solution. This solution will be signed by all concerned parties.
- Stage 3: In case the complainant is dissatisfied with the DIU or District Committee in settling the complaint or grievance, the Official Complaint will be submitted to the PIU, PAFO and DAFO Task Force to settle the complaint within 10 working days. This solution will be signed by all concerned parties.

**Figure C1:** Grievance Redress Mechanism



**Annex D: EMP Monitoring Report Format**

# Safeguard Monitoring Report

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# Quarterly Report

xxx {month} 20xx

Lao PDR: xxx {Project name}, xxx {sub-project name, if report covers only one sub-project}

Prepared by the Project Management Unit of {complete name of Implementing Agency}  
for the {complete name of the borrower} and the Asian Development Bank.

## **NOTE**

- (i) In this report, "\$" refers to US dollars.

This safeguards monitoring report is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

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



# 1. EXECUTIVE SUMMARY

1. *{Read and delete: Provide short summary of the following items:*

2.

- **Summary of EMP/RP Implementation**
- **Description of monitoring activities** carried out (e.g. field visits, environment effect monitoring, survey questionnaire, public consultation meetings, focus group discussions, etc)
- **Key issues**, any **corrective actions** already taken, and any **grievances**
- Key activities planned in the next reporting period
- Recommendations

Use the paragraph numbering format provided below throughout the report}

1. xxx
2. xxx

# 2. PROJECT OVERVIEW, GENERAL SAFEGUARD MATTERS

## 2.1 PROJECT OVERVIEW

*{Read and delete: Briefly describe project objectives, scope and components – can be taken from PAM or other relevant document}*

3. xxx
4. xxx

## 2.2 PROJECT PROGRESS

*{Read and delete: Using most recent project progress report, describe status of project implementation, including full list of contracts, status of contract awarding and implementation, name of contractor, Engineer, Project Supervision Consultant.}*

5. xxx
6. xxx

**Table 1: Project Overview, Snapshot of Project Progress**

<b>Project Number and Title:</b>		
<b>Safeguard Category</b>	Environment	
	Indigenous Peoples	
	Involuntary Resettlement	
<b>Reporting period:</b>		
<b>Last report date:</b>		
<b>Key sub-project activities since last report:</b>	<i>{Read and delete: This section should include, among others, the following:}</i> <ul style="list-style-type: none"> <li>• Contract awarding</li> <li>• Progress of Work (% physical completion)</li> <li>• Status of Safeguard Approvals/Permits/Contents</li> </ul>	
<b>Report prepared by:</b>		

## 2.3 SAFEGUARD PLANS IMPLEMENTATION ARRANGEMENT

*{Read and delete: Describe institutional arrangements and responsibilities for EMP implementation, internal and external monitoring, and reporting, defining roles of, Engineer, Implementation Consultant, Contractors (Table format as needed)}*

7. xxx

8. xxx

## 2.4 UPDATED EMPs, INCORPORATION OF SAFEGUARDS REQUIREMENTS INTO PROJECT CONTRACTUAL ARRANGEMENT

*{Read and delete: Define manner by which EMP requirements are incorporated into bidding documents, contracts.*

*Indicate when updated EMPs was submitted for approval to ADB (Table format appropriate).}*

9. xxx

10. xxx

## 3. ENVIRONMENTAL PERFORMANCE MONITORING

*{Read and delete: Summarize main mitigation/protection measures implemented in the reporting period (narrative section). Structure in accordance to phases (detailed design, construction preparation, construction, and operation).}*

11. xxx

12. xxx

*{Read and delete: Include EMP table or updated EMP table if applicable. Assess compliance of environmental management activities with the original or updated EMP. For that purpose, include additional columns entitled "Compliance Status", "Comment or Reasons for Non-Compliance", and "Issues for Further Action". Example is provided below.}*

**Table 2: Compliance with EMP Requirements (Environmental Performance)**

<b>EMP Requirements</b>	<b>Compliance Status (Yes, No, Partial)</b>	<b>Comment or Reasons for Non-Compliance</b>	<b>Issues for Further Action</b>
Use environmental impact as main heading and EMP as listing (see example below)	Use EMP list as basis for rating/evaluating compliance (see example below)		

Rise of employment opportunities:	<ul style="list-style-type: none"> <li>Field inspections and interviews with communities - DONE</li> <li>Note each complaint case in the field – 3 COMPLAINTS RECEIVED</li> <li>Set up grievance centre and report as part of monitoring action plan – NOT DONE</li> </ul>		
<ul style="list-style-type: none"> <li>Job openings of the project should give priority to local communities.</li> <li>Recruitment of local laborers should be stipulated in the contract for construction</li> </ul>			

**Table 3: Issues for Further Action**

Issue	Required Action	Responsibility and Timing	Resolution
<b>Old Issues from Previous Reports</b>			
List of EMP measures or activities not completed (last column of previous table)			
<b>New Issues from This Report</b>			

**Table 4: Health and Safety Issues**

Issue	Required Action	Responsibility and Timing	Resolution
<b>Old Issues from Previous Reports</b>			
<b>New Issues from This Report</b>			

### 3.3 ENVIRONMENT EFFECT MONITORING

13. **Monitoring plan.** xxx *{Read and delete: Present the environment effect monitoring plan as defined in the EMP or the updated monitoring plan. Refer to Table 4. Describe monitoring responsibilities}*

14. **Monitoring activities in the reporting period.** Xxx *{Read and delete: Describe the environment effect monitoring activities in the reporting period, including number of monitoring campaigns, number of samples, etc. Confirm compliance with the monitoring plan, or justify any deviation from the plan}*

**Table 4: Environment Effect Monitoring Results in the Reporting Period**

*{Read and delete: Present monitoring result in a Table (see example below, adjust as needed). Any non-compliance should be highlighted for attention and follow-up.}*

Location	Parameter	Date	Monitoring value	Relevant government standard, standard value

15. **Assessment.** Xxx *{Read and delete: Compare monitoring results with baseline conditions(if baseline data is available) and relevant government standards in qualitative terms. Additional explanatory comments should be provided as necessary. Possible reasons for non-compliance should be identified.}*

## 4. INVOLUNTARY RESETTLEMENT PERFORMANCE MONITORING

*The involuntary resettlement categorization of the project is Category C. The project scope is maintenance existing roads within the existing alignments. The project will neither entail any land acquisition nor strict access to land resulting to physical or economic displacement of people.*

## 5. PUBLIC CONSULTATION, INFORMATION DISCLOSURE, CAPABILITY BUILDING

*{Read and delete: Describe public consultation activities during the reporting period. Confirm compliance with consultation plan defined in the IEE/EMP, or justify deviation from these plans. Present planned consultation activities in next reporting period. Use Tables as appropriate.}*

- Field Visits (sites visited, dates, persons met)
- Public Consultations and meetings (Date; time; location; agenda; number of participants disaggregated by sex and ethnic group, not including project staff; Issues raised by participants and how these were addressed by the project team)
- Training (Nature of training, number of participants disaggregated by gender and ethnicity, date, location, etc.)
- Press/Media Releases
- Material development/production (e.g., brochure, leaflet, posters)
- Information disclosure

## 6. GRIEVANCE REDRESS MECHANISM

*{Read and delete: Describe mechanisms established to address and redress public complaints and grievances related to social and environment safeguards. Summarize grievances received, if any, and measures implemented to redress them.}*

- Number of new grievances, if any, since last monitoring period: \_\_\_\_\_
- Number of grievances resolved: \_\_\_\_\_
- Number of outstanding grievances: \_\_\_\_\_

3.

Type of Grievance	Details (Date, person, address, contact details, etc.)	Required Action, Responsibility and Timing	Resolution
<b>Old Issues from Previous Reports</b>			
<b>New Issues from This Report</b>			

## 7. CONCLUSION

*{Read and delete: Highlight important results from the implementation of EMP monitoring; recommendations to improve EMP and management, implementation, and monitoring; key activities planned in next reporting period}.*

16. xxx

17. xxx

## **8. ATTACHMENTS**

- Consents / permits
- Inspection checklists
- Photographs
- Other

## Annex E: Monitoring Checklist

### CHECKLIST 1      General of Meat Section

Project Site:	
Observer:	
<b>Frequency:</b> Check weekly during preparation of meat section, then weekly or in response to complaint.	
Date:	Time:
Location:	
Weather Condition:	

Checklist Question	Yes	No	Additional Data needs
Is the meat section located in a protected area, next to a community water source or any other ecologically or otherwise sensitive area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment on the adverse impacts on the environment:			
Is the meat section being properly maintained?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, list what is not being done properly:			

--	--	--	--

Is the wastewater being disposed of properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	--------------------------

If no, comment on how it is being disposed and what are the impacts:  If no, comment on. Have septic tanks been installed? Are they working correctly, that is not overflowing, or emitting smell?
--

Is the solid waste being disposed off properly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	--------------------------

If no, comment on how it is being disposed and the impacts of such disposal:
--

Is attention being paid to "Good housekeeping"?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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If no, comment on what is not being done:
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Checklist Question	Yes	No	Additional Data needs
Are occupational health and hygiene precautions being taken?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If no, comment on where they are being neglected:

Does the community have any issues with the meat section?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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If yes, what are the issues?

Any additional comments:

### CHECKLIST 1.1: Air Pollution

Checklist Question			
1. What is the nature of air pollution?			
a. Dust	<input type="checkbox"/>		
b. Generator	<input type="checkbox"/>		
c. Vehicular emission	<input type="checkbox"/>		
d. Noise	<input type="checkbox"/>		
Checklist Question	Yes	No	Additional Data needs
2. Is the problem significant enough to warrant attention?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. What is/are the measures taken?			
a. Periodic water sprinkling on road surface			<input type="checkbox"/>
b. Vehicle tire washing facilities			<input type="checkbox"/>
c. Speed limit enforced on project vehicles			<input type="checkbox"/>
d. Vehicles speeding checked by posting signs on roads, and awareness raising of staff and local communities			<input type="checkbox"/>
e. Vehicles regularly maintained			<input type="checkbox"/>
f. Equipment regularly maintained			<input type="checkbox"/>
g. Avoid undertaking construction activities closer to communities at night			<input type="checkbox"/>
4. Is air pollution creating problems for the surrounding communities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Is the impact temporary?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Is the community satisfied with the measures taken by the contractor to protect water bodies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Any additional comments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.			
9.			
10.			

Inspector's name and signature:

## CHECKLIST 1.2: Water Pollution

Checklist Question			
What is the nature of water contamination?			
1.1 Surface Water (stream, pond etc.)			
disposal of cut spoil into water body or on slope leading to water body			<input type="checkbox"/>
discharge of wastewater from camp into fresh water body			<input type="checkbox"/>
road run-off into water body			<input type="checkbox"/>
discharge of used oil, fuel, grease, etc. into water body			<input type="checkbox"/>
1.2 Groundwater			
leakage of oil, fuel, wells, etc. on land resulting in			<input type="checkbox"/>
contamination of ground water and wells			<input type="checkbox"/>
any other reason			
Checklist Question	Yes	No	Additional Data needs
Is the impact significant enough to warrant mitigatory measures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, provide necessary details:			
Is the impact long term?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, comment:			

Can it be ratified by mitigatory measures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, what type of mitigatory measures should be taken?			
Did community bring the problem to the notice of authorities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has action been taken to counter the problem? Is it effective?			
Additional comments:			

**CHECKLIST 1.3: Land Contaminations**

Checklist Question	
What are the impacts of project activities on land?	
run-off of oil, grease and fuel contaminating land	<input type="checkbox"/>
fuel oil / used oil / grease spill on land in equipment yards / camps sites	<input type="checkbox"/>
indiscriminate discharge of waste water on land	<input type="checkbox"/>
indiscriminate disposal of solid waste	<input type="checkbox"/>
any other project activities resulting in land contamination	<input type="checkbox"/>

Checklist Question	Yes	No	Additional Data needs
Is the impact significant enough to warrant mitigatory measures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, provide necessary details:			
Is the impact permanent?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If permanent, could it have been avoided by taking appropriate mitigatory measures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, what type of mitigatory measures should have been taken?			
Is the impact temporary?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If yes, when and how could it be corrected?

### CHECKLIST 1.4: Agriculture land

Checklist Question	Yes	No	Additional Data needs
Is the community satisfied with the measures taken by the contractor to protect agricultural activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, how and with what measures can it be improved?			
Is the local administration satisfied with the measures taken by the contractor to protect agricultural activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If no, what is being suggested by the local administration?			

--	--	--	--

Did the community allow the use of their land for borrow pit or any other purpose?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	--------------------------

If yes, what was the motivation behind it?
--

If no, did the contractor take permission from the land owner and local administration for the specific use?
--

Any additional comments:
--------------------------

**CHECKLIST 1.5: Noise Pollution**

Checklist Question			
What is the nature of noise pollution?			
vehicles on road	<input type="checkbox"/>		
Generators, construction plant	<input type="checkbox"/>		
Construction vehicles	<input type="checkbox"/>		
vibration from equipment	<input type="checkbox"/>		
vibration from road vehicles	<input type="checkbox"/>		
vibration from explosive blasting	<input type="checkbox"/>		
Checklist Question	Yes	No	Additional Data needs
Is the problem significant enough to warrant attention?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, did the contractor / consultant take appropriate measure to mitigate the problem?			
What is / are the measures taken?			
<input type="checkbox"/>			



vehicles regularly maintained and silencers checked	<input type="checkbox"/>		
speed limit enforced on project vehicles	<input type="checkbox"/>		
construction equipment maintained and silenced	<input type="checkbox"/>		
compressors and generators operated with silencing panels closed	<input type="checkbox"/>		
awareness raising of staff over causing nuisance to local communities	<input type="checkbox"/>		
blasting at fixed times and communities notified	<input type="checkbox"/>		
Avoid undertaking construction activities and blasting close to communities at night	<input type="checkbox"/>		
Is noise pollution creating problems (health, aesthetic & nuisance) for the surrounding communities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, what type of problems?			

Inspector's name and signature: