

# Initial Environmental Examination

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January 2016

## LAO: Greater Mekong Subregion Biodiversity Conservation Corridors Project

Prepared by Department Of Forest Resource Management. Ministry Of Natural Resources And Environment (MONRE) for the Asian Development Bank.

**CURRENCY EQUIVALENTS**

(as of 31 January 2016)

Currency unit	–	Lao Kip (LAK)
LAK1.00	=	\$0.0059
\$1.00	=	LAK8,150.00

**ABBREVIATIONS**

DAFO	–	district agriculture and forestry office
EMP	--	Environmental Management Plan
IC	--	infrastructure consultant
IEE	--	Initial Environmental Examination
LAR	–	land acquisition and resettlement
NPAs	--	national protected areas

**NOTE**

In this report, "\$" refers to US dollars, unless otherwise stated

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***Appendix 1***  
***Ban Phalai Ford Rehabilitation***  
***Initial Environmental Examination (IEE) and***  
***Environmental Screening Checklist***

## ENVIRONMENTAL IMPACTS SCREENING CHECKLIST

Sub-Project No: 13  
Sub-Project Name: Rehabilitation of ford and road approaches  
Province : Champasak  
District : Pathoumphone  
Village : Phalai

**Background Explanation:** The Small-scale infrastructure component of the GMS Biodiversity Conservation Corridor Project focuses on community participation in the identification, design and implementation with an inclusive strategy of making the infrastructure improvements implemented more environmentally friendly as well as being closely matched to the needs of the community. The following types of sub-projects are planned for:

- i. roads (access and internal village roads);
- ii. village water supply;
- iii. buildings which can include school, health clinics, market place, village meeting hall, school building / teachers' house, and patrolling house;
- iv. irrigation and irrigation repairs;
- v. sanitation;
- vi. bridge or ford and
- vii. paddy field and bund development

Environmental assessment helps planners to think constructively about ways of protecting and improving the environment. The first step in the environmental assessment process determines the scope and level of analysis for the rest of the assessment and is called scoping and is important to ensure the important issues receive appropriate attention, and provides data for sub-project evaluation and design.

Using the following checklists, the survey and data collection teams will identify and collect the information required to allow the environmental impacts to be fully assessed as the sub-project design proceeds.

### Description of the Environment:

Proposed rehabilitation of the ford on the access road to Phalai, then Tavang and Ta Ong villages, Pathoumphone district, Champasak province where the three villages are covered by the GMS Biodiversity conservation corridors project output 3-small scale infrastructure. The subproject location is 32 km away from the district center heading toward to southeast at a location with coordinate references of 14°43'6,18"N and 106°7'4,29" E. The subproject site is located at the existing ford, crossing Houay Khinok. The topography is flat with wetland areas comprising laterite soil and volcanic rock along the river with the ford and approach roads founded on a hard pan of solid rock. Average annual precipitation is 2041 mm, maximum precipitation is 398 mm in August, and minimum precipitation is 5mm in January. An average high temperature in April is 34.8 °C and average low temperature in January is 16.3 °C. Based on the feasibility study survey and consultation meetings the assessment found that the proposed ford construction will not lead any significant negative environmental and social impacts due to fact that the work involves the rehabilitation of an existing ford to restore its condition and southern approaches for the safe passage of vehicles and local transportation. The footprint for the proposed works is over the existing alignment and footprint of the present failed ford and approaches. During construction period between March and May a temporary detour (diversion road) or earthen coffer dam will be built to allow commuters to travel while the rehabilitation works proceed when the water level is at a minimum depth of approximately 10-30 cm.

### Potential Environmental Impact:

Based on the feasibility study field surveys and village meeting the result show that the potential environmental impact related to project location is minor and can be mitigated through a simple environmental management plan (EMP). No widening or realignment of the existing ford or approach roads are proposed and the proposed subproject will not impact to the environment and society.

### Mitigation Measures:

The detailed survey and design will be aligned along the existing road and right-of-way to avoid and mitigate any perceived or potential environmental impacts related to the subproject alignment. Subsequently, the survey and design will inform the local authority and people who may be affected by the activities and will be used as the basis for further consultation.

## 1. Check List for Identification of likely Environmental Impacts

Potential Environmental Effects (Likely impacts if any, on)	What the Effect is Likely to Be	Is it Significant (Y/N)
<b>Environmental Considerations Due to Sub-project Location</b>		
Residential, agricultural and common property land.		N
Effects on vegetation.		N
Effects on wildlife.		N
Effects on fisheries.		N
Effects on cultural property or artefacts.		N
Influence on current land uses.		N
Influence on economic activities.		N
Relation to other plans (national or local development, environmental, conservation plans etc).	Note; Sub-project cannot conflict with, or be provided for in other development plans. If this conflict exists move to the sub-project which is the next village priority. There is no conflict with other plans or projects	
Land tenure problems or land use conflicts.	Note: If land tenure or land use problems are identified the subproject cannot be accepted. The social safeguards are assessed as Category C. No land acquisition of resettlement is required; a LAR plan is also not required..	
Ethnic minorities.		N
<b>Environmental Considerations for Sub-project Design Response</b>		
Choice of materials for construction and their sources (e.g. timber products).	May use timber for formwork and structure, formwork support, and worker camp.	Minor
Quarries and borrow pits for laterite and fill materials.	Earthwork excavation and compaction at the end of ford	Minor
Land drainage and drainage facilities.	Diversion of water flow and diversion drainage during construction period.	Minor
Land formation, construction of bunds and flood overflows and relief.		N
Land stability.		N
Sanitation, receiving environment,		N

separation from households, wells and natural water bodies.		
<b>Environmental Considerations Related to Construction Stage</b>		
Construction of civil works, pavements and structures.	Noise and dust nuisance , health risk (temporary)	Minor
Quarrying and borrow pit operation and remedial works.		N
Bricks and brick making for building construction – source of materials and fuel for brick making.		N
Likely use natural timber poles for scaffolding and the source of the poles.	May be used as timber for formwork and structure, formwork support, and worker camp.	Minor
Safety Issues.	Temporary safety sign installation	Minor
Depots and construction camps.	Temporary construction camp	N
Noise and noise control.	Noise from construction equipment	Minor
Dust nuisance.	Dust from construction equipment	Minor
Runoff and erosion.		N
Spillage of oils and fuels, etc.	Oil and fuel leaking from vehicles and equipment .	Minor
<b>Environmental Considerations Related to Sub-project Operations</b>		
Safety Issues.	Better road and ford will facilitate easier year round travel for local people.	Y
Effects of drainage structures.	Culverts under ford are being maintained, One addition shallow box culvert to be provided	N
Maintenance Issues.	Lack of funds and labor to maintain the structure. Public Works Department has confirmed agreement to provide the required maintenance	Minor
<b>Potential Environmental Benefits</b>		
Improved access for agricultural materials (roads and access.)	Facilitate local people travel to nearby village easier access to schools, health care clinic and center, and for the transport of goods and agriculture produce.	Y
Improved and more efficient movement of crops to secure storage of markets (roads and access).	Facilitate travel by local people to nearby villages, to schools and health care center, and for the	Y

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	transport of goods and agriculture produce.	
Improved cross drainage for irrigation, entrance to cropped areas (roads and access).		Y
Improved access to health services, education and social services (roads, access, health clinics, school buildings and teacher's housing).	Facilitate travel by local people between village to village	Y
Improved rural incomes and economy and lifestyles (market places).	Access to local market and improved transport of goods to district market	Y
Improved water supplies and community health and wellbeing.		N
Improved sanitation practices and community health and hygiene.		N
Introduction of improved low cost sanitation measures.		N
Improved community health and wellbeing (health clinics).		N
Improved education (school buildings and teacher's houses).		N
Improved food supply (less deficiency) (irrigation rehabilitation and improvements. Paddy field and bund formation).		N
Improved management of NPAs and natural and forest resources (patrolling houses).		N
Improved village cohesion and management / communication of village affairs (village meeting halls).	Improved movement between villages during wet and dry seasons. Improved transportation of harvested crops, post-harvest handling and reduced crop loss. All beneficial impacts	Y

Environmental Management Plan (EMP)

The following Environmental Management Plan (EMP) has been developed from the environmental screening of the Ban Phalai Ford Rehabilitation subproject. The EMP addresses the potential environmental impacts identified in the above checklist of potential environmental impacts.

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Potential Environmental Problem Areas	Potential Environmental Problems	Possible Mitigation Measures	Responsibility for Implementation
Design			
Choice of materials and their sources	Use of materials that do not last long. Use of excessively expensive materials. Use of forest products from National Park Areas. Use of materials that generate excessive dust.	Appropriate comment on selection with recommendations for alternative materials. Construction material such as gravel and sand shall be transported from sources, approved by district and provincial authorities. Steel, cement and other material needed shall be purchase from market or construction material suppliers. Timber and wood material shall be purchased from suppliers approved by DAFO.	IC with district officers.
Adequacy of drainage facilities.	Disruption of fish movements, risk of damage to property.	Provision of adequately designed drainage and culverts under ford.	IC with district officers.
Construction			
Construction materials and their sources.	Use of materials that do not last long. Use of excessively expensive materials. Use of forest products from National Park Areas. Use of materials that generate excessive dust.	Limit working hours and not allowing work at night time. Appropriate comment on selection with recommendations for alternative materials. Construction material such as gravel and sand shall be transported from sources, approved by district and provincial authorities. Steel, cement and other material needed shall be purchase from market or construction material suppliers. Timber and wood material shall be purchased from suppliers approved by DAFO.	Contractor. IC works inspector
Construction of civil works, pavement and building structures.	Noise and vibration nuisance.	Limit working hours and not allowing work at night time. Planning of operations so that people are less disturbed. Avoidance of noisy operations during night times and near important wildlife.	Contractor. IC works inspector.
	Dust nuisance and health risk.	Wetting of surfaces during the dry season.	Contractor. IC works



			inspector.
	Spillage of oils and fuels, from equipment or workshop.	Cover in specification. Store in bunded and covered area. Check and repair oil, fuel and hydraulic fluid leakages for equipment. Prevent flow to water courses. Have absorbent material (sand or sawdust) available to absorb spillages for safe removal.	Contractor. IC works inspector.
Safety Issues	Dangers to workers and local people.	Safety provisions in contract. Issuance of safety apparel. Contractor's safety plan.	Contractor. IC works inspector.
Effects on existing traffic	Disruption of traffic during construction operations.	Special measures to maintain traffic flows during construction. Providing detour or diversion road	Contractor. IC works inspector.
Depots and Construction camps	Effects on water quality. Nuisance to local people. Spread of infectious diseases from construction workers to local people.	Provisions for high standard of management in Construction camp and at all depots or temporary parking or storage sites.	Contractor. IC works inspector.
Operation			
Safety issue	Better road and ford may facilitate local people traveling easier	Install traffic signs and temporary warning signs during construction.	Contractor. IC works inspector.
	Accident may occur after completion of project.	Install warning sign and speed limit at intersections and within village environs.	
Maintenance Issues	Overload trucks or vehicle may damage road. Lacking budget for maintenance.	Limit load of vehicle to travel through this road. Provision for maintenance and repair as necessary.	Contractor. IC works inspector with district officers.
	Risk to people, land and adjacent natural resources if maintenance and operations is not adequately budgeted and carried out.	Provision for maintenance and repair as necessary.	

## 2. Environmental Monitoring Plan

Impacts to be Monitored	Parameters	Location	Measurements	Frequency	Responsibilities
<b>Construction Phase</b>					
Implementation of construction	Noise & vibration nuisance.	Works site.	Reasonableness and hours of work	Ongoing throughout work period.	IC works inspector.

Impacts to be Monitored	Parameters	Location	Measurements	Frequency	Responsibilities
mitigation measures detailed in the EMP.	Dust nuisance and health risk.	Works site and exposed areas of excavation.	Dust layers by wetting or other approved measures.	Ongoing throughout work period.	IC works inspector.
	Spillage of oils and fuels, from equipment or workshop.	Equipment storage area and workshop.	No spillage and all materials stored as specified. Accidental spillage blinded and cleanup for safe disposal immediately. All equipment maintained and operating without leaks.	Ongoing throughout work period.	IC work's inspector. IC environmental specialist during frequent inspection of works.
	Dangers to workers and local people.	Works site.	Warning signs in place. Excavations adequately barricaded.	Ongoing throughout work period.	IC works inspector.
	Depots and construction camps - Nuisance to local people. Spread of infectious diseases from construction workers to local people.	Works Depots and construct'n camp.	Workers briefed on risks of HIV/AIDS and related responsibilities. Depots and camps maintained in a clean and hygienic state. Refuse and organic wastes collected in hygienic manner and removed regularly and disposed of in approved manner.	Ongoing throughout construction period. Construction camps dismantled and area cleaned and reinstated following works completion.	IC works inspector. District officers and village authority. IC environmental specialist in regular works site visits.
Operations Phase					
Culvert clearance and complaints	Culvert cleaned and maintained.	Culvert location	Clearance of culvert.	Before and following storms. Regular inspections and clearance.	District Department of Public Works

### 3. Reporting of Environmental Monitoring Results

The IC's national Environment Specialist will report on the environmental safeguards on a three monthly basis. The reporting of EMP and monitoring results shall cover the information and the progress and results of mitigation (monitoring reports and feedback from the IC works inspector, district staff and the village authority). Issues identified will be included in the supervision report together with the steps being taken for full mitigation of the identified issues. The environmental and monitoring report formats are provided herewith.

**Table A8-2-2b: Summary of Compliance with Environmental Mitigation Measures**

<i>Specific Mitigation Measures)</i>	<i>Compliance Attained (Yes, No, Partial)</i>	<i>Comment on Reasons for Non-Compliance</i>	<i>Issues for Further Action</i>
1.			
2.			
3.			

**Table A8-2-2c: Issues for Further Action**

<i>Issue</i>	<i>Cause</i>	<i>Required Action</i>	<i>Responsibility</i>	<i>Timing</i>	<i>Resolution</i>
Old Issues from Previous Reports					
1.					
2.					
New Issues from this Report					
1.					
2.					
3.					
Report prepared by:					

#### Complaints (if applicable) will be reported as follows

- Provide details of any complaints that have been raised by the local population and other stakeholders (who, what, where, when).
- Document how the complaints were addressed or will be addressed, who are the responsible project staff, specific actions and dates.

#### Compliance with EMP

- Determine if the required mitigation measures are sufficient or still appropriate considering current site conditions and on-going site works.
- Describe any difficulties related to the implementation of the proposed mitigation measures. Indicate any changes proposed by the contractor to improve environmental protection.