

Laos People's Democratic Republic

**Mainstreaming Disaster and Climate Risk Management  
into Investment Decision in Lao PDR**

**Environmental Management Framework  
for Small Scale Civil Works**

**Ministry of Planning and Investment**

January 18 2012

## **Environmental Management Framework for Small Scale Civil Works**

### **Project: Mainstreaming Disaster and Climate Risk Management into Investment Decisions**

#### **1.1. Background**

The proposed program aims to strengthen the institutional authority and implementation capacity of the Government of Lao PDR (GoL) at the national and sub-national levels to mainstream disaster risk management and climate change adaptation into public infrastructure investments, thereby potentially decreasing the vulnerability of the population and national economy to climate change and natural hazards. The project will finance some minor civil works under the pilot activities of the Component 4 which will focus on repairing or strengthening existing roads and irrigation schemes damaged by the previous natural disasters (Typhoon Haima and Knock-Ten). It is anticipated that the piloted activities will not result in any major adverse environmental and social impacts. The pilot activities are likely to enhance positive environmental impacts through taking into consideration of climate variability and extreme events into the engineering designs in order to mitigate the disaster and other associated environmental risks such as landslides and poor water quality due to high sedimentation settlement.

#### **1.2. Project Development Objective and Project Components**

The objective of the project is to strengthen the institutional authority and implementation capacity of the Government of Lao PDR at national and sub-national levels to mainstreaming disaster risk management and climate change adaptation into public infrastructure investments, thereby potentially decreasing the vulnerability of the population and national economy to climate change and natural hazards. Specifically, the Project has the following components.

Component 1: Risk Assessment. This component will focus on the identification of risks and integration of risk scenarios in the development planning and policies through the risk assessments in the transport, irrigation, and urban planning sectors, and the provision of training on risk assessments.

Component 2: Mainstreaming Disaster and Climate Risk Management into Investments. This component will assist the development of guidelines and strategies to mainstream disaster risk management and climate change adaptation into the planning cycle and budgeting processes, through (i) integration of DRM into existing strategies for Transport, Irrigation, and Urban Planning; (ii) review and revision of building codes; and (iii) dissemination of technical standard specification, design and construction guidelines on safe construction/disaster resilience in the Transport, Irrigation, and Urban Planning sectors.

Component 3: Institutional Strengthening and Capacity Building. This component will build capacity of the technical staff of the MPI, MPWT and MAF to undertake risk assessments, interpret, apply and update relevant data through on the job training and workshops.

Component 4: Pilot Sub-Projects in two disaster-prone provinces. This component will demonstrate the disaster-resilient construction practices developed under Component 2 in two disaster-prone provinces to be identified through the risk assessments of component 1.

Component 5: Monitoring and Evaluation. This component will conduct the monitoring and evaluation of project activities and results indicators will be undertaken on a regular basis.

Component 6: Project Management.

### **III. Environmental Policies and Regulations**

#### **Government's Regulations related to EIA**

Key government regulations related to EIA are (a) the environmental impacts assessment (EIA) decree number 112 (2010); (b) the Decree on the Compensation and Resettlement of People Affected by Development Projects (2005) and the Regulations for Implementing Decree 192/PM on Compensation and Resettlement of People Affected by Development Projects (2005); and (c) Updated Regulations 2860/MAF dated June 11, 2010 regarding to the control of pesticides in Lao PDR.

The decree 112 was promulgated pursuant to the Environmental Protection Law (1999, 2003) and the Decision of Minister to Prime Minister's Office, President of the Water Resources and Environment Administration (WREA) in 2009. The main objective of the decree is to lay down principles and rules, and adopt measures on establishment, functions, management and monitoring (of the concerned agencies) in environmental impact assessment and ensures that all investment projects (both public and private) operating in Lao PDR which create or may create adverse environment and social impact, are designed with appropriate environmental and social impact prevention and mitigation measures to effectively prevent, minimize and mitigate adverse environmental and social impacts. The decree 112 defines two different groups of projects based on the size and type of the investment as follows: Group 1 refers to the small investment projects with small environmental and social impact which will be subjected to preparation and approval of an Initial Environmental Examination (IEE) and Group 2 refers to the investment projects that would create significant environmental and social impacts and are subject to preparation and approval of an Environmental Impact Assessment (EIA). The decree also outlines specific provision regarding the procedures and process including the requirements for public consultation and information disclosure and monitoring and evaluation

#### **World Bank Environmental Assessment Policy (OP. 4.01)**

The World Bank has categorized the project as a '*Category B*' and the *Environmental Assessment (OP 4.01)* is triggered. Given the nature and small scale of the proposed civil works under the project, a formal environmental assessment report was not considered necessary. However, the civil works are likely to cause some concerns during construction which will require careful construction planning and management. Therefore, for the purpose of enhancing environment friendly measures and mitigating any adverse impacts caused by the construction activities, the EMF/EMP *Guidelines* for small civil works funded under this project have been prepared and shall be implemented by the concerned implementing agencies (IAs) namely MPWT, MAF and MPI.

The Physical Cultural Resources (PCR) policy OP 4.11 on is not applied since the civil works that will be supported under the project will be within the existing alignments and no impact on existing physical and cultural resources are anticipated. However the project will ensure that a "PCR chance find" clause will be incorporated in the EMF/EMP guidelines and included in the bidding and contract of all sub-projects (see the Annex).

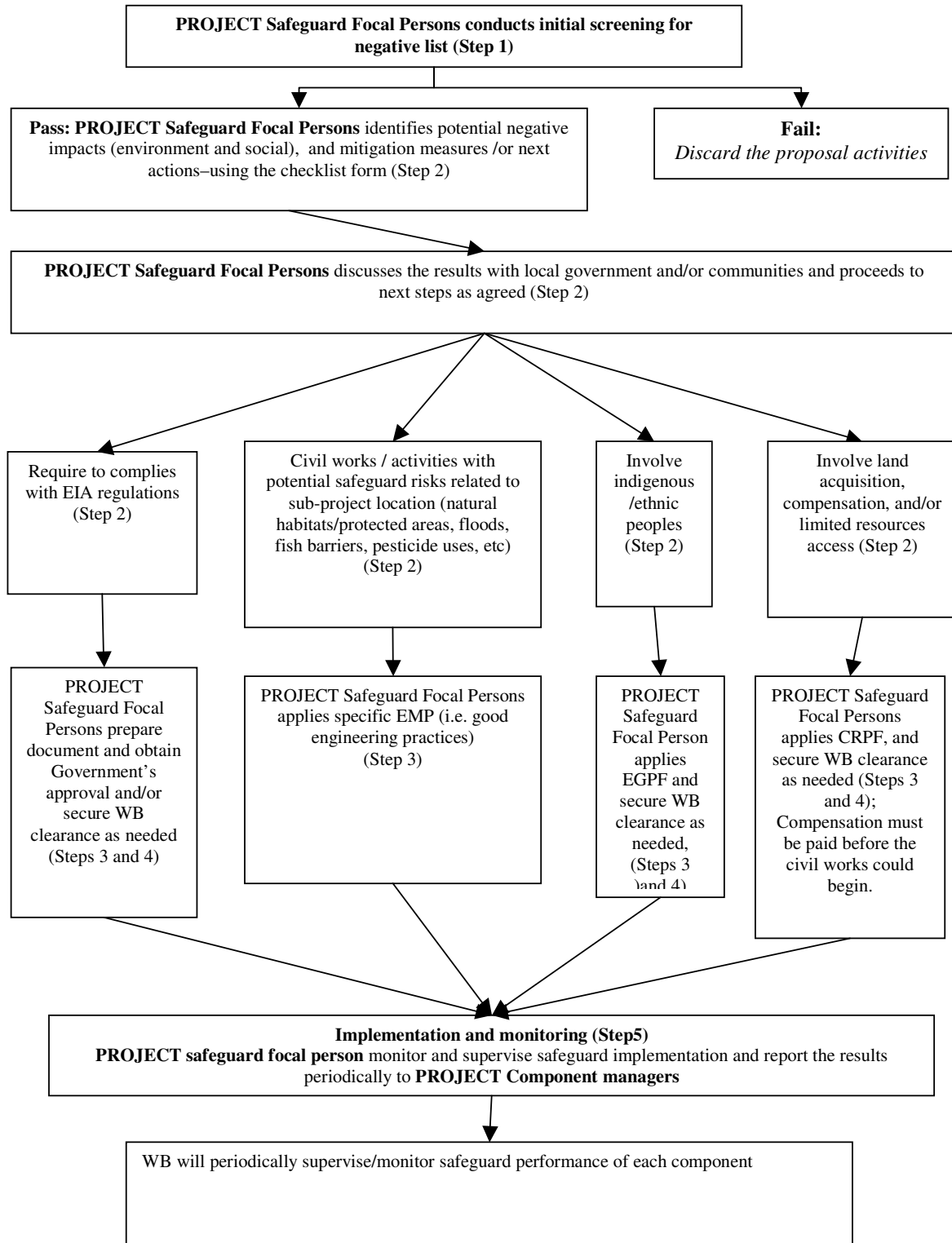
## **Environmental Management Framework/EMP Guidelines for Small Scale Civil Works**

The Framework will be applied to all proposed investments and activities financed under the project. To facilitate effective implementation, the below outlines the five main steps for the potential environmental and social impact screening and approval process.

**Step 1: Initial Safeguard Screening.** The project will apply the ‘negative list’ with a number of non-eligible activities to avoid adverse social and environmental impacts which cannot be adequately mitigated or are not eligible for WB financing. The “negative list” provided in *Annex 1*, will be considered as the first safeguard screening for all proposed project activities. If an IEE is required based on the screening conclusion, the subproject owner will carry out a study in line with the GoL regulation and inform the Bank. The IEE report and government approval will be send to the Bank for information. The Bank may require additional mitigation measures as needed to ensure full compliance with WB safeguard policies.

- **Step 2: Technical Safeguard Screening and Identification of Mitigation Measures.** For activities which are not on the ‘negative list’, a technical screening process will be applied to identify possible social and environmental safeguard issues and the required mitigation measures. A safeguard screening form developed for the project (*Annex 3*) will be applied however some modification can be made to facilitate effective application of the screening approach. Priority issues to be considered during the screening include:
- **Step 3: Preparation of Safeguard Documents.** During the technical and safeguard screening the PROJECT Safeguard Focal persons will identify the safeguard issues to be addressed and documents to be prepared. Subsequently, the staff will discuss with the respective agencies on the logistical arrangements for incorporation of the identified safeguard issues and document preparation. The IEE preparation will be in line with the Government EIA Decree and the World Bank Environmental Assessment Policy.
- **Step 4: Securing Formal Approvals and Clearances.** Finally, upon the satisfactory preparation of the required documents and incorporation the safeguard recommendations into the proposed activities, the project staff will ensure that all formal approvals and clearances are obtained by the responsible agencies or local governments and/or WB.
- **Step 5: Implementation and monitoring.** After all WB clearance and/or Government approval have been obtained, the subproject activities could be implemented. The PROJECT Safeguard focal person of each component will be responsible for periodic monitoring of safeguard performance and the results (and/or key issues if any) will be reported periodically to the component manager and/or WB safeguard specialist. The monitoring results must be properly kept in the project safeguard file and the results are included in the project progress report.

It should be noted, however, that these Guidelines are meant to be a ‘dynamic’ document, i.e., it is expected that they will be reviewed and modified as required, ideally during each Annual Review of Project Implementation, to ensure that they are continually improved and continue to maintain relevance.



## **Institutional and monitoring arrangements to be revised by the IAs**

The pilot civil work activities will be implemented by the Department of Roads (DoR) under the Ministry of Public Works and Transport (MPWT) and the Department of Irrigation of the Ministry of Agriculture and Forestry (MAF). Both ministries have stringent environmental and social safeguards policies in place and are familiar with the World Bank's safeguards policy requirements pertaining the road and irrigation works due to their long engagement in implementing the World Bank's financed infrastructure related projects

For road infrastructure and housing related civil works, The agency responsible for social and environment management is the TED at the level central, and the environment and social Unit (ESU) of DPWTs at the provincial level and environment and social office (ESO) at district level. The internal monitoring Team compose ESD and TED; for the external monitoring they are ESD, TED, DPWT and representative of MoNRE. The activities consist of monitoring of overall compliance with EMP and assessing the effectiveness of environment mitigation and management measures.

For irrigation related civil works, although MAF has familiarized with the World Bank's safeguards instruments, since no environmental unit is in place, capacity building on environmental and social safeguards monitoring and evaluation is still needed for the DoI and its safeguard focal person.

## **VI. Capacity-Building and Monitoring of Safeguard Frameworks Implementation**

In view of the need for a common understanding and application of environmental and social safeguard requirements and procedures that meet with the Bank's and Lao government requirements, the implementing agencies (MWPT, MAF, and MPI), with the assistance of MoNRE and the supervision Consultants will organize environmental and social safeguard training programs to improve the understanding as well as the monitoring and reporting performance of the safeguard focal points.

This annex provides a list of prohibited item and/or activities that cannot be financed by the PROJECT (ineligible or the “Negative List”). To avoid adverse impacts on the environment and people, the following activities are explicitly excluded from PROJECT:

- (a) Relocation and/or demolition of any permanent houses or business;
- (b) Land acquisition that affect more than 200 persons or 20 households;
- (c) Likely creation of adverse impacts on ethnic groups within the village and/or in neighboring villages or unacceptable to ethnic groups living in an ethnic homogenous village or a village of mixed ethnic composition;
- (d) Resources access restriction that could not be mitigated and will result in adverse impacts on the livelihoods of ethnic groups and disadvantage peoples;
- (e) Damage or loss to cultural property, including sites having archeological (prehistoric), paleontological, historical, religious, cultural and unique natural values;
- (f) New roads, road rehabilitation, road surfacing, or track upgrading of any kind inside natural habitats and existing or proposed protected areas;
- (g) Labor and working conditions involving harmful, exploitative, involuntary or compulsory forms of labor, forced labor<sup>1</sup>, child labor<sup>2</sup> or significant occupational health and safety issues;
- (h) Trade in any products with businesses engaged in exploitative environmental or social behaviour; and
- (i) Subprojects that require full EIA will not be funded.

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<sup>1</sup> Forced labor means all work or service, not voluntarily performed, that is extracted from an individual under threat of force or penalty.

<sup>2</sup> Harmful child labor means the employment of children that is economically exploitive, or is likely to be hazardous to, or to interfere with, the child’s education, or to be harmful to the child’s health, or physical, mental, spiritual, moral, or social development.

This annex provides a sample template for the environmental and social safeguard screening and monitoring forms.

**A2.1 Safeguard screening form**

Proposed Activity: .....

Brief Description: .....

.....

Location: .....

Filled out by: .....

Organization: .....

Date: .....

Attachments: .....

Prepared with the following representative from Local government and Community Representatives:

Remarks:

General Instructions:

- This checklist is to be completed to support the verification of a PROJECT supported grant activity. It is to be attached to the Grant Agreement with the Local Government or Communities.*
- This checklist focuses on Administrative/Financial, Environmental and Social issues and concerns to ensure that environmental and social dimensions are adequately considered in sub-grant evaluation.*
- The purpose is to identify its feasibility and potential environmental and social impacts of the grant supported activities. If applicable please use the “remarks” section to discuss any suggested mitigation measures.*
- The information should be collected in consultation and coordination with local government, communities, NGOs and leaders of affected community.*



SCREENING QUESTIONS	No	Yes	MITIGATION REQUIRED?	MEASURES
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**General:**

**A. SUB-GRANT SCOPE/OBJECTIVES**

• Are there potential conflicts with the 'negative list'?  No  Yes

• Does the sub-grant the proposal extent to other communities/jurisdiction?  No  Yes

• Is there a need for additional field visits to the location/area?  No  Yes

• Should money be allocated for Operations and Maintenance?  No  Yes

• Other<sup>3</sup>:  No  Yes

**B. GENERAL IMPLEMENTATION ISSUES**

• Is there an additional need for technical assistance, not yet included in the proposal?  No  Yes

• Will technical designs/drawings be required?  No  Yes

• Is any 'heavy equipment' required?  No  Yes

• Are there possible difficulties with acquiring materials?  No  Yes

• Is there a potential risk of possible unexploded ordnance?  No  Yes

• Other:  No  Yes

**C. OTHER REMARKS:**

**ENVIRONMENTAL SAFEGUARDS**

**D. SUB-PROJECT SITING**

IS THE SUB-PROJECT AREA ADJACENT TO OR WITHIN ANY OF THE FOLLOWING ENVIRONMENTALLY SENSITIVE AREAS?

• Protected Area  No  Yes

• Wetland  No  Yes

• Buffer zone of protected area  No  Yes

• Special area for protecting biodiversity  No  Yes

• Other:  No  Yes

<sup>3</sup> 'Other' to be completed by project staff as necessary, depending on the specific sub-project.

SCREENING QUESTIONS	No	Yes	MITIGATION REQUIRED?	MEASURES
<b>E. POTENTIAL ENVIRONMENTAL IMPACTS --WILL THE PROJECT CAUSE:</b>				
• Loss of precious ecological, historical or cultural values?	<input type="checkbox"/>	<input type="checkbox"/>		
• Potential ecological problems?	<input type="checkbox"/>	<input type="checkbox"/>		
• Impairment of downstream water quality and therefore, impairment of downstream beneficial uses of water?	<input type="checkbox"/>	<input type="checkbox"/>		
• Noise or dust from construction equipment?	<input type="checkbox"/>	<input type="checkbox"/>		
• Are there risks of soil erosion?	<input type="checkbox"/>	<input type="checkbox"/>		
• Are there risks of tree cutting?	<input type="checkbox"/>	<input type="checkbox"/>		
• Are there any pollution and/or public health risks	<input type="checkbox"/>	<input type="checkbox"/>		
• Are asbestos, pesticides or other agrochemical involved?	<input type="checkbox"/>	<input type="checkbox"/>		
• Other:	<input type="checkbox"/>	<input type="checkbox"/>		
<b>F. OTHER REMARKS:</b>				
<b>SOCIAL SAFEGUARDS</b>				
<b>G. PROJECT SITING --ARE THERE ANY OF THE FOLLOWING STRUCTURES OR RESOURCES IN THE SUB-PROJECT CONSTRUCTION AREA?</b>				
• Private households	<input type="checkbox"/>	<input type="checkbox"/>		
• Private small businesses/shops	<input type="checkbox"/>	<input type="checkbox"/>		
• Roads, footpaths or other access routes	<input type="checkbox"/>	<input type="checkbox"/>		
• Agricultural land	<input type="checkbox"/>	<input type="checkbox"/>		
• Natural resources shared by community members	<input type="checkbox"/>	<input type="checkbox"/>		
• Cemetery or other area/structures of religious or cultural significance	<input type="checkbox"/>	<input type="checkbox"/>		
• Other:	<input type="checkbox"/>	<input type="checkbox"/>		
ADDITIONAL REMARKS/SUGGESTIONS:				
<b>H. POTENTIAL SOCIAL IMPACTS --WILL THE SUB-PROJECT CAUSE:</b>				
• Temporary loss of land or resources for any families?	<input type="checkbox"/>	<input type="checkbox"/>		
• Permanent loss of land or resources for any families?	<input type="checkbox"/>	<input type="checkbox"/>		
• Conflicts in water supply rights and related social conflicts?	<input type="checkbox"/>	<input type="checkbox"/>		
• Impediments to movements of people and animals?	<input type="checkbox"/>	<input type="checkbox"/>		
• Dislocation or involuntary resettlement of people?	<input type="checkbox"/>	<input type="checkbox"/>		

SCREENING QUESTIONS	No	Yes	MITIGATION REQUIRED?	MEASURES
• Potential social conflicts arising from land tenure and land use issues?	<input type="checkbox"/>	<input type="checkbox"/>		
• Deterioration of livelihoods or living conditions of women or the poorest families in the sub-project service area?	<input type="checkbox"/>	<input type="checkbox"/>		
• Other: .....	<input type="checkbox"/>	<input type="checkbox"/>		

**I. OTHER REMARKS:**

**J. Involuntary Resettlement Category<sup>4</sup>** --After reviewing the information above, it is confirmed that:  
 “The affected people are not physically displaced and less than 10% of their productive assets are lost”, an Land Acquisition Report is required  
 The proposed subproject may result in more significant impacts, i.e. displacement of people and more than 10% of their productive assets are lost, then a RAP will be prepared.  
 No anticipated displacement and loss of assets are negligible.

**K. POTENTIAL SOCIAL IMPACTS ON VULNERABLE GROUPS, IF ANY:  
WILL THE SUB-PROJECT:**

• Affect poverty group?	<input type="checkbox"/>	<input type="checkbox"/>		
• Affect women headed households?	<input type="checkbox"/>	<input type="checkbox"/>		
• Affect Ethnic Groups or Indigenous People?	<input type="checkbox"/>	<input type="checkbox"/>		
• Affect other vulnerable groups?	<input type="checkbox"/>	<input type="checkbox"/>		
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<sup>4</sup> World Bank OP 4.12, Policy on Involuntary Resettlement  
CDRM-EMP for Small Scale Civil Work

SCREENING QUESTIONS	No	Yes	MITIGATION REQUIRED?	MEASURES
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**L. CONCLUSIONS/RECOMMENDATIONS:**

**M. SIGNING OFF:**

**IMPLEMENTING AGENCY:**

**PROJECT SAFEGUARD FOCAL  
PERSON:**

**NAME:** .....  
**POSITION:**.....  
**DATE:** .....

**NAME:** .....  
**POSITION:**.....  
**DATE:** .....

**A2.2: Environmental Monitoring and Inspection Form**

	<b>Environment checklist</b>	<b>Yes / No</b>	<b>Remarks</b>
1	Compliance with the planned mitigation measures and environmental obligations		
2	Occurrence of notable environmental pollution such as dust, water pollution, noise		
3	Encroachment to natural habitats and physical cultural properties		
4	Improper operation and maintenance of construction equipment, fuels and oils		
5	Suitable site of aggregate extraction		
6	Occurrence of complaints		
7	Site cleaning upon completion		
8	Disposal of construction wastes		
9	Waste water management from construction camp		
10	Functional drainage system		
11	Removal of temporal access roads upon completion		
12	Erosion prevention measures for used borrow pits		
13	Rehabilitation borrow pits upon completion		
14	Proper prevention measure of erosion for sloping		
15	Proper disposal area of spoil		
16	Removal of temporary water flows' diversions or blockages upon completion		
17	Removal of construction camps upon completion		

## Annex xx. Simple Mitigation Measures for Small Subprojects

1.

### A3.1 Mitigation measures for very small civil works

Table A3.2 Mitigation Measures for Community/Village Roads including bridge, culvert, track improvement, etc.

Key issues to consider	Mitigation measures	Remarks
<b>Location</b>		
- Conservation area	No animal killing	
	No land occupation	
	No forest cutting	
	Solid waste Management	
	No camping	
- Flooding area	Provide adequate drainage system	
	Include appropriate measure to accommodate flood	
- Mountainous area	Design slope should be less than 17%	
	Side drain	
	Slop protection	
	Guard rail (simple type)	
- Community area	Speed limit sign	
	Dust control	
	Accident prevention	
- Land property	Minute of meeting on conflict resolution and attached the land certificate	
	Cultural area, history etc...	
-Fish spawning areas and migration routes	Avoid negative impacts such as disposal of spoil and tree uprooting which could silt up water courses Ensure optimal design.	
<b>Construction phase</b>		
- Borrow pit	Select the suitable site	
	Avoid new open the borrow pit	
	Back fill instructed by Engineer	
- Erosion risk	Design/provide adequate slop protection	
	Provide maintenance procedure	
- Solid waste	Provide appropriate waste collection and disposal	
- Waste Oil	Do not allow to drain into soil and river	
- Camp	Secure agreement with local community	
	Provide water supply, mosquito net, and adequate sanitation (toilet, washing space, etc), and good housekeeping to prevent rodents, insect, etc.	
-Storage the construction material	Storage in proper area toxic wastes and materials will be stored in safe place.	
<b>Operation phase</b>		
- Public health, road safety, and other social	Consult community and develop mitigations	

negative impacts in the village		
- Speed control,	Install measures to control speed limit (sign, bumper, etc), education campaign	
- Dust control	Control speed limit, periodic watering, plant appropriate trees, surfacing	
- Accident	Awareness training in cooperation with the Police Office	

**Table A3.3** Mitigation Measures for Community/Village Water Supply including Dug well, Drilled well, Gravity Flow System

Key issues to consider	Mitigation measures	Remarks
<b>Location</b>		
-Land property	Minute of meeting on conflict resolution and attached the land certificate	
-Protected area	Approved by concern sector	
-Flooding area	Detail study and proper design	
-Water source protection	Set up regulation and principle	
-Community zone	Establish the water user regulation	
-Close to borrow pit/quarry, waste disposal sites	Water testing	
<b>Construction</b>		
-Solid waste generation	Provide appropriate waste collection and disposal	
-Waste Oil	Do not allow to drain into soil and river	
-Camp	Secure agreement with local community	
	Provide water supply, mosquito net, and adequate sanitation (toilet, washing space, etc), and good housekeeping to prevent rodents, insect, etc.	
-Storage of construction material	Storage in proper area; toxic wastes and materials will be stored in safe place Storage in proper area	
<b>Operation</b>		
-Possible contamination of water	Establish measure to protect quantity and quality of water sources. Fencing water tape	

**Table A3.4** Mitigation Measures for Village Irrigation System including weir, irrigation channels, repaired weir, small reservoir

Key issues to consider	Mitigation measures	Remarks
<b>Location</b>		
<i>Downstream impacts</i>		
- Impact water user	Community consultation (resolution)	
- Fertilizer	Data from community	
	Introduction to community	
- Erosion	Proper design	

- Block fish passage	Consultation with community	
<i>Upstream impacts</i>		
- Safety at reservoir area	Install the protected sign	
- Fish protection	Establish the fish protection area	
- Water recourse protection	Set up management regulation	
<b>Construction phase</b>		
- Borrow pit	Select the suitable site	
	Avoid new open the borrow pit	
	Back fill instructed by Engineer	
- Erosion location	Design the suitable slop protection	
	Provide Maintenance procedure	
- Solid waste	Allocate suitable area for waste.	
	Separate recyclable waste	
- Used oil	Do not allow to drain into soil and river	
- Camp	Let community allocate	
	Provide sanitation, waste water and allocate the soiled waste site	
Storage the construction material	Storage in proper area	
<b>Operation</b>		
Potential increase use of pesticide	Provide training on safe use of pesticides	
	Promote the use of no-chemical agriculture	

Table A3.5 Mitigation Measures for Buildings (including school, market, health center, community hall, sanitary facilities)

Key issues to consider	Mitigation measures	Remarks
Land ownership	Land use certificate	
Water system	Detail study and proper design	
Drainage system	Proper design	
<b>Location</b>		
Land slide	Proper design and slope protection	
<b>Construction</b>		
Waste materials	Provide appropriate waste collection and disposal	
Safety	Provide training	
<b>Operation</b>		
Waste management,	Set up committee	
	Allocate suitable area for waste	
	Separate recyclable waste	
	Set up rules and regulations	
Water system, drainage system	Detail study and proper design to protect rivers and underground water	



## **Annex xxxx. Standard Environmental Code of Practice (ECOP) for Small Civil Works**

4. The following good housekeeping practices and “chance find” are required for all sub-project contracts.

### ***(i) Good engineering and housekeeping practices***

The practice of housekeeping involves proper storage, use, cleanup, and disposal of the various materials used during construction for human and environmental safety.

#### **DO:**

- Limited working hour during the day time, especially in residential areas, and control driving speed;
- Minimize earth excavation and appropriate disposal of spoil;
- Minimize opening of new borrow pits and ensure proper closure;
- Minimize traffic congestion, dust and noise generation;
- Proper maintenance of construction equipment and vehicles;
- Provide appropriate safety sign (day and night) and closely inform local residents;
- Avoid spill of used oil and other toxic materials, including safe transportation and storage;
- Apply good housekeeping in the construction and/or storage sites to ensure safety of workers and peoples (Gather up and remove debris to keep the work site orderly and safe; Plan and implement adequate disposal of scrap, waste and surplus materials; Keep the work area and all equipment tidy. Designate areas for waste materials and provide containers; Keep stairways, passageways and ladders free of material, supplies and obstructions; Secure loose or light material that is stores on roofs or open floors; Keep materials at least 2m (5ft) from openings, roof edges, excavations or trenches; Remove or bend over nails protruding from lumber; Keep hoses, power cords, welding leads, etc from laying in heavily traveled walkways or areas; Ensure structural openings are covered/protected adequately; Provide the appropriate fire extinguishers for the materials found on-site. Keep fire extinguisher stations clear and accessible; etc.)
- Ensure access to clean water and latrines by workers and provide mosquito net.
- Avoid social/cultural conflict between workers and local population.

#### **DO NOT:**

- Do not permit rubbish to fall freely from any locations of the project and/or access by animals (dogs, cats, pigs, etc.). Use appropriate containers.
- Do not throw tools or other materials.
- Do not raise or lower any tool or equipment by its own cable or supply hose.
- Use grounding straps equipped with clamps on containers to prevent static electricity buildup.
- Do not allow hunting of animals by workers in protected areas.

#### **SPECIAL NOTE ON FLAMMABLE/EXPLOSIVE MATERIALS:**

- Store flammable or explosive materials such as gasoline, oil and cleaning agents apart from other materials.
- Keep flammable and explosive materials in proper containers with contents clearly marked.
- Dispose of greasy, oily rags and other flammable materials in approved containers.
- Store full barrels in an upright position.

- Store empty barrels separately.
- Post signs prohibiting smoking, open flames and other ignition sources in areas where flammable and explosive materials are stored or used.
- Store and chain all compressed gas cylinders in an upright position.
- Mark empty cylinders and store them separately from full or partially full cylinders.
- Ventilate all storage areas properly.
- Ensure that all electric fixtures and switches are explosion proof where flammable materials are stored.

**(ii) “Chance Find” procedures**

The following “*chance find*” procedures to be included in all civil works contract:

“If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor shall:

- Stop the construction activities in the area of the chance find;
- Delineate the discovered site or area;
- Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities or the National Culture Administration take over;
- Notify the supervisory Project Environmental Officer and Project Engineer who in turn will notify the responsible local authorities and the Culture Department of Province immediately (within 24 hours or less);
- Responsible local authorities and the Culture Department of Province would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed by the archeologists of National Culture Administration. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values;
- Decisions on how to handle the finding shall be taken by the responsible authorities and Culture Department of Province. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage;
- Implementation for the authority decision concerning the management of the finding shall be communicated in writing by relevant local authorities; and
- Construction work could resume only after permission is given from the responsible local authorities or Culture Department of Province concerning safeguard of the heritage.

